

峨眉植物圖誌 黃季陸

ICONES PLANTARUM OMEIENSIIUM

Volume 2

Number 1

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

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67781

Published by
The National Szechuan University
Chengtu, Szechuan
China

December 1945

AWT1/1497/02

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New names are in roman; previously published names are in small capitals; synonyms and erroneous names are in italics.

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Plate 101.

STACHYURUS CHINENSIS Franchet.

Stachyuraceae.

Stachyurus chinensis, Franchet in Journ. de Bot. XII (1898), 234.—Diels in Engler, Bot. Jahrb. XXIX (1900), 475.—Rehder in Sargent, Pl. Wilson, I (1913), 287.—Rehder, Man. Cult. Trees & Shrubs, (1927), 641.

Stachyurus praecox, Diels (non Siebold et Zuccarini) in Engler Bot. Jahrb. XXIX (1900), 475.

Shrub 2 rarely 3 metres high; bark smooth, purplish-brown or dark brown; branchlets stout, glabrous, reddish-purple or greenish-brown. Leaves developing after the opening of flowers alternate, chartaceous, obovate or elliptical, 7-12 cm. long, 4-7 cm. broad, acute or rounded at the apex with a caudate acumens, 2 cm. in length, subrotund or broadly cuneate at the base, serrate on the margin with appressed crenulate teeth, upper surface bright green, midrib and 7-9 pairs of lateral nerves slightly impressed, lower surface pale green, with prominent midrib and slightly raised lateral nerves; petioles 1.5-2.5 cm. long, purple, glabrous. Flowers numerous (usually 15 to 20) in pendulous racemes 4-6 cm. long, from the axilla of leafless branchlets; bracts 2, triangular; sepal greenish-yellow, ovate, 2 mm. long; petals 4, yellow, obovate, 7 mm. long; stamens 8, slender, 6 mm. long, anthers yellow, 2-celled; pistil nearly as long as the petals, ovary superior, ovoid, style glabrous, stigma capitate or slightly lobed. Fruit an ellipsoid berry, 6 mm. in diameter, on pedicel 3 mm. long.

MOUNT OMEI: Pao-ku, alt. 1300 m., shrub 3 metres high, flowers yellowish-green, *W. P. Fang*, No. 16141, April 12, 1941; Chiu-lao-tung, alt. 1800 m., shrub 2 metres high, flowers in buds, *T. C. Lee*, No. 4454, March 1940; Hua-yen-ting, alt. 2096 m., in forests, shrub 2 metres high, bark greyish brown, leaves green above and light green below, *C. L. Sun*, No. 2550, June 22, 1940; Hsi-hsiang-chih, alt. 2110 m., *S. S. Chien*, No. 6093, July 13, 1937; same locality, in thickets, small tree 8 metres high, flowers yellow, common, *W. P. Fang*, No. 16007, April 1, 1941; Tsuan-tien-po, alt. 2100 m., shrub 3 metres high, flower greenish-yellow, *T. C. Lee*, No. 4467, March 1940.

SIKANG: Pao-hing-hsien, alt. 3100 m., *K. L. Chu*, No. 3252, July, 1936.

Distribution: Hovan, Shensi, Kiangsi, Hupeh, Szechuan, Sikang, Yunnan and Fukien.

This species is very rare at Mount Omei. It differs from *Stachyurus himalaicus* Hooker f. et Thomson in its obovate or elliptical leaves which are crenate on the margin and caudate acuminate at the apex and in its short inflorescence, which consists of 15 to 20 flowers. W. P. Fang

Fig. 1, a flowering branch (natural size).

2, a fruiting branch (natural size).

3, a flower (enlarged 5 times).

4, a fruit (enlarged 3 times).



圖版一百零一

中國旌節花

旌節花科

灌木高二公尺至三公公尺；樹皮光滑，紫褐色或深褐色；幼枝粗壯，無毛，紅紫色或綠褐色。葉於花開後發出，互生，紙質，倒卵形或橢圓形，長七至十二公分，寬四至七公分，頂部銳尖或圓形而有長二公分之尾狀尖端，基部稍圓或為圓楔形，邊緣具有密接之鈍鋸齒，表面亮綠色，中脈及七至九對之側脈微凹下，葉背面灰綠色。有突出之中脈及微凸之側脈；葉柄長一公分半至二公分半，紫色，無毛。花多（常為十五至二十枚）生於長四至六公分之下垂總狀花序上，由無葉小枝之腋間發出；苞片二，三角形；萼片黃綠色，卵形，長二公厘；花瓣四，黃色，倒卵形，長七公厘；小蕊八本，纖細，長六公厘，花藥黃色，二室；大蕊幾與花瓣等長，子房上位，卵圓形，花柱光滑無毛，柱頭頭狀或稍成裂片。果為橢圓形之漿果，直徑六公厘，果柄長三公厘。

產於峨眉山九老洞，鑽天坡，洗象池等處，海拔一千三百公尺至二千一百一十公尺之叢林中。

分佈於河南，陝西，江西，湖北，四川，西康，雲南，福建等省。

此種在峨眉山極少，其不同於西域旌節花者，在其倒卵形或橢圓形之葉，邊緣有鈍鋸齒，頂部有尾狀尖端，以及具十五至二十花所組成之短花序。

圖解：1.花枝（原大）； 2.果枝（原大）； 3.花（放大五倍） 4.果（放大三倍）

... This species is very rare at Mount Omei. It differs from *Zanthoxylum armatum* in its elliptical leaves which are serrate on the margin and condense umbels of flowers and its fruit pubescence, which consists of 15 to 20 flowers.

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Fig. 1. A flowering branch (natural size).
 2. A fruiting branch (natural size).
 3. Flower (enlarged 5 times).
 4. Fruit (enlarged 3 times).





101. STACHYURUS CHINENSIS Franchet

STACHYURUS RETUSUS Yang.

Stachyuraceae.

Stachyurus retusus Yang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. XII, No. 2 (1939), 105, fig. 6.

Shrub 3 metres high; bark dark-brown, smooth; branchlets slender, terete, those of the current year green, glabrous, those of more than one-year old greyish-brown or dark brown, with sparse ovate lenticels. Winter-buds axillary, ovoid or elongated, scales 5-6, ovate, acute or acuminate, glabrous or rarely puberulous on the outer surface near the apex. Leaves alternate, chartaceous or subcoriaceous, orbicular or suborbicular rarely obovate, 7-9 cm. long, 4-8 cm. broad, retuse or rarely truncate at the apex, revolute and sparsely serrate with crenate-teeth on the margin, upper surface shining green, glabrous, lower surface whitish-tomentose, usually less so when matured, midrib conspicuous above, prominent below, lateral veins 5-7 pairs, curved, conspicuous on both surfaces; petioles 1.5-2.5 cm. long, grooved above, rounded below, purplish-green, glabrous. Flowers not fully open yet, in axillary pendulous racemes 2 cm. long, sepals 4, greenish, petals 4, whitish, stamens 8, ovary superior, ellipsoid, glabrous, style short with 4-lobed stigmas. Fruit a ellipsoid berry 5 mm. in diameter, usually several in a short fruiting raceme 3 cm. in length; pedicels 2-3 mm. long.

MOUNT OMEI: near Chiu-lao-tung, alt. 1800 m., shrub about 3 metres high, branchlets purplish green, leaves oblong-orbicular, light green, glabrous with reddish veins above, light green and white tomentose beneath, mostly notched at the apex, cordate at the base, serrate and reflexed on the margin, young fruits obovoid, dark green, pubescent at the base, 9 mm. long, 7 mm. in diameter, with a short pedicel and short persistent style, in a short compact fruiting raceme, *W. C. Cheng*, No. 10439, May 27, 1940; Hsi-hsiang-chih, alt. 2000 m., *W. C. Cheng*, No. 6818, October 1936 (ex Dr. Cheng); Chin-ting, alt. 3135 m., *H. C. Chow*, No. 7674, June 27, 1938; without precise locality, shrub 3 metres high, leaves suborbicular, *C. W. Yap*, No. 3365 (type), October 1938; without precise locality, shrub 1-2 metres high, branchlets yellowish-green, leaves orbicular in outline, subcordate at the base, the apex of the leaves variable, some notched or rounded and cuspidate at the apex, compressed serrate at the margin, bluish-green above with elevated veins, densely pubescent or tomentose below, petioles 1 cm. long, dull purple in colour. *W. C. Cheng*, No. 10357, May 13, 1930 (ex Dr. Cheng, we have no specimens in our herbarium).

Distribution: Endemic.

This well-marked species is easily distinguished from all the known species by the orbicular or suborbicular leaves which are emarginate on the apex and whitish-tomentose on the lower surface
.....W. P. Fang.

Fig. a fruiting and leafy branch (natural size).

圖版一百零二

四葉旌節花

旌節花科

灌木高三公尺；樹皮黑褐色而平滑；小枝細圓，當年生小枝綠色，光滑無毛，多年生枝灰褐色或深褐色，具有稀疏之卵形皮孔。冬芽腋生，卵圓形或長形，鱗片五至六，卵形，銳尖或漸尖，近頂端之下面光滑或有少許之絨毛。葉互生，紙質或近革質，扁圓形或稍扁圓，稀為倒卵圓形，長七至九公分，寬四至八公分，先端凹形，稀為截形者，葉緣反捲，具稀疏之鋸齒，表面亮綠，光滑無毛，背面被淺色細絨毛，已長成之葉背面之毛較少，中脈在葉表而顯明，在葉背面則突出，側脈五至七對，微曲，在葉兩面皆顯明；葉柄長一公分半至二公分半，上面有溝，下面渾圓，紫綠色，光滑無毛。花尚未充分開放，成腋生下垂長二公分之總狀花序，萼片四枚，淡綠色，花瓣四枚，淡白色，小蕊八本，子房上位，橢圓形，光滑無毛，花柱短，具四裂之柱頭。果為漿果，橢圓形，直徑五公厘，常僅數枚生於長三公分之總狀果穗上，果梗長二至三公厘。

產峨眉九老洞，洗象池，金頂等處，海拔由一千八百公尺至三千一百三十公尺左右之叢林中。

本種因其葉形扁圓，先端凹缺，葉背面有淡白色細絨毛，易與其他各種區別。

圖解：着果及葉之枝（原大）。



102. *Stachyurus retusus* Yung

Plate 103.

STACHYRUS SZECHUANENSIS Fang.

Stachyuraceae.

Stachyurus szechuanensis Fang, spec. nov.

Arbor parva 5 m. alta; cortex niger-fuscus. Ramuli graciles, rotundi, glabri; hornotini viridi; annotini et annosiores nigri diplosi coloribus. Gemmae axillariae conoideae, perulia 4-5, crassis, ovatis, acuminatis abrupte, glabris. Folia alternata, coriacea, obovata vel oblongo-obovata, 4-8 cm. longa, 2.5-4.5 cm. lata, apice subrotundata vel obtusa, basi late cuneata vel cuneata simpliciter, margine revoluta et serrata appressa; extrinsecus profunde viridia et glabra; intrinsecus pallide viridia vel purpureo-viridia, glaucentia, costa media supra conspicua, subtus prominente; nervis utrinsecus 5-7, supra obsolete, subtus conspicuis. Petioli 8-20 mm. longi, glacii, glabri, supra canaliculati, subtus rotundati. Flores ignoti. Fructus ovoidei; baccae 6 mm. diametro, 3-5 in racemose brevi pendulo 2 cm. longo; pedicelli 2 mm. longi.

Small tree 5 metres high; bark dark brown, smooth; branchlets slender, terete, glabrous, those of the current year green and those more than one year old tinged black. Winter-buds axillary, conical, scales 4-5, thick, ovate, abruptly acuminate, glabrous. Leaves alternate, coriaceous, obovate or oblong-obovate, 4-8 cm. long, 2.5-5.5 cm. broad, subrotund or obtuse on the apex; broadly cuneate or cuneate at the base, revolute and serrate with appressed sharp teeth on the margin, upper surface deep green, glabrous, lower surface pale green or purplish-green, glaucescent, midrib conspicuous above, prominent below, lateral nerves 5-7, obsolete above, conspicuous below; petioles 8-20 mm. long, slender, glabrous, grooved above, rounded below. Flowers unknown. Fruits ovoid berries 6 mm. in diameter, 3-5 in a short pendulous raceme 2 cm. in length; pedicels 2 mm. long.

MOUNT OMEI: northwest of Mount Omei, Yun-ling-hsien, Wa-wu-shan, C. Y. Yao, No. 3744, July 1939; same locality, near Hsi-tien-chih, in forests, small tree 5 metres high, bark dark-brown, fruits green, C. L. Sun, No. 1230 (type), September 5, 1939; Mount Omei, without precise locality, shrub with shoots green while young, becoming yellowish-green in the second year, petioles grooved above, leaves bluish-green and with elevated veins above, midrib red toward the base on the upper surface, glaucescent below, margin recurved, crenate-serrate, fruits obovoid, about 6 mm. across W. C. Cheng, No. 10389, May 14, 1940 (according to Dr. Cheng, we have not found specimen in our herbarium.)

It is very interesting to have this new species described from the plants of Mount Omei and its vicinity. This new species in near *Stachyurus retusus* Yang but differs from that species in having, obovate leaves which are pale green and glaucescent but not pubescent on the lower surface. The fruiting inflorescences are a little shorter than those of.....*Stachyurus retusus* Yang.

Fig. a leafy and fruiting branch (natural size).

As Mount Omei seems to be the centre of distribution of the Chinese species of this genus which seven species grow on this mountain and two of them are endemic to this region. It seems desirable to make a key to all the Chinese species of this genus as follows:

- A. Leaves evergreen, coriaceous or subcoriaceous; flowers with the leaves.
- B. Leaves lanceolate or linear-lanceolate.
- C. Leaves linear-lanceolate.....*Stachyurus salicifolius* Fr.
- CC. Leaves lanceolate or oblanceolate.....*Stachyurus yunnanensis* Fr.
- BB. Leaf obovate.....*Stachyurus obovatus* Cheng.
- AA. Leaves deciduous, chartaceous; flowers before the leaves:
- B. Leaves ovate to oblong-ovate or elliptic.
- C. Shrub to 4 metres high; leaves elliptic-ovate to ovate-lanceolate, 7-14 cm. long, acuminate at apex, rounded at base, serrate with slightly spreading teeth, racemose inflorescences 5-8 cm. long, not branched.....*Stachyurus praecox* S. & Z.
- CC. Shrub, 2-3 metres high; leaves ovate or oblong-ovate, 6-12 cm. long, long-acuminate at apex, rounded or subcordate at base, crenate-serrate; racemose inflorescence 4-6 cm. long, usually branched.....*Stachyurus chinensis* Fr.
- CCC. Small tree; leaves oblong-ovate, 10-15 cm. long, acuminate at apex, rounded at base serrulate with appressed sharp teeth; inflorescence 8-11 cm. long, not branched.....*Stachyurus himalaicus* Hooker f. & Thomson.
- BB. Leaves orbicular, revolute and sparsely serrate on the margin, whitish-tomentose at the lower surface.....*Stachyurus retusus* Yang.
- BBB. Leaves obovate, revolute and sharply serrate on the margin, glaucescent at the lower surface.....*Stachyurus szechuanensis* Fang.

圖版一百零三

四川旌節花新種

旌節花科

小喬木高五公尺；樹皮深褐色，光滑；小枝細圓無毛，當年之枝綠色，多年之枝微現綠色，冬芽腺生，圓錐形，鱗片四至五枚，質厚，卵形，陡尖，無毛。葉互生，革質，倒卵形或長圓倒卵形，長四至八公分，寬二公分半至五公分半，先端微圓或鈍形，基部楔形或寬楔形，邊緣常反捲而具密接齒尖銳之鋸齒，葉表面深綠色，無毛，葉背面灰綠色，紫綠色或藍灰色，中脈在葉表面顯明，在背面突出，側脈五至七，表面不顯；背面顯脈：葉柄纖細，長八至二十公厘，無毛，上面有溝紋，下面微凹。花之特性不明。果爲卵圓形之漿果，直徑六公厘，僅三至五枚生於長二公分短而下垂之總狀花序上；果梗長二公厘。

此種產於峨眉山及峨眉山西北之發經縣瓦屋山下天地。

此新種與凹葉旌節花極相近，其區別在此種具倒卵形之葉，葉之背面係藍灰色且不見絨毛，果序亦較凹葉旌節花爲短。

圖解：着葉與果之枝（原大）。

峨眉山爲旌節花屬分佈之中心，斯山共產七種且其中有二種之產地限於此區。茲爲研究方便起見，特附此屬各種之檢索表如下：

甲。葉常綠，革質或亞革質；花與葉同時生長。

乙。葉披針形或線狀披針形。

丙。葉線狀披針形。

丙丙。葉披針形或倒披針形。

乙乙。葉倒卵形。

甲甲。葉冬季凋落，紙質；花於發葉之前開放。

乙。葉卵形，長方卵形或橢圓形。

丙。灌木高四公尺；葉橢圓形或卵狀披針形，長七至十四公分，先端尖銳，基部圓形，邊緣具略外伸之鋸齒；總狀花序長四至六公分，常不分枝。

丙丙。灌木高二至三公尺；葉卵形或長方卵形，長六至十二公分，先端尖銳具長尖，基部圓形或歪心臟形，邊緣具鈍鋸齒；總狀花序長四至六公分，常分枝。

丙丙丙。小喬木；葉長方卵形，長十至十五公分，先端尖銳，基部圓形，邊緣具密接之尖銳小鋸齒；總狀花序長八至十一公分，不分枝。

乙乙。葉圓形，邊緣具反捲之疎鋸齒，背面具淺白色之柔毛。

乙乙乙。葉倒卵形，邊緣具反捲之銳鋸齒，背面微具白粉。

CC。葉披針形或線狀披針形，先端尖銳，基部楔形，邊緣具反捲之鋸齒。

CCC。葉倒卵形，先端微圓或鈍形，基部楔形，邊緣具反捲之鋸齒。

CC。葉披針形或線狀披針形，先端尖銳，基部楔形，邊緣具反捲之鋸齒。

CCC。葉倒卵形，先端微圓或鈍形，基部楔形，邊緣具反捲之鋸齒。

CC。葉披針形或線狀披針形，先端尖銳，基部楔形，邊緣具反捲之鋸齒。

CCC。葉倒卵形，先端微圓或鈍形，基部楔形，邊緣具反捲之鋸齒。

CC。葉披針形或線狀披針形，先端尖銳，基部楔形，邊緣具反捲之鋸齒。

CCC。葉倒卵形，先端微圓或鈍形，基部楔形，邊緣具反捲之鋸齒。

CC。葉披針形或線狀披針形，先端尖銳，基部楔形，邊緣具反捲之鋸齒。

CCC。葉倒卵形，先端微圓或鈍形，基部楔形，邊緣具反捲之鋸齒。

CC。葉披針形或線狀披針形，先端尖銳，基部楔形，邊緣具反捲之鋸齒。

CCC。葉倒卵形，先端微圓或鈍形，基部楔形，邊緣具反捲之鋸齒。

CC。葉披針形或線狀披針形，先端尖銳，基部楔形，邊緣具反捲之鋸齒。

CCC。葉倒卵形，先端微圓或鈍形，基部楔形，邊緣具反捲之鋸齒。

CC。葉披針形或線狀披針形，先端尖銳，基部楔形，邊緣具反捲之鋸齒。

CCC。葉倒卵形，先端微圓或鈍形，基部楔形，邊緣具反捲之鋸齒。

CC。葉披針形或線狀披針形，先端尖銳，基部楔形，邊緣具反捲之鋸齒。

CCC。葉倒卵形，先端微圓或鈍形，基部楔形，邊緣具反捲之鋸齒。

CC。葉披針形或線狀披針形，先端尖銳，基部楔形，邊緣具反捲之鋸齒。



103. *Stachyurus szechuanensis* Fang

LIQIDAMBAR FORMOSANA Hance.

Hamamelidaceae.

Liquidambar formosana Hance in Ann. Sci. Nat. ser. 5, V (1866), 218; in Journ. Bot. V (1867), 110; VIII (1870), 274.- Oliver in Hooker Icon. Pl. XI, 14 (1867-1871), t. 1020.- Hemsley in Journ. Linn. Soc. XXIII (1887), 291.- Diels in Engler, Bot. Jahrb. XXIX (1900), 379.- Pampanini in Nuov. Giorn. Bot. Ital. n.ser. XVII (1910) 238.- Dunn et Tutcher in Kew Bull. Misc. Inform. add. ser. X (1912), 101.- Rehder et Wilson in Sargent, Pl. Wilson. I (1913), 421.- Rehder in Journ. Arn. Arb. V (1924), 167.- Handel-Mazzetti, Symb. Sin. VII, Lieferung 2 (1931), 238.

Liquidambar acrifolia Maximowicz in Bull. Acad. Sci. St. Petersb. X (1866), 466.

Liquidambar sp. Hemsley in Journ. Bot. XIV (1876), 207.

Liquidambar Maximowiczii Miquel in Ann. Mus. Lugd.-Bat. III (1877), 200.- Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII (1884-1885), 167.

Liquidambar formosana var. Hemsley in Journ. Linn. Soc. XXIII (1887), 291.

Deciduous tree usually 20 metres, rarely up to 40 metres, high; 1 metre in diameter, trunk straight, crown broadly ovate; bark grey and smooth while young, then changing to brown and rough when matured; branchlets terete, grey, glabrous, with conspicuous, ovate lenticels, winter-buds terminal or axillary, ovoid or conical-ovoid, 6-8 mm. long, 3-5 mm. in diameter, scales ovate, imbricate, brown or dark brown, yellowish-pubescent outside and ciliate on the margin. Leaves alternate, mostly from the current-year branchlets, coriaceous, usually 3-lobed, 9-10 cm. long, 10-12 cm. broad, cordate or truncate at base, lobes triangular-ovate, acuminate on the apex, serrate on the margin with appressed acute teeth, upper surface deep green, sparsely pubescent while young and then changing to glabrescent, lower surface pale green, densely pubescent while young and glabrescent when old except which remain pubescent on the veins, the colour of the whole leaf changing to red or deep brown in the autumn, main veins conspicuous above, prominent below, secondary veins reticulate; petioles cylindrical, slender, 5-8 cm. long, sparsely pubescent while young and then changing to glabrous; stipules caducous, linear, 15 mm. long, pilose above, glabrous below. Flowers unisexual, monoecious, apetalous, staminate flowers in a yellow-pubescent raceme 3-4 cm. long, terminal on short current year branchlets, stamens numerous, 2 mm. long, anthers purple, subglobose, 2-celled, filaments slender, glabrous, pedicels slender, 3 mm. long; pistillate flowers in globose heads from the axil of leaf on the current-year branchlets, ovary subinferior, 2-celled, styles 2, usually 10-12 mm. long, pubescent, stigmas subglobose, incurved, with rudimentary stamens and pubescent, subulate bracts, 6-8 mm. long, peduncles 5 cm. long, pubescent. Fruit pendulous, globose, consisting of capsules, 3 cm. in diameter, with pubescent sharp spines, developed from the pubescent styles, and subulate bracts, seeds 1-2, flat and winged.

MOUNT OMEI: near Omej-hsien, *T. H. Tu* No. 877, in 1935; Yuan-tung-ssu, alt. 470 m., at roadside, tree 20 metres high, young fruits aggregated capsules, *W. P. Fang*, No. 14029, April 6, 1940; Wan-kan, alt. 480 m., tree 20 metres high, flowers brownish, *C. L. Chow*, No. 5544, March 16, 1942; Fu-hu-ssu, alt. 500 m., in forests, tree 30 metres high, fruits with spiny appendages, *W. P. Fang*, No. 15486, November 20, 1940.

CHEKIANG: Sui-chang-hsien, *K. Ling*, No. 2348, August 14, 1929.

KIANGSU: near Nanking, *S. Chen*, No. 4458, May 20, 1935.

Distribution: Honan, Chekiang, Anhwei, Kiangsi, Hupeh, Hunan, Szechuan, Kweichow, Formosa and Kwangtung.

This species is fairly common at the base of Mount Omei and attracts the attention of visitors because of its beautiful red leaves in the autumn.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a staminate flower (enlarged 5 times); 4, a pistillate flower (enlarged 10 times); 5, a longitudinal section of the ovary (enlarged 5 times); 6, a capsule (enlarged 4 times); 7, a seed (enlarged 5 times).

圖版一百零四

楓 樹

金縷梅科

落葉喬木高常二十公尺，稀達四十公尺，直徑一公尺，幹直，樹冠闊卵圓形，樹皮嫩時灰色而光滑，老則變為褐色而粗糙；小枝圓形，灰色，無毛，具顯明之卵形皮孔；冬芽頂生或腋生，卵圓形或圓錐狀卵圓形，長六至八公厘，直徑三至五公厘，芽鱗卵形，覆瓦狀排列，褐色或深褐色，外被黃色絨毛，邊緣具纖毛。葉互生，常由當年之小枝發出，革質，常具三裂片，長九至十公分，闊十至十二公分，基部心臟形或截形，裂片為三角狀卵形，先端漸尖，邊緣具密接之尖鋸齒，表面深綠色，幼時有稀疏之絨毛，後漸變為無毛，背面淡綠色，幼時有濃厚之絨毛，老時則近於光滑無毛，間有仍存留絨毛者，全葉在秋天變為紅色或深褐色，主脈在葉表面顯明，在葉背面突出，細脈成網狀；葉柄圓柱形而纖細，長五至八公分，幼時被稀疏之絨毛，老時則無；托葉早落，線形，長十五公厘，表面有毛，背面無毛。花單性，大小蕊花同株，無花瓣，小蕊花生於長三至四公分且被有黃色絨毛之總狀花序，頂生於本年生之短小枝上，小蕊多數，長二公厘，花藥紫色，亞圓形，二室，花絲細小，無毛，小花梗纖細，長三公厘；大蕊花成球形之頭狀花序，由本年生小枝之葉腋間生出，子房稍下位，二室，花柱二枚，常長十至十二公厘，具絨毛，柱頭略呈球形，向內曲，有不發育之小蕊，及長六至八公厘具絨之鑿形苞片，花徑長五公分，具絨毛。果實為下垂之球形蒴果，直徑三公厘，具有被絨毛之尖刺，由被絨毛之花柱及鑿形苞片發育而成，種子一至二枚，形平扁且具翅。

本種產於峨眉山麓伏虎寺，圓通寺等四五百公尺之林中或路旁。因其在秋天有美麗之紅葉，故常引起遊人之注意。

本種分佈於河南，浙江，江蘇，安徽，江西，湖北，四川，西康，湖南，貴州，台灣及廣東等省。

圖解：1. 花枝（原大）； 2. 果枝（原大）； 3. 小蕊花（放大五倍）； 4. 大蕊花（放大十倍）； 5. 子房縱剖面（放大五倍）； 6. 蒴果（放大四倍）； 7. 種子（放大五倍）。



104. *Liquidambar formosa* Hance

LOROPETALUM CHINENSE (R. Brown) Oliver.

Hamamelidaceae.

Loropetalum chinense (R. Brown) Oliver in *Trans. Linn. Soc. XXIII* (1862), 458, fig. 4. - Moore in *Journ. Bot. XVI* (1878), 138. - Hance *Journ. Bot. XVI* (1878), 226. - Maximowicz in *Bull. Soc. Nat. Mosc. LIV*, pt. 1 (1879), 22. - Hemsley in *Journ. Linn. Soc. XXIII* (1887), 290; in *Bot. Mag. CXXX* (1904), t. 7979. - Diels in *Engler, Bot. Jahrb. XXIX* (1900) 381. - Dunn et Tutchet in *Kew Bull. Misc. Inform. Add. ser. X* (1912), 101 (Fl. Kwangtung & Hongkong). - Rehder et Wilson in *Sargent, Fl. Wilson. I* (1913), 430. - Handel-Mazzetti, *Symb. Sin. VII, Lieferung 2* (1931), 240.

Hamamelis chinensis R. Brown in *Abel, Narr. Journ. China*, (1818), 375, fig.

Evergreen shrub 1 to 2 metres high, bark dark brown, smooth; branchlets slender, terete, those of the current year densely yellow-pubescent with stellate hairs, those more than one year old purplish or dark brown, slightly pubescent; buds not seen. Leaves alternate, coriaceous, ovate or obovate, 2-2.8 cm. long, 1.5-2 cm. broad, subrotund and subequal at the base, acute at the apex, entire on the margin, upper surface deep green and sparsely pubescent or glabrescent, lower surface yellowish green and sparsely pubescent with stellate hairs, midrib and 4 pairs of primary veins conspicuous above, prominent below; petioles terete, 5 mm. long, densely yellow-pubescent; stipules membranous, caducous. Flowers 4 to 8 in a globose head terminal on branchlets, calyx-tube densely stellate pubescent, adnate to the half-inferior ovary, 4-lobed at its upper part, petals 4, linear-lanceolate, 1.5-2 cm. long, 2 mm. broad, yellowish-white, stamens 4, adnate to the lower part of ovary, filaments short, anthers 4-celled, connectives prolonged and curved, ovary with 4 small scales, 2-celled, styles 2, distinct and spreading, ovules 1 in each cell, pendulous. Fruit an ovoid capsule, densely yellowish stellate pubescent, 7 mm. in diameter, inner husk hard, bony, seeds subrotund, flat.

MOUNT OMEI: near Fu-hu-ssu, under forests, shrub $\frac{1}{2}$ metre high, flowers white, *W. P. Fang*, without number, April 1940.

CHEKIANG: Tien-mu-shan, *T. N. Liou*, No. 21, in 1930.

SZECHUAN: Nauchuan-hsien, shrub with yellow flowers, *H. F. Chang*, No. #7, April 12, 1930, same locality, *H. C. Yang*, No. 3013, April 1939.

KWANGSI: without precise locality, *C. Wang*, No. 39610; without precise locality, *Z. S. Chung*, No. 81761.

This species is commonly found growing at the side of or under the pine forests at the foot of Mount Omei. *W. P. Fang*.

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

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a flower (enlarged 4 times); 4, a flower dissected to show the ovary and scales (enlarged 6 times); 5, a stamen (enlarged 2 times); 6, a capsule (enlarged 4 times); 7, a seed (enlarged 2 times); 8, a portion of young leaf to show the stellate hairs at the upper surface (enlarged 5 times); 9, a portion of leaf to show the stellate hairs at the lower surface (enlarged 5 times).

圖版一百零五

檜木

金縷梅科

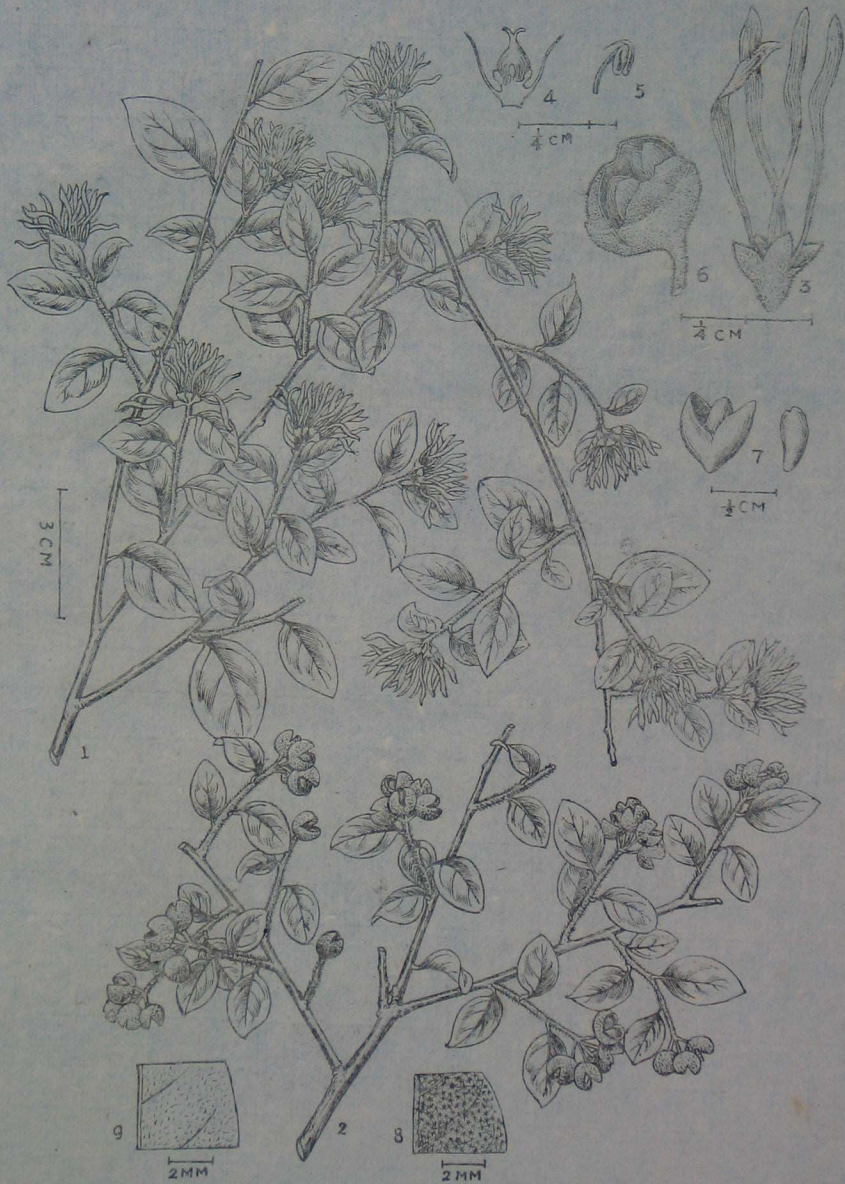
常綠灌木，高一至二公尺，樹皮灰褐色而光滑；小枝纖細，圓形，本年生之嫩枝具星芒狀之黃色絨毛，多年生之枝淡紫色或暗褐色，微被毛；芽尚未見。葉互生，革質，卵形或倒卵形，長二至二公分八公厘，寬一分半至二公分，基部亞圓形，先端尖銳，全緣，表面深綠色，被稀疏之絨毛或稍光滑，背面黃綠色，被稀疏之星形絨毛，中脈及四對側脈在葉表面顯明，在葉背而突出；葉柄圓形，長五公厘，被濃密之黃色絨毛；托葉膜質，早落。花四至八枚成球形之頭狀花序，頂生於小枝上，萼管被濃密之星芒狀絨毛，附着於半下位之子房上，上部四裂，花瓣四枚，繖狀披針形，長一分半至二公分，寬二公厘，黃白色，小蕊四本，着生於子房下部，花絲短，花藥四室，藥隔伸長而彎曲，子房有四小鱗片，二室，花柱二，向外伸展，每室一胚珠，下垂。果為一期圓形之蒴果，被濃密之黃色星狀絨毛，直徑七公厘，內壳堅硬，骨質，種子亞圓形而扁平。

本種生於峨眉山麓伏虎寺附近五百公尺左右之松林下或松林邊。

分佈於，山東，浙江，江蘇，江西，湖北，四川，湖南，貴州，雲南，福建，廣東，廣西等省。

圖解： 1. 花枝（原大）； 2. 果枝（原大）； 3. 花（放大四倍）； 4. 花之解剖示其子房及鱗片（放大六倍）； 5. 小蕊（放大二倍）； 6. 蒴果（放大四倍）； 7. 種子（放大二倍）； 8. 幼葉之一部示其表面之星狀毛（放大五倍）； 9. 幼葉之一部示其背面之星狀毛（放大五倍）。

峨眉植物圖志



105. *Loropetalum chinensis* (R. Brown) Oliver

Plate 106.

CORYLOPSIS WILLMOTTIAE Rehder et Wilson.

Hamamelidaceae.

Corylopsis Willmottiae Rehder et Wilson in Sargent, Pl. Wilson. I (1913), 425.- Rehder, Manual Cult. Trees & Shrubs, (1927), 321.- Bean, Trees & Shrubs Hard. Brit. Isl. I (1929), 399 (5th edit.).

Deciduous shrub 2 to 3, rarely up to 5, metres high; bark grey or brownish-grey, rarely dark grey; branchlets slender, glabrous, with conspicuous lenticels, rarely stalked-glandular, those of the current year purplish-yellow, those of more than one year old brownish-grey or dark brown. Winter-buds axillary, conical-elongated, shortly stalked, 6-8 mm. long, with purplish-yellow bracts, glabrous outside, white-pubescent inside. Leaves deciduous, coriaceous, alternate, oval or obovate rarely ovate, 5-10 cm. long, 4-6 cm. broad, shortly acuminate to the apex, subcordate or truncate at base, sinuate-dentate on the margin with mucronate teeth, upper surface shiny deep green, glabrous, lower surface pale green or glaucescent, densely sericeous-pilose when young, glabrous or only slightly pubescent along the veins when matured, primary veins 7-10, parallel, inconspicuous above, elevated below; petioles 1-1.5 cm. long, slender, terete, glabrous, rarely stipitate-glandular; stipules oblong, ovate-oblong rarely obovate or obovate-oblong, (usually lower ones obovate and upper ones ovate-oblong), acute, 1-1.5 cm. long, membranaceous, yellow or yellowish-purple, glabrous outside, white sericeous-pilose inside. Flowers soft yellow or greenish-yellow, fragrant, in a terminal villous raceme 3-5 cm. long, on a slender peduncle 1-1.5 cm. long; bracts ovate, purplish-yellow, glabrous outside, white sericeous inside; calyx tubular, glabrous, with 5 sepals triangular-ovate or ovate, 2-3 mm. long; nectaries bifid; petals 5, obovate or suborbicular, 4 mm. long, 3 mm. broad, with a short claw; stamens 5, as long as the petals or slightly longer; ovary glabrous, half-inferior, styles 2, slender, glabrous, slightly curved, stigma subglobose. Fruit a capsule, 8 mm. in diameter, half-inferior, glabrous, brown or yellowish-brown; seeds shiny black, ovoid, about 4 mm. long, obtuse.

MOUNT OMEI: Hei-lung-kiang, alt. 950 m., at side of shady moist ravines, shrub 3 metres high, *S. S. Chien*, No. 5537, May 7, 1936; Chia-tzu-wan, shrub 2 metres high, flowers greenish-yellow, *W. P. Fang*, No. 18529, April 28, 1942; Niu-hsin-ssu, alt. 980 m., shrub 2 metres high, flowers greenish-yellow, *W. P. Fang*, No. 18596, April 18, 1942; Hou-tzu-po, alt. 1100 m., in thickets, shrub 4 metres high, flowers yellow, *C. L. Sun*, No. 1751, April 25, 1940; same locality, shrub 1 metre high, leaves chartaceous, stipules oblong-ovate, *W. P. Fang*, No. 14339, April 28, 1941; Chiu-shih-chiu-tao-kwei, in ravines, shrub 3 metres high, leaves chartaceous, flowers yellowish-green, *C. L. Sun*, No. 168, May 11, 1939; same locality, in ravines, shrub 3 metres high, *W. P. Fang*, No. 14682, May 19, 1940; Chiu-lao-tung, alt. 1800 m., in woods, shrub 4 metres high, flowers yellow, *C. L. Sun*, No. 1814, May 1, 1940; same locality, small tree 10 metres high, branchlets and rachis stalked glandular, *W. P. Fang*, No. 17122, June 30, 1941; Chang-show-chiao, *W. P. Fang*, No. 16563, May 10, 1941; same locality, *W. P. Fang*, No. 18414, April 21, 1942; near and below Yu-hsien-ssu, alt. 1771 m., in thickets, shrub 3 metres high, bark brown, flowers yellow, *C. L. Sun*, No. 1583, April 18, 1940; same locality, in forests, shrub 3 metres high, flowers yellowish, rare, *W. P. Fang*, No. 16010, April 1, 1941; south-west of Mount Omei, Oplen-hsien, Yen-king-chi, *W. C. Cheng*, No. 6266, May 1936; same locality, *T. S. Chiao*, No. 34, April 1936; without precise locality, *T. H. Tu*, No. 171, in 1939.

SIKANG: Tien-chuan-hsien, alt. 2400 m., shrub 3 metres high, *K. L. Chu*, Nos. 2303, 2351, 2390, 2467 & 2617, April to May 1936; same locality, *F. C. Tai* & *C. M. Teng*, No. 5105, August 25, 1939; Pao-hsing-hsien, alt. 2400 m., shrub 4 metres high, *K. L. Chu*, No. 2987, June 26, 1936.

Distribution: Szechuan, Sikang.

This species is near *Corylopsis platypetala* Rehder et Wilson, but it differs easily in having two-parted nectaries. The latter species was found in Western Hupeh but we have not found in Szechuan.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a flower (enlarged 5 times); 4, a bract (enlarged 5 times); 5, a flower dissected to show the nectaries, stamens and pistil (enlarged 5 times); 6, a stamen and nectary (enlarged 5 times); 7, a fruit showing the seeds (enlarged 4 times).

圖版一百零六
魏氏蠟瓣花
金縷梅科

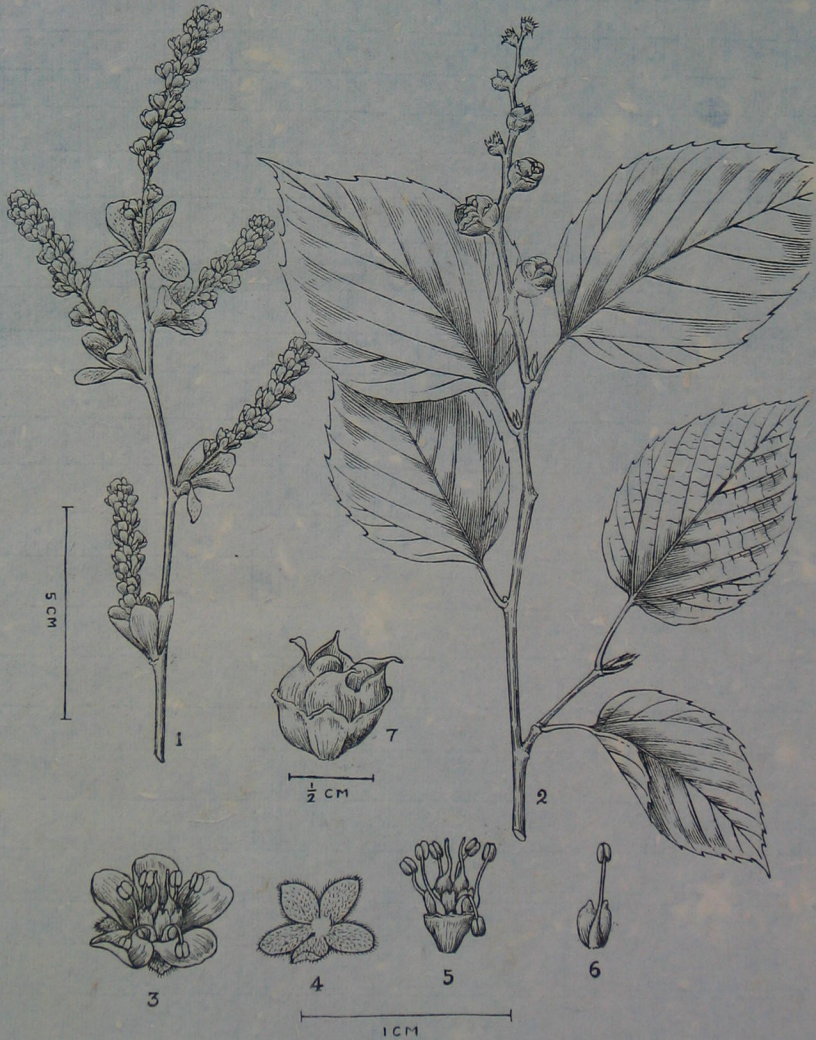
落葉灌木高二至三公尺，稀至五公尺；樹皮灰色或灰褐色，稀為深灰色；小枝細而無毛，具顯著之皮孔，稀具有柄之腺毛，當年之枝紫黃色，多年之枝灰褐色或深褐色。冬芽腋生，長圓錐形，有短柄，長五至八公厘，具紫黃色之苞片，表面無毛，裏面被白色細毛。葉革質，互生，寬橢圓形或倒卵形，稀為卵形，長五至十公分，寬四至六公分，先端短尖，基部稍呈心臟形或截形，邊緣深波狀具凸形之鋸齒，葉表面為光亮之深綠色，無毛，葉背面為灰綠色或具灰色粉末，幼時被濃厚而細絨狀之柔毛，成熟後無毛或僅沿葉脈處微有毛，側脈七至十對，平行，表面不顯，背面則凸起；葉柄細，長一至一公分半，全圓，無毛，稀具有柄腺毛；托葉長圓形，卵狀長圓形，稀倒卵形或倒卵狀長圓形，（下部者常為倒卵形，上部者為卵狀長圓形），銳尖，長一至一公分半，膜質，黃色或黃紫色，外面無毛，內面有白色細軟之柔毛。花黃色或綠黃色，有芬香，生於長三至五公分頂生被柔毛之總狀花序上，而有長一至一公分五公厘之細梗；苞片卵形，紫黃色，外面無毛，內面有白色絨毛；花萼管狀無毛，具五萼片，萼片三角狀卵形或卵形，長二至三公厘；蜜腺二裂；花瓣五枚，倒卵形或稍呈扁圓形，長四公厘，寬三公厘，有短爪；小蕊五本，與花瓣等長或稍長；子房無毛，半下位，花柱二，細而無毛，微曲，柱頭稍呈球形。果為蒴果，直徑八公厘，半下位，無毛，褐色或黃褐色；種子亮黑色，卵圓形，長約四公厘，狹形。

此種產於峨眉山黑江關，牛心寺，獐子坡，九十九倒拐，九老洞，長壽橋等處九百五十公尺至一千八百公尺之陰濕山谷或叢林中。西康之天全，寶興等縣亦有之。四五月開花，八九月果可成熟。

此種與寬瓣蠟瓣花相近，所不同者，乃其有裂為二部之蜜腺。後者產於鄂西，四川尚未發見。

- 圖解： 1. 花枝（原大）； 2. 果枝（原大）； 3. 花（放大五倍）； 4. 苞片（放大五倍）；
5. 花之解剖示其蜜腺與小蕊（放大五倍）； 6. 小蕊與蜜腺（放大五倍）； 7. 蒴果裂開示其種子（放大四倍）

峨眉植物圖志



106. *Corylopsis Willmoreana* Rehder et Wilson

Plate 107.

MELIA AZEDARACH Linnaeus.

Meliaceae.

Melia azedarach Linnaeus, Spec. I (1753), 384.- Thunberg, Fl. Jap. (1734), 180.- Loureiro, Fl. Coch. I (1790), 269.- Sims in Bot. Mag. XXXVII (1808), t. 1066.- Hiern in Hooker f., Fl. Brit. Ind. I (1875), 544.- Debeaux in Act. Soc. Linn. Bordeaux, XXX (1875), 74 (Fl. Shatgh. 22).- Franchet in Nouv. Arch. Mus. Paris, ser. 2, V (1883), 220 (Pl. David, I. 68).- Hemsley in Journ. Linn. Soc. XXIII (1886), 118.- Diels in Engler Bot. Jahrb. XXIX (1900), 426.- Pampanini in Nuov. Giorn. Bot. Ital. n. ser. XVII (1911), 128.- Dunn & Tutchet in Kew Bull. Misc. Inform. ad. ser. X (1912), 88 (Fl. Kwangtung & Hongkong).- Rehder & Wilson in Sargent, Pl. Wilson. II (1914), 157.- Chun, Chin. Econ. Trees (1921), 203.- Rehder, Manual Cult. Trees & Shrubs (1929), 828.- Handel-Mazzetti, Symb. Sin. VII, Lieferung 3 (1933), 632.

Melia azedarach, B. *sempervirens* Linnaeus, Spec. I (1753), 385.

Melia sempervirens Swartz, Nov. Gen. Sp. Prodr. (1788), 67.- Ker in Bot. Reg. VIII (1822), 643.

Melia florida Salisbury, Prodr. (1796), 317.

Melia sambucina Blume, Bijdr. (1825), 162.

Melia australis Sweet, Hort. Brit. ed. 2 (1830), 85.

Melia japonica G. Don, Gen. Syst. I (1831), 680.- Maximowicz in Act. Hort. Petrop. XI (1890), 96.- Shirasawa, Icon. Ess. For. Jap. II. (1908), t. 35, fig. 14-26.

Melia hukayun Royle, Ill. Bot. Himal. (1839), 144.

Melia Commelinii Medicus ex Stendel, Nomencl. Bot. II (1841), 118 (quasi synonym.)

Melia cochinchinensis Roemer, Fam. Nat. Syn. (1846), 95.

Melia orientalis Roemer, Fam. Nat. Syn. (1846), 95.

Melia Townsendii Siebold & Zuccarini in Abh. Akad. Munich. IV. pt. III (1846), 159 (Fl. Jap. Fam. Nat. II. 61).

Melia composita Benthham (non De Candolle), Fl. Austral. I (1863), 360.

Melia chinensis Siebold ex Miquel in Ann. Mus. Lugd.-Bat. III (1867), 23 (quasi synonym.); Prol. Fl. Jap. (1867), 211.

Melia azedarach, var. *subtripinnata* Miquel in Ann. Mus. Lugd.-Bat. III (1867), 24; Prol. Fl. Jap. (1867), 212.

Azedarach sempervirens Kuntze, Rev. Gen. I (1891), 109.

Melia japonica, var. *sempervirens* Makino in Tokyo Bot. Mag. XVIII (1904), 67.

Deciduous tree 10-18, rarely up to 20 metres high; bark brownish or brownish-grey, with conspicuous lenticels, smooth or slightly fissured when old; branchlets stout, terete; those of the current year green, sparsely pubescent, those more than one year old grey or brownish-grey, glabrescent, with numerous ovate lenticels. Winter-buds axillary, ovoid, sparsely pubescent. Leaves bipinnate or pinnate, 30-40 cm. long, crowded near the apex of branchlets, leaflets 5-7, acuminate on the apex, broadly cuneate or cuneate at base, remotely and irregularly serrate on the margin, sessile or shortly petioled; petioles terete, 8-12 cm. long, dilated at base. Flowers in puberulent panicles 9 cm. long, 7 cm. in diameter; calyx deeply lobed into 5 sepals, lanceolate-oblong, pubescent; petals 5, purplish, oblanceolate, 1 cm. long, 3 mm. broad, puberulent; stamens 10-12, with purple monadelphous filaments, 8 mm. long, dilated at apex and base, anthers yellow, inserted on and nearly equaling the lanceolate teeth of the staminal tube; ovary superior, glabrous, style glabrous, as long as or slightly shorter than the staminal tube, stigma capitate, ovary 5, rarely 3-8-celled, 2-ovuled in each cell. Fruit a globose yellow drupe, 1.5-2 cm. in diameter, stone 5-celled, seeds solitary in each cell.

MOUNT OMEI: Pao-ning-ssu, *W. P. Fang*, without number, April 1945.

SZECHUAN: Chengtu, S. S. Chien, Nos. 5281 & 5922, April 1936; Wang-kiang-lau, *W. P. Fang*, No. 19296, May 26, 1933; Sha-ho-po, *W. P. Fang*, No. 13601, May 1939.

Distribution: Shantung, Shensi, Chekiang, Kiangsu, Kiangsi, Hupeh, Hunan, Szechuan, Yunnan, Kwangtung, Formosa; Corea, Japan, India.

This beautiful tree has been found occasionally at the base of Mount Omei. It is colloquially named as 'Lien-shu'.

Fig. 1, a flowering branch (natural size); 2, a flower (enlarged 2 times); 3, a flower dissected to show the staminal tube and pistil (enlarged 5 times); 4, a cross section of ovary to show the cells (enlarged 5 times); 5, fruits (enlarged 5 times); 6, seed (enlarged 5 times).

圖版一百零七

楝 樹

楝 科

落葉喬木高十至十五公尺，稀達二十公尺；樹皮淡褐色或淡灰褐色，有顯著之皮孔，光滑或老時稍呈片狀剝裂，小枝粗壯，圓形，當年生枝綠色，被稀疏之細毛，多年生枝灰色或淡灰褐色，近於無毛，具卵形皮孔。冬芽腋生，卵圓形，被稀疏之絨毛。葉為二回羽狀複葉或羽狀複葉，長三十至四十公分，簇生於小枝近頂部處，小葉五至七枚，先端漸尖，基部寬楔形或楔形，邊緣有不規則之稀疏鋸齒，無小葉柄或有短小葉柄；葉柄圓形，長八至十二分，基部膨大。花生於長九公分直徑七公分而具細毛之圓錐花序上，花萼深裂為五裂片，萼片披針狀長圓形，有毛，花瓣五枚，淡紫色，倒披針形，長一公分，寬三公厘，被細毛；小蕊十至十二本，有紫色之合生花絲，長八公厘，頂部及基部皆膨大，花藥黃色，伸出管外且幾等於管狀小蕊之披針狀鬚齒；子房上位，無毛，花柱無毛，與管狀小蕊等長或稍短，柱頭頭狀，子房五室，稀有三至六室，每室二胚珠。果為球形之黃色核果，直徑一公分五至二公分，核分五室，每室有一種子。

此種產於峨眉山之保寧寺。四五月開花，九月間果可成熟。

此種分佈於山東，陝西，浙江，江西，湖北，湖南，四川，雲南，廣東，台灣，朝鮮，日本，印度等處。

圖解：1. 花枝（原大）； 2. 花（放大二倍）； 3. 花之解剖以示小蕊管與大蕊（放大五倍）； 4. 子房之橫切面以示其子房室（放大五倍）； 5. 核果（原大）； 6. 種子（放大五倍）。



107. *Melia azedarach* Linnæus

八乘書 附圖

Plate 108.

RHODODENDRON NITIDULUM Rehder et Wilson.

Ericaceae.

Rhododendron nitidulum Rehder et Wilson in Sargent, Pl. Wilson. I (1913), 509.

Small shrub $\frac{1}{2}$ metre high; bark grey or dark grey, peeling off in thin flakes; branchlets intricate, terete, those of one year old brown or purplish-brown, densely yellow-scaly, those more than one year old dark brown, rough with persistent scales. Winter-buds ovoid, scales imbricate, ovate or subrotund, scaly at the middle of outer surface, ciliate on the margin, leaf-bud-scales deciduous. Leaves coriaceous, persistent, elliptic or broadly elliptic, 6-9 mm. long, 3-5 mm. broad, acute or broadly acute, mucronulate on the apex, broadly cuneate or cuneate at the base, upper surface green, covered with dense yellow scales, lower surface yellow, covered with overlapping scales, midrib obsolete and primary veins obscure on both surfaces; petioles 2-3 mm. long, scaly. Inflorescence terminal, 1- or 2-flowered, flowers-bud-scales subsistent, flower-stalks 2-3 mm. long, scaly, flowers purple, calyx well developed, chartaceous, 2 mm. long, sepals triangular or acute, densely scaly outside, corolla funnel-shaped, 1-1.2 cm. long, 2 cm. in diameter, glabrous outside, corolla-tube 5 mm. long, puberulous inside toward the base, lobes ovate or obovate, 5-7 mm. long, stamens 10, exserted, filaments slender, 8-10 mm. long, villous in the lower part, anthers purple, oblong, ovary conical, 2 mm. long, densely scaly, style longer than the stamens, glabrous, stigma capitate. Fruits oblong-ellipsoid capsules, 5 mm. long, 3 mm. in diameter.

MOUNT OMEI: Chin-ting, alt. 3135 m., small shrub $\frac{1}{2}$ metre high, leaves oval, densely scaly on both surfaces, flowers purple, 2 cm. in diameter, always 2 flowers terminal on an inflorescence, style glabrous, stamens 8, glabrous, except puberulous toward the base, corolla not scaly outside. *W. P. Fang*, No. 14622, June 27, 1940; same locality, shrub $\frac{1}{2}$ metres high, fruits light green, common, *T. C. Lee*, No. 3476, September 10, 1940; without precise locality, *C. W. Yao*, Nos. 3048, 4184 & 4689, in 1939; without precise locality, *H. C. Chow*, No. 667, in 1937.

This species was discovered by the late Dr. E. H. Wilson in Pao-hsing-hsien (formerly known as Mupin) of Eastern Sikang. It is very limited in distribution, through the recent explorations we have found it growing commonly at the upper slope of Mount Omei near Chin-ting. It differs from *Rhododendron polycladum* Franchet of Yuannan in the mucronulate leaves with yellow scales on the lower surface. From the type-specimen of *Rhododendron nitidulum* Rehder et Wilson the Omei plants differ in scaly pedicels of the flowers,.....*W. P. Fang*.

Fig. 1, a flowering and leafy branch (natural size); 2, a flower (enlarged 2 times); 3, a stamen (enlarged 2 times); 4, a pistil (enlarged 2 times); 5, a corolla dissected to show the pubescence inside near the base (enlarged 2 times); 6, a fruit (enlarged 2 times); 7, upper surface of leaf (enlarged 5 times); 8, lower surface of leaf (enlarged 5 times).

圖版一百零八 亮鱗杜鵑

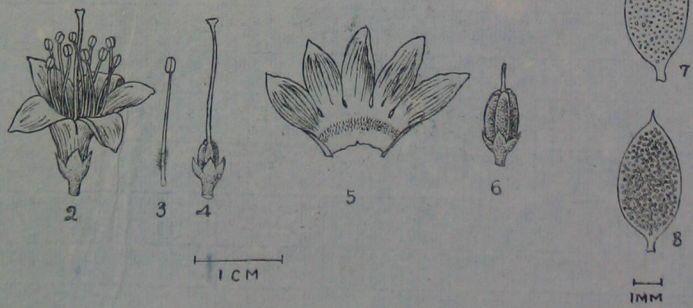
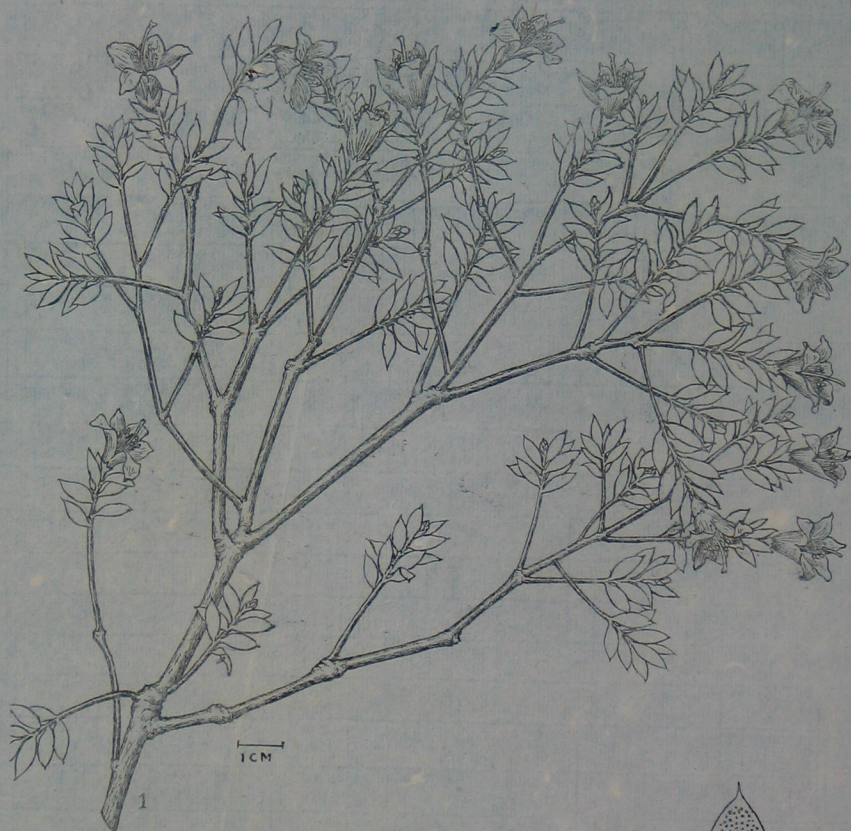
石南科

小灌木高二分之一公尺；樹皮灰色或深灰色，成薄片脫落；小枝錯綜排列，圓形，一年生枝褐色或紫褐色，密被黃色鱗斑，多年生枝深褐色，粗糙而具宿存之鱗斑。冬芽卵圓形，鱗片覆瓦狀排列，卵形或亞圓形，外面之中部具鱗斑，邊緣具纖毛，葉芽之鱗片早落。葉革質，宿存，橢圓或廣橢圓形，長六至九公分，寬三至五公分，先端銳尖或寬銳尖，短而直，基部廣楔形或楔形，葉表面綠色，密被黃色鱗斑，背面黃色，被以覆瓦狀之鱗斑，中脈不顯，側脈在葉之兩面皆不顯明；葉柄長二至三公厘，具鱗斑。花序頂生，具一或二花，花芽鱗片存在時稍久，花梗長二至三公厘，具鱗斑。花紫色，花萼之發育良好，紙質，長二公分，萼片三角形或銳尖，外面密被鱗斑，花冠漏斗形，長一公分至一公分二，直徑二公分，外面無毛，花冠之管長五公分，花管內面之基部被毛，裂片卵形或倒卵形，長五至七公分，小蕊十本，伸出管外，花絲纖細，長八至十公分，下部有絨毛，花藥紫色，長圓形，子房圓錐形，長二公分，密被鱗斑，花柱較小蕊尤長，無毛，柱頭頭狀。果為長橢圓形之蒴果，長五公分，寬三公厘。

此種產於峨眉山金頂，海拔三千一百三十五公尺處。

此種係威爾遜博士發現於西康東部寶興縣。其分佈區域甚窄，由最近之調查，已知此種遍生於金頂附近之草坡，其不同於滇產之 *Rh. polycladum* 者，在其具短尖錐之葉，背面有黃色之鱗斑。峨山產者花梗具有鱗片，與模式標本稍異。花六月間開放，異常美觀。果實九月始能成熟。

圖解： 1. 花與葉枝（原大）； 2. 花（放大二倍）； 3. 小蕊（放大二倍）； 4. 大蕊（放大二倍）； 5. 花冠之解剖以示其內面近基部之絨毛（放大二倍）； 6. 果（放大二倍）； 7. 葉之表面（放大五倍）； 8. 葉之背面（放大五倍）。



108. *Rhododendron nitidulum* Rehder et Wilson

Plate 109.

FAGUS LONGIPETIOLATA Seemen.

Fagaceae.

Fagus longipetiolata, Seemen in Engler, Bot. Jahrb. XXIII, Beibl. No. 57 (1897), 56.— Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 193.— Rehder, Manual Cult. Trees & Shrubs (1927), 188.— Handel-Mazzetti, Symbolae Sinicae, VII, Lieferung 1 (1927), 27.

Fagus sylvatica, var. *longipes*, Oliver in Hooker Icon. Pl. XX (1890), t. 1936, in text.— Franchet in Journ. de Bot. (1899), 201.— Skan in Journ. Linn. Soc. XXVI (1899), 525, pro parte, exclud. specim. Henry Nos. 6793 & 6797.

Fagus sinensis, Oliver in Hooker Icon. Pl. (1890), 1936, (in tabula tantum).— Diels in Engler, Bot. Jahrb. XXIX (1900), 294, fig. j-k.— Koidzumi in Tokyo Bot. Mag. XIX (1916), 95.

Fagus longipes, Leveille, Fl. Kouy-tcheou (1914), 126.

Deciduous tree, usually 10 metres, rarely up to 25 metres, high, 25-50 cm. in diameter, trunk straight; bark grey, or dark grey, smooth; branchlets slender, terete, glabrous, dark brown or purplish brown, with numerous conspicuous ovate lenticels, and with scars of deciduous bud-scales at the end of each year's growth; winter-buds conical or elongated conical, 5-14 mm. long, scales brown, numerous, obtuse or acute, imbricate, glabrous. Leaves alternate, two-ranked, subcoriaceous, ovate or ovate-oblong, 6-12 cm. long, 3-6 cm. broad, acute or shortly acuminate on the apex, broadly cuneate or subrotund at the base, remotely serrate on the margin or with the lower part of the margin, entire, upper surface shining green, glabrous, lower surface glaucescent and densely grey-pubescent, but less so when matured, midrib and 9-11 pairs of primary veins just showing above, prominent below, ending in the teeth; petioles slender, 1-2 cm. long, glabrescent. Flowers unisexual monoecious, staminate flowers in heads, on a slender peduncle, 5-10 cm. long, in axils of leaves of young branchlets, pedicels 4 mm. long, perianth 6-lobed, lobes lanceolate, 3-5 mm. long, sericeous-pubescent, stamens 11-12, rarely fewer or more, twice as long as the perianth, filaments slender, glabrous, anthers oblong, yellow, 2-celled, rudimentary ovary absent; pistillate flowers usually 2, surrounded by numerous pubescent subulate bracts united below into a 4-parted subovoid involucre, on a peduncle 3-6 cm. long, perianth 6-lobed, pubescent, ovary inferior, styles 3, slender, recurved, 4-uberrulous. Fruit a yellowish-puberulus triangular-ovoid nut, usually 2 in a pubescent, woody, pvalved ovoid involucre 2-2.5 cm. long, 1.5 cm. in diameter, covered outside with pubescent bristles, on a peduncle 4-6 cm. long.

WEST OF MOUNT OMEI: Opien-hsien, *W. C. Cheng*, Nos. 6398 & 6404, in 1936; same locality, *S. N. Hsu*, No. 73, in 1937; without precise locality, *C. W. Yao*, No. 3614, in 1939.

SIKANG: Tien-chuan-hsien, Wan-ning-shan, tree 6 metres high, fruits green, *F. C. Tai* & *C. M. Teng*, No. 4244, July 22, 1939.

KWANGSI: without precise locality. *C. W. Wang*, No. 40543, without date.

Distribution: Shenii, Cheklang, Anhwei, Hupeh, Szechuan, Hunan, Kwelchow, Yunnan, Kwangtung, Kwangsi.

This species is easily distinguished from its near ally, *Fagus Engleriana* Seemen, by the pubescent lower surface of its leaves, by the longer petioles which are 1 to 2 cm. in length, and by the subulate appendages covering the outer surface of the involucre. It is very rare in the vicinity of Mount Omei although its wide distribution has been reported in western China as well as eastwards and southwards to the sea-shore. We have found *Fagus Engleriana* Seemen near Hsi-hsiang-chih but it is very rare at this mountain. W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a pistillate flowering inflorescence (enlarged 2 times); 4, a pistillate flower (enlarged 3 times); 5, a staminate flower (enlarged 3 times); 6, a nut (enlarged 2 times); 7 & 8, portions of leaf enlarged to show the pubescence.

圖版一百零九

長柄山毛櫸

別名：水青剛

殼斗科

落葉喬木高十公尺，稀達二十五公尺；直徑二十五至五十公分，幹直；樹皮灰色或深灰色，光滑；小枝細圓無毛，深褐色或紫褐色，具顯明之卵形皮孔，且枝在每年生長部分之末端有芽鱗脫落後所留之痕跡；冬芽圓錐形或長圓錐形，長五至十四公厘，鱗片褐色，多數，鈍形或銳尖，覆瓦狀排列，無毛。葉互生，成二列，近於革質，卵形或卵狀長圓形，長六至十二公分，寬三至六公分，先端銳尖或短尖，基部廣楔形或亞圓形，邊緣具稀疎之鋸齒，或近於葉基部全緣，葉之表面亮綠色而無毛，背面暗灰色並具濃密之灰色絨毛，成熟時則漸少，中脈及九至十一對之側脈則在表面顯明，在背面突出，末端直達於齒尖；葉柄纖細，長一至二公分，無毛。花單性，大小蕊花同株，小蕊花成頭狀花序，着生於長五至十公分之細梗上，由嫩枝之葉腋間發出，花梗長四公厘，花被具六裂片，裂片披針形，長三至五公厘，被細柔之絨毛，小蕊十一至十二本，稀較少或更多者，較花被長二倍，花絲細而無毛，花藥長圓形，黃色，二室，不發育之子房缺如；大蕊花二枚常為數被絨毛之箭形苞片所包圍，苞片下部連合為一亞卵圓形之總苞，着生於長三至六公分之梗上，花被六裂，被毛，子房下位，花柱三，纖細，反曲，微被毛。果為微被黃色細毛之三角卵圓形堅果，常二枚生於一直徑一公分半長二至二公分半之木質被毛而成四瓣裂之卵圓形總苞中，外被以具絨毛之細刺，具長四至六公分之果梗。

此種產於峨眉山西南之峨邊縣。

此種分佈於陝西，浙江，安徽，湖北，四川，湖南，貴州，雲南，廣東，廣西等省。

此種葉之背面有毛，具長一至二公分之葉柄，及被刺狀附屬物包被於總苞之外面，易與其相近之恩氏山毛櫸區別。此種雖在華西極普通，東南向分佈以至於海，而在峨山附近則較少。至恩氏山毛櫸在洗象池附近曾經發見，但亦極稀少。

圖解：1. 花枝（原大）；2. 果枝（原大）；3. 大蕊花序（放大二倍）；4. 大蕊花（放大三倍）；5. 小蕊花（放大三倍）；6. 堅果（放大二倍）；7 及 8. 葉之一部放大以示其絨毛。



109. *Fagus longipetiolata* Seemen

Plate 110.

FAGUS LUCIDA Rehder et Wilson.

Fagaceae.

Fagus lucida Rehder et Wilson in Sargent, Pl. Wilson III (1916), 191.— Rehder, Manual Cult Trees & Shrubs (1927), 189.— Chien, Icon. Chin. For. Trees I (1937), pl. 12.

Deciduous tree usually 20 to 23 metres high, 1 to 3 metres in diameter, trunk straight, bark dark grey, smooth; branchlets slender, usually pendulous, brown or dark brown, at first sericeous-pilose, then glabrescent, lenticels conspicuous, ovate, with scars of bud-scales at the ends of each year's growth; winter-buds terminal or axillary, elongated conical, 1-1.5 cm. long, scales brown or brownish-yellow, scarious, ovate or lanceolate, imbricate. Leaves alternate, chartaceous, ovate or ovate-lanceolate, 6-9 cm. long, 3-4.5 cm. broad, acuminate at the apex, broadly cuneate or subrotund at the base, sinuate on the margin, with triangular teeth projecting from the base of the sinus, upper surface shining deep green, lower surface pale green, glabrous on both surfaces except sparsely pubescent on the veins, midrib and 10, rarely 12, pairs of straight and paralleled lateral veins ending into the teeth, impressed above, prominent below; petioles terete, 3-15 mm. long, sericeous-pilose above, glabrous below. Flowers unisexual, monoecious, developing with the leaves in June, staminate flowers in axils of leaves from the base of one year old branchlets, in pendulous heads on slender pubescent peduncles 5 cm. in length, pedicels 1 mm. long, perianth campanulate, 3-4 mm. long, sericeous-pilose outside, glabrous inside, 5- or 6-lobed, lobes ovate, stamens 10, rarely to 12, exserted, 5 mm. long, rudimentary ovary densely pilose, pistillate flowers in the axils of leaves from upper part of one-year-old branchlets, usually in a pubescent 4-valved involucre, covered outside by awl-shaped bracts, on a stout peduncle, 5-10, rarely to 15, mm. in length, pubescent near the apex, ovary triangular, yellow-pubescent, styles 3. Fruit a triangular acorn, 1 cm. long, brown-pubescent and with a tuft of hairs near the apex, in a 4-valved woody cup, valves acute, covered outside with bracts, peduncles usually 10 mm. long.

SOUTHWEST OF MOUNT OMEI: Opien-hsien, Hai-wu-chi (海風基) alt. 1900-2200 m. tree 17-20 metres high. *W. C. Cheng*, No. 6117, July 5, 1936.

Distribution: Hupeh, Szechuan, Kweichow and Kwangsi.

This species was discovered by Dr. E. H. Wilson in 1907, from Hsing-shan-hsien of western Hupeh. The type-specimen is in leaf only and its flowers and fruits remain unknown. I have great pleasure in reporting its occurrence in the neighbourhood of Mount Omei, not only in order to mark its wider distribution, but also to make possible a full description of flowers and fruit. It differs from *Fagus longipetiolata* Seemen and *Fagus Engleriana* Seemen in the shining bright green lower surface of its leaves whose margin are usually sinuate with small, triangular teeth projecting from the base of the sinus. W. P. Fang.

Fig. 1, a flowering and young fruiting branch (natural size); 2, a staminate flower dissected to show the stamens (enlarged 3 times); 3, a staminate flower (enlarged 5 times); 4, a young fruits covered with ln a involucre (enlarged 3 times); 5, the fruit (enlarged 3 times); 6, a portion of leaf to show the hairs on the lower surface.

圖版一百一十

亮葉山毛櫸 別名：光葉青剛

殼斗科

常葉喬木高二十至二十五公尺，直徑一至三公尺，幹直，樹皮深灰色，光滑；小枝纖細，常下垂，褐色或深褐色，如密被絲狀細毛，隨即脫落，皮孔顯著，卵形，枝每年生長部分之末端有芽鱗之痕跡；多芽頂生或腋生，圓錐形，長一至一公分半，鱗片褐色或褐黃色，乾膜質，卵形或披針形，覆瓦狀排列。葉互生，紙質，卵形或卵狀披針形，長六至九公分，寬三至四公分半，先端漸尖，基部寬楔形或亞圓形，邊緣波狀，有三角形之鋸齒由凹處突出，葉表面為光亮之深綠色，背面深綠色，除葉脈上被稀疏之毛外，葉兩面皆無毛，中脈及十至十二對之直而平行之側脈未端止於齒尖，脈在葉表面不顯著，在葉背而顯著，葉柄渾圓，長三至十三公厘，上面有細柔之絨毛，下面光滑。花單性，大小蕊花同株，於六月中與葉同時發出；小蕊花由一年生小枝之葉腋間發出，生於細嫩被毛長五公厘之花梗上聚為下垂之頭狀花序，小花徑長一公厘，花被鐘形，長三至四公厘，外面被細軟柔毛，內面無毛，成五或六枚裂片，裂片卵形，小蕊十本，稀為十二本，伸出管外，長五公厘，不發育之子房被濃密之細毛；大蕊花由一年生小枝上部之葉腋間發出，常在一有毛之四瓣總苞中，外被以鑽形之苞片，着生於長五至十公厘稀至十五公厘之粗壯果梗上，近先端處被毛，子房三角形，被黃毛，花柱三。果為三角形之橡實，長一公分，被褐色絨毛，近先端被毛一束，生於一四瓣裂之木質總苞中，瓣銳尖，外被以苞片，果梗常長十公厘。

此種產於峨山西南之峨邊縣流屋基，高一千九百公尺至二千二百公尺之森林中。五月間開花，果實秋後成熟。

此種分佈於湖北，貴州，廣西三省。

此種為一九零七年威爾遜博士於鄂西之興山縣發見，其模式標本僅有葉，花果尚未獲得，現於峨山附近發見，可知其分佈實廣，且得詳記其花果之特性，其不同於長柄山毛櫸及恩氏山毛櫸者，在其葉之背面為亮綠色，且葉緣常為深波狀，而有三角形之小齒由波凹處突出。

圖解：1.花與幼果之枝(原大)；2.小蕊花之解剖示其小蕊(放大五倍)；3.一小蕊花(放大五倍)；4.包被於總苞中之橡實(放大三倍)；5.果實(放大三倍)；6.葉之一部示其背面之毛。



110. *Fagus lucida* Rehder et Wilson

Plate 111.

CASTANEA MOLLISSIMA Blume.

Fagaceae.

Castanea mollissima Blume, Mus. Bot. Lugd.—Bat. I (1850), 286.— Seemen in Engler, Bot. Jahrb. XXIX (1900), 288.— Rehder in Bailey, Stand. Cycl. Hort. II (1914), 682.— Nakai in Tokyo Bot. Mag. XXIX (1916), 54.— Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 192.

Castanea vesca Bunge (non Gaertner), in Mem. Sav. Etr. Acad. Sci. St.—Petersbourg, II (1833), 137 (Enum. Pl. Chin. Bor. 62).

Castanea Bungeana Blume, Mus. Bot. Lugd.—Bat. I (1850), 284.— Nakai in Tokyo Bot. Mag. XXIX (1916), 54.

Castanea vulgaris Hance (non Lamarck), in Journ. Bot. X (1872), 69.— Debeaux in Act. Soc. Linn. Bordeaux, XXXI (1876), 363 (Fl. Tchou-tou, 130), quoad plantam Chinesensem: l. c. XXXIII (1879), 64 (Fl. Tien-tsin, 41), quoad plantam Chinesensem.

Castanea vulgaris, var. *yunnanensis* Franchet in Journ. de Bot. XIII (1899), 198.

Castanea sativa Skan (non Millar), in Journ. Linn. Soc. XXVI (1899), 625, (pro parte).— Leveille, Fl. Kouy-tcheou, (1914), 125.

Castanea sativa, a *typica* Seemen in Engler, Bot. Jahrb. XXIX (1900), 287.

Castanea Duclouxii Dode in Bull. Soc. Dendr. France, (1908), 150; in Fedde, Rep. Spec. Nov. X (1911), 239.— Schneider, III. Handb. Laubholz. II (1912), 899.— Koidzumi in Tokyo Bot. Mag. XXX (1916), 69.

Castanea hupchensis Dode in Bull. Soc. Dendr. France, (1908), 151, fig.; in Fedde, Rep. Spec. Nov. X (1911), 240.— Schneider, III. Handb. Laubholz. II (1912), 899, fig. 563 c-d.— Koidzumi in Tokyo Bot. Mag. XXX (1916), 69.

Castanea crenata Henry (non Siebold et Zuccarini) in Elwes et Henry, Trees Great Brit. & Irel., IV (1909), 884 (pro parte).

Castanea sativa, var. *mollissima* Pampanini in Nuov. Giorn. Bot. Ital. n. ser. XVII (1910) 220.

Tree 15 to 20 metres high, rarely up to 25 metres high; bark grey or brownish grey, occasionally fissured; branchlets terete, those more than one year old greenish grey or purplish grey, glabrescent, with conspicuous ovate lenticels, those of the current year grey-pubescent; buds axillary, conical, with several pairs of ovate scales, pubescent outside. Leaves deciduous, chartaceous, alternate, arranged in two rows, oblong, ovate-oblong or oblong-lanceolate, 12-19 cm. long, 4.5-8 cm. broad, acuminate at the apex, broadly cuneate or subrotund at the base, remotely serrate with appressed pointed teeth on the margin, upper surface deep green, glabrous, lower surface green, glabrous or grey-pubescent, covered with stellate-hairs, midrib conspicuous above, prominent below, lateral nerves 10-20 pairs inconspicuous above, conspicuous below, reaching to the tip of the teeth; stipules lanceolate or oblong-lanceolate, 10-15 mm. long, 2-4 mm. broad; petioles terete, 8-18 mm. long, pubescent. Flowers unisexual, monoecious, staminate flowers tufted in axillary upright solitary catkins, 8-14 cm. long; perianth 6-lobed, lobes ovate or obovate, 1.5-2 mm. long, yellowish brown, ciliate on the margin, white-pubescent on both surfaces, stamens 8-10, rarely more or less, filaments slender, glabrous, 5-6 mm. long, anthers ellipsoid or subglobose, with rudimentary ovary in the centre, pistillate flowers usually 2 or 3 at the base of the uppermost staminate inflorescence, perianth coalescent with the ovary, 6-lobed, ovary inferior, 6-celled, 2 ovules in each cell. Nuts usually 3 enclosed completely by prickly involucre, covered with pubescent branched spines, usually splitting into 4 valves; pedicels 1-3 cm. long, pubescent.

MOUNT OMEI: Pao-ning-szu, alt. 400 m., *W. P. Fang*, No. 14222, April 29, 1940; same locality, tree 12 metres high, staminate flowers greenish or yellowish white, *W. P. Fang*, No. 16377, May 1, 1941; Fu-hu-szu, alt. 650 m., *W. P. Fang*, No. 14531, June 10, 1940; Ching-yin-ko, alt. 930 m., on slopes, tree 8-10 metres high, bark greyish black, flowers greenish yellow, *W. W. Ma*, No. 2283, June 12, 1940; same locality, tree 15 metres high, *G. L. Sun*, No. 1947, May 14, 1940; Kuang-fu-szu, alt. 1000 m., tree 10 metres high, common, *T. C. Lee*, No. 33687, October 5, 1940; Lung-sheng-kang, alt. 1015 m., at the side of the forests, tree 7-8 metres high, *T. C. Lee*, No. 3039, June 29, 1940; near Hung-chun-ping, alt. 1200 m., in thickets, tree 10 metres high, bark grey, flowers light yellow, *G. L. Sun*, No. 541, June 17, 1939; without precise locality, *G. W. Yao*, No. 5067, in 1939; north-west of Mount Omei, Yun-king-hsien, *G. W. Yao*, No. 3127, in 1939; south-west of Mount Omei, Opieun-hsien, *W. C. Cheng*, No. 5990 & 5992, in 1936; same locality, *G. W. Yao*, No. 3387, in 1939.

SZECHUAN: Chengtu, cultivated near a street, S. S. Chien, No. 5344, June 5, 1936; same, locality, cultivated near a house, tree 12 metres high, flowers yellowish green, W. P. Fang, No. 22386, May 23, 1938; without precise locality. K. L. Chu, No. 1950, in 1935.

Distribution: Liaoning, Hopei, Shantung, Shansi, Chekiang, Kiangsu, Kiangsi, Hupeh, Szechuan, Kweichow, Yunnan, Sikang, Fukien, Kwangtung, Kwangsi.

This is the most common species of *Castanea* in China and has been found indigenous on Mount Omei. It may be distinguished from other species by the lower surface of the leaves, which is glabrous or pubescent with stellate hairs, but not lepidote W. P. Fang.

Fig. 1, a flowering and leafy branch (natural size); 2, a fruiting branch (natural size); 3, a staminate flower (enlarged 5 times); 4, pistillate flowers (enlarged 5 times); 5, a portion of leaf showing the hairs on the lower surface (enlarged 10 times).

圖版一百一十一

板栗 別名：魁栗

殼斗科

喬木高十五至二十公尺，稀達二十五公尺；樹皮灰色或褐灰色，稀現深縱裂；小枝圓形，多年生之枝灰綠色或紫灰色，光滑無毛，具顯著之卵形皮孔，當年生枝被灰色絨毛，芽叢生，圓錐形，有數對卵形鱗片，表面有毛。葉冬季凋落，紙質，互生，排成二列，長圓形，卵狀長圓形或長圓披針形，長十二至十九公分，寬四公分半至八公分，先端漸尖，基部寬楔形或微圓，邊緣具有稀疎鋸齒，表面深綠色而光滑，背面綠色，光滑或被灰色細毛及被星形之毛，中脈在葉表面顯明，在葉背面突出，側脈十至二十對，直達於齒尖，在葉表面不顯著，在葉背面顯著，托葉披針形或長圓披針形，長十至十五公厘，寬二至四公厘；葉柄圓形，長八至十八公厘，被絨毛。花單性，大小蕊花同株，小蕊花着生於直立之柔荑花序，長八至十四公分，花被六裂，裂片卵形或倒卵形，長一公厘半至二公厘，黃褐色，邊緣具纖毛，兩面均被白色細毛，小蕊八至十，罕達二十本，稀更多或更少，花絲細而無毛，長五至六公厘，花藥橢圓形或亞圓形，中部有不發育之子房；大蕊花二三枚生於最高之小蕊花序之基部，花被與子房合生而成六裂片，子房下位，六室，每室二胚珠。堅果常三枚全包於刺狀總苞中，而被以被毛分枝之刺，常裂為四瓣；果梗長一至三公分，被毛。

此種產於峨眉山保寧寺，伏虎寺，清音閣，龍昇崗等處，四百公尺至一千公尺之路旁或森林中。四五月開花，九月後果可成熟。

此種分佈於遼寧，河北，山東，山西，浙江，江蘇，江西，湖北，四川，貴州，雲南，西康，福建，廣東，廣西，等省。

此種為中國板栗屬中之最普通者，在峨眉山野生者極為普遍。其不同於別種者，在其葉下無毛，或具星狀之毛，但無鱗斑。

圖解：1. 花枝（原大）；2. 果枝（原大）；3. 小蕊花（放大五倍）；4. 大蕊花（放大五倍）；5. 葉背面之一部（放大十倍）。



III. *Castanea mollissima* Blume

Plate 112.

CASTNEA HENRYI Rehder et Wilson.

Fagaceae.

Castanea Henryi (Shan) Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 186.

Castanea Henryi Skan in Journ. Linn. Soc. Bot. XXVI (1899), 823.— Seemen in Engler, Bot. Jahrb. XXIX (1900), 287.— Koidzumi in Tokyo Bot. Mag. XXX (1916), 101.

Castanea sativa Skan (non Millar) in Journ. Linn. Soc. Bot. XXVI (1899) 825 (pro parte).

Castanea sativa, var. *acuminatissima* Seemen in Engler, Bot. Jahrb. XXIX (1900), 287.— Pampanini in Nuov. Bot. Ital. n. ser. XVII (1900), 280.

Castanea Villmoriana Dode in Bull. Soc. Dendr. France, (1908), 156, fig.; in Fedde Repert. Nov. Spec. X (1911), 242.— Schneider, Ill. Handb. Laubholz. II (1912), 899, fig. 863h.— Rehder in Bailey, Stand. Cycl. Hort. II (1914), 662.— Koidzumi in Tokyo Bot. Mag. XXX (1916), 100.

Castanea Fargesii Dode in Bull. Soc. Dendr. France, (1908), 158, fig.; in Fedde, Repert. Nov. Spec. X (1911), 242.— Schneider, Ill. Handb. Laubholz. II (1912), 899, fig. 863 k.— Koidzumi in Tokyo Bot. Mag. XXX (1916), 99.

Castanea crenata Henry (non Siebold & Zuccarini), in Elwes et Henry, Trees Great Brit. & Irel., IV. (1909) 854 (pro parte).

Tree usually 10 metres high, rarely up to 20 metres high; branchlets cylindrical, brown or dark brown, with conspicuous ovate lenticels, usually glabrous except greyish pubescent on those of the current year; buds axillary, ovoid, glabrous, with several pairs of ovate scales. Leaves alternate, deciduous, chartaceous, lanceolate, 12-17 cm. long, 2-5 cm. broad, acuminate or long-acuminate on the apex, cuneate, broadly cuneate or subrotund at the base, coarsely serrate, with appressed bristle teeth on the margin, upper surface deep green, glabrous, lower surface pale green, glabrous or grey-pubescent while young, midrib conspicuous above, prominent below, lateral nerves 13-16 pairs, slightly impressed above, raised below, reaching to the tip of the teeth; petioles 1-1.5 cm. long; stipules lanceolate, caducous. Flowers unisexual, monoecious, appearing after the leaves, in spikes, staminate spike usually in axils of leaves and from the lower part of branchlets, 12-15 cm. long, upright, with compact flowers; pistillate spikes 1-4 cm. long, pubescent, from the upper part of branchlets, with few flowers; staminate flowers 2 mm. in diameter, 2-3 crowded in a bract, perianth 6-lobed, ovate or oblong-ovate, 1.5-2 mm. long, pubescent on both surfaces and the margin, stamens 10-12, usually 4-8 mm. long, filaments slender, glabrous, anthers ovoid, 2-celled, rudimentary pistil present or absent; pistillate flowers sessile, solitary, 3 mm. long, 2 mm. in diameter, lower bracts ovate, pubescent, upper bracts lanceolate or ovate-lanceolate, perianth 6-lobed, lanceolate or narrow-lanceolate, pubescent, ovary inferior, styles 6. Fruit a solitary, globose nut, wholly covered by a prickly involucre 3 cm. in diameter, spines pubescent; pedicels 3.5 cm. long, stout, glabrous or occasionally pubescent.

MOUNT OMEI: Lung-men-tung, alt. 546 m., small tree with greenish staminate flowers, in catkins, *W. P. Fang*, No. 14320, May 10, 1940; Lung-sheng-kang, alt. 1015 m., at side of forests, tree 15 metres high, *T. C. Lee*, No. 3040, July 29, 1940; same locality, tree 8-9 metres high, *T. C. Lee*, No. 3058, October 4, 1940; Ling-kuan-lau, alt. 1000 m., in forests, tree 10-15 metres high, flowers yellowish, *W. P. Fang*, Nos. 16628 & 16654, May 12, 1941; Pao-chang-teng, alt. 1400 m., tree about 8 metres high, staminate flowers white, *W. P. Fang*, No. 16713, May 20, 1941; Taping, alt. 1400 m., in forests, tree about 10 metres high, common, *W. P. Fang*, No. 14654, May 18, 1940; same locality, tree 8 metres high, young fruits light green, *T. C. Lee*, No. 2782, July 12, 1940; Hsin-kai-ssu, alt. 1300 m., *C. L. Chow*, No. 3804, October 30, 1938; Hsi-hsin-so, alt. 1100 m., in forests, small tree 1 metre high, *W. P. Fang*, No. 14809, May 20, 1940; same locality, shrub 4-8 metres high, leaves green above, pubescent below, young fruits light green, *T. C. Lee*, No. 2967 & 3627, July to October 1940; Southwest of Mount Omei, Opien-hsien, *W. C. Cheng*, Nos. 5990 & 5991, April 18, 1938; without precise locality, *T. H. Tu*, No. 783, in 1933; without precise locality, *C. W. Yao*, No. 5054, in 1939.

SZECHUAN: Kuan-hsien, alt. 1000 m., in forests, tree 10-20 metres high, bark grey, deeply fissured, S. S. Chien, Nos. 4742 & 5614 May to October 1936.

Distribution: Chekiang, Anhwei, Kiangsi, Hopei, Szechuan, Kweichow and Yunnan.

This species is easily distinguished from *Castanea mollissima* Blume and *Castanea Seguinii* Dode by the solitary fruits and separate staminate and pistillate inflorescences. On Mount Omei it is colloquially known as "Tseng-tze" (榛子). Its seeds also are edible, but by the natives their value is considered secondary to those of *Castanea mollissima* Blume. W. P. Fang.

Fig. 1, a flowering branch (natural size); a fruiting branch (natural size); 3, a staminate flower (enlarged 6 times); 4 a pistillate flower (enlarged 6 times); 5, a seed (natural size).

圖版一百一十二

錐 栗

別名：尖栗，桂花栗子；峨眉山俗名榛子。

殼 斗 科

喬木高十公尺，稀達二十公尺；小枝圓柱形，褐色或深褐色，具顯著之卵形皮孔，除當年生之枝被灰色絨毛外，其餘之枝常無毛；冬芽腋生，卵圓形，無毛，具數對卵形鱗片。葉互生，冬季凋落，紙質，披針形，長十二至十七公分，寬二至五公分，先端漸尖或長尖，基部楔形或廣楔形或亞圓形，葉緣具剛毛狀之稀疏尖鋸齒，葉表面深綠色無毛，葉背面灰綠色無毛或幼嫩時被灰色之細毛，中脈在葉表面顯明，在葉背面突出，側脈十三至十六對，在葉表面微凹下，在葉背面則隆起，側脈先端直達齒尖；葉柄長一公分至一公分半；托葉披針形，早落。花單性，大小蕊花同株，生葉後始開放，成穗狀花序；小蕊花之花序生於葉腋間，且自小枝之下部發出，長十二至十五公分，直立，具密集之花；大蕊花序長一至四公分，被毛，由小枝上部發出，僅具數花；小蕊花直徑二公厘，二至三花聚集於一苞片內，花被六裂，裂片卵形或長圓卵形，長一公厘半至二公厘，兩面及邊緣皆被毛，小蕊十至十二本，長四至五公厘，花絲絨細，無毛，花藥卵圓形，二室，不發育之子房或有或無；大蕊花無柄，單生，長三公厘，直徑二公厘，較低之苞片卵形並被毛，較上之苞片披針形或卵狀披針形，花被六裂，裂片形或廣披針形，被細毛，子房下位，花柱六。果為單生圓球形之堅果，全被於直徑三分公厘且具尖刺之總苞中，刺被絨毛；果梗長三公分半，粗壯，無毛或偶被絨毛。

此種產於峨眉山之龍門河，靈官樓，大坪，新開寺及息心所等處，海拔五百四十六公尺至一千六百公尺之森林中。五月開花，十月果始成熟。

此種分佈於浙江，安徽，江西，湖北，貴州及雲南諸省。

此種與他種之區別，在其有單生之果及分別之大小蕊花序。在峨眉山則通稱爲榛子，其種子可食，但當地人則視其價值較次於板栗。

圖解：1. 花枝（原大）；2. 果枝（原大）；3. 小蕊花（放大六倍）；4. 大蕊花（放大六倍）；5. 種子（原大）。



112.

Castanea Henryi R. et W.

Plate 113.

CASTANOPSIS HYSTRIX A. De Candolle.

Fagaceae.

Castanopsis hystrix, A. De Candolle in Seemen Journ. Bot. I (1863), 182; Prodr. XVI, pt. 2, (1864), 111.- Miquel in Ann. Mus. Lugd.-Bat. I (1863-4), 119.- Hooker f., Fl. Brit. Ind. V (1888), 620.- King in Ann. Bot. Card. Calcutta, II (1889), 95, t. 84.- Skan in Journ. Linn. Soc. XXXVI (1899), 524.- Dunn in Journ. Linn. Soc. XXXVIII (1903), 367.- Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 197.- Handel-Mazzetti, Symb. Sin. VII, Liefering I (1923), 27.

Castanea hystrix Hooker f. et Thomson, mss. ex A. De Candolle, Prodr. XVI, pt. 2 (1864), 111 (pro synonym.)

Quercus rutescens, Hooker f. et Thomson ex Hooker f. Fl. Brit. Ind. V (1888), 620 (pro synonym.)

Evergreen tree usually 10 to 15, rarely up to 20, metres high, branchlets slender, terete, those of the current year brown or yellow-pubescent, those more than one year old glabrous or glabrescent, with numerous ovate or elliptical lenticels; winter-buds ellipsoid, scales ovate, imbricate, densely yellow-pubescent on the outer surface. Leaves alternate, coriaceous, oblong-lanceolate or oblong-ovate, rarely elliptical, 7-12 cm. long, 2.5-3.5 cm. broad, acuminate or caudate-acuminate on the apex, broadly cuneate or subrotund at the base, entire on the margin or rarely obtusely serrate above the middle, upper surface shining green, glabrous, lower surface densely yellow-pubescent while young, less so when matured, midrib impressed above, elevated below, primary veins 13-15 pairs, obsolete above, prominent below; petioles 6-10 mm. long, slightly grooved above, rounded below, sparsely pubescent. Flowers unisexual, monoecious; staminate flowers white at first and changing to yellow later, in erect, pubescent catkins 7-18 cm. in length, solitary in the axil of leaf from the branchlets of the current year or from those two years old; sepals 5, ovate, 2 mm. long, glabrescent outside, villous inside; stamens 9-10, exserted, 6 mm. long, filaments slender, glabrous, anthers subglobose, 2-celled, rudimentary ovary densely tomentose; pistillate flowers opening after the staminate flowers, sessile, in solitary erect catkins 5-8 cm. long, bracts ovate, ciliate; sepals 4 or 5, ovate, glabrescent outside, villous inside, styles 3, stout, stigma rounded. Fruit a brownish conical nut, ripening the second year, in an ovoid yellow-pubescent involucre covered outside with pubescent, subulate, simple or compound spines and interrupted ridges.

MOUNT OMEI: near the city of Omei-hsien, alt. 460 m., in forest, tree 10 metres high, flowers white in erect spikes, S. S. Chien, No. 5407, May 3, 1936; Wan-kan, alt. 470 m., on grassy slope, tree 20 metres high, W. P. Fang, No. 14082, April 13, 1940; Pao-ning-ssu, alt. 470 m., tree 10 metres high, flower in buds, W. P. Fang, No. 14223, April 29, 1940; same locality, tree 10 metres high, staminate flower over and pistillate flower greenish, W. P. Fang, Nos. 16373, 16287, & 16477, May 1 to May 6, 1941; Hsiao-tien-tze, alt. 470 m., in forest, tree 8 metres high, staminate flower white, W. P. Fang, Nos. 14260 & 14282, May 10, 1940; Pao-kuo-ssu, alt. 500 m., tree 8 metres high, staminate flowers buffish yellow with offensive odor or in erect catkin, W. P. Fang, No. 14230, May 1, 1940; same locality, in grave-yard, small tree 8 metres high, W. P. Fang, No. 13921, March 19, 1940; same locality, W. P. Fang, No. 18701, May 6, 1942; Lung-men-tung, alt. 546 m., tree 10 metres high, W. P. Fang, No. 14194, April 20, 1940; same locality, W. P. Fang, No. 16284, April 19, 1941; Ching-yin-ko, alt. 900 m., in forest, tree 15-20 metres high, common, W. P. Fang, No. 16638, May 12, 1941; Chin-lung-ssu, alt. 960 m., in woods, tree 6 metres high, flowers white, C. L. Sun, No. 1965, March 14, 1940; without precise locality, H. C. Chow, No. 9679, in 1938; without precise locality C. W. Yao, No. 4131, in 1939.

Distribution: Chekiang, Fukien, Szechuan, Hunan, Kweichow and Yunnan.

This Himalayan species of *Castanopsis* is very common at the foot of Mount Omei where it formed a pure forest and attracts the eye of the visitor by its broad crown with evergreen leaves and white flowers in the spring..... W. P. Fang.

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

圖版一百三十三

栲樹

殼斗科

常綠喬木高十至十五公尺，稀達二十公尺，小枝細圓，當年生枝具褐色或黃色細毛，多年生之枝無毛或近於光滑，具多數卵形或橢圓形之皮孔；冬芽橢圓形，鱗片卵形，覆瓦狀排列，表面被有濃密之黃色細毛。葉互生，革質，長圓披針形或長圓卵形，稀或橢圓形，長七至十二公分，寬二公分至三分，先端漸尖或成尖尾狀，基部闊楔形或微凹，全緣或中部以上具稀疏之鈍鋸齒，表面亮綠色，無毛，幼時葉之背面有濃密之黃色細毛，成熟時即無，中脈在葉表面凹下，在葉背面隆起，側脈十三至十五對，在葉表面不顯，在葉背面則突出；葉柄長六至十公分，上面微有溝，下面圓形，被稀疏之細毛。花夏季開放，單性，大小蕊花同株，小蕊花初為白色，後變為黃色，着生於直立被毛而長七至十八公分之柔荑花序上，僅一花序生於由當年生枝或兩年生枝之葉腋間；萼片五枚，卵形，長二公分，表面光滑，內面被柔毛；小蕊九至十枚，向外伸展，長六公厘，花絲細而無毛，花藥亞圓球形，三室，不育種子房被濃密之短毛；大蕊花開於小蕊花之後，銀梗，生於長五至八公分單生直立之柔荑序上，苞片卵形，被纖毛；萼片四或五枚，卵形，表面光滑，裏面有柔毛，花柱三，粗壯，柱頭圓形。果為褐色圓錐形之堅果，兩年成熟，生於卵圓形且被黃毛之總苞內，總苞外被有刺及細毛。

此種產於峨眉山之山麓；自峨眉縣城起，以迄於保寧寺，蓮花子，報國寺，龍門洞，金龍寺等四百六十公尺至九百六十公尺之森林中或路旁。

此種分佈於浙江，四川，福建，湖南，貴州及雲南等省。

此種原產於喜馬拉雅山，在峨眉山極其普遍，常成純粹森林。其綠葉聚成之廣大樹冠及五六月所開之白花，極易引起遊人之注意。

- 圖解：1. 小蕊花枝(原大)； 2. 果枝(原大)； 3. 小蕊花(放大十倍)； 4. 大蕊花序(原大)； 5. 大蕊花(放大十倍)。

此種產於峨眉山之山麓；自峨眉縣城起，以迄於保寧寺，蓮花子，報國寺，龍門洞，金龍寺等四百六十公尺至九百六十公尺之森林中或路旁。此種分佈於浙江，四川，福建，湖南，貴州及雲南等省。此種原產於喜馬拉雅山，在峨眉山極其普遍，常成純粹森林。其綠葉聚成之廣大樹冠及五六月所開之白花，極易引起遊人之注意。

圖解：1. 小蕊花枝(原大)； 2. 果枝(原大)； 3. 小蕊花(放大十倍)； 4. 大蕊花序(原大)； 5. 大蕊花(放大十倍)。

Distribution: Chekiang, Fukien, Szechuan, Honan, Kwichow and Yunnan.

This Himalayan species of *Castanopsis* is very common at the foot of Mount Omei where it forms a pure forest and attracts the eye of the visitor by its large crown with constant leaves and white flowers in the spring.

FIG. 1. a staminate flowering branch (natural size); 2. a fruiting branch (natural size); 3. a staminate flower (enlarged 10 times); 4. a pistillate flowering inflorescence (natural size); 5. a pistillate flower (enlarged 10 times).



113. *Castanopsis hystrix* A. DC.

Plate 114.

CASTANOPSIS PLATYACANTHA Rehder et Wilson.

Fagaceae.

Castanopsis platyacantha, Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 200.-Handel-Mazzetti, Symb. Sin. VII, Lieferung 1 (1929), 28.-Rehder, Manual, Cult. Trees & Shrubs, (1927), 161.

Tree usually 10, rarely up to 21 metres high; trunk straight, about 1-2 metres in diameter at breast height, bark brownish-grey, usually fissured and peeling off in irregular, thin flakes; branchlets purple or deep purple, glabrous, with conspicuous ovate or elliptical lenticels; Winter-buds terminal or axillary, oblong-ellipsoid or conical rarely ovate, 8-15 mm. long, 5 mm. in diameter, scales numerous, biseriate, opposite, acute, shining grey, glabrous except puberulous near the apex, ciliate on the margin. Leaves persistent, coriaceous, elliptical-oblong or elliptical, rarely oblong-ovate or elliptical-lanceolate, 9-15 cm. long, 3.5-6.5 cm. broad, acuminate at the apex, obliquely cuneate or broadly cuneate, rarely subrotund, at the base, remotely dentate above the middle of blade and entire below the middle, as well as slightly revolute on the margin, upper surface shining green, glabrous, lower surface covered with tomentum except glabrous on the midrib, tomentum yellow at first, then changing to grey or whitish-grey, midrib slightly elevated or flat above, prominent below, lateral nerves 8-10, obsolete above, conspicuous below, reaching nearly to the margin; petioles stout, 8-15 mm. long, flat above, rounded below, glabrous. Flowers unisexual, monoecious, staminate catkin simple, slender, glabrous, angulate, 7-16 cm. long, in axils of leaves from the current-year branchlets. Flowers fasciculate, perianth 6-lobed, lobes anguste, concave, ovate or obovate, 1.5-2 mm. long, 1-1.5 mm. broad, glabrous outside, stamens 10, exserted, 4.5-5 mm. long, filaments slender, filiform, glabrous, anthers glabrous, rudimentary ovary glabrous, pistillate spikes stout, 5-8 cm. long, solitary, in axils of leaves from the upper part of current year branchlets, pistillate flowers 1-3 in an involucre, sessile, perianth-lobes ovate, glabrous outside, villous inside, styles 3, glabrous, stigma minute. Fruit a pubescent broadly conical-ovoid, apiculate nut, ripening the second year, 1.2-1.5 cm. long, 1.2-1.8 cm. broad, 1-3 in a grey-tomentose, echinate, subglobose involucre, 1.5-2.5 cm. in diameter, covered outside with concentrated, fasciculate spines, 3-5 mm. long, pointed at the apex, compressed at the base or awl-shaped, grey-tomentose except glabrous near the apex.

MOUNT OMEI: Ta-ping, alt. 1400 m., in woods, tree 12 metres high, rare, *T. C. Lee*, No. 2780, July 12, 1940; Yu-hsien-ssu, alt. 1771 m., in woods, tree 10 metres high, pistillate flowers greenish, *T. C. Lee*, No. 2821, July 14, 1940; Chang-lao-ping, alt. 1600 m., in forest, tree 15 metres high, *W. P. Fang*, No. 14827, May 21, 1940; en route from Chu-tien to San-ton-ho, alt. 1650 m., in forest, tree 10 metres high, *C. L. Sun*, No. 306, May 21, 1936; Hua-yen-ting, alt. 1950 m., in forest, tree 12 metres high, *W. P. Fang*, No. 12892, August 3, 1938; same locality, tree 10 metres high, mixed with *Lithocarpus* sp., *T. C. Lee*, No. 2895, July, 1940; same locality, tree 8-10 metres high, *T. C. Lee*, Nos. 3591, & 3977, October 1940; Chin-lao tung, alt. 1876 m., in woods, tree 10 metres high, flowers green, *C. L. Sun*, No. 2147, May 25, 1940; near Chin-lao-tung, alt. 1800 m., at open slope, tree 7-10 metres high, staminate flower light green, *W. W. Wa*, No. 2460, June 18, 1940; Pai-yun-ssu, alt. 2450 m., *H. C. Chow*, No. 7911, July 20, 1938; southwest of Mount Omei, Opien-hsien, Hai-ta-hu-wu-chi, alt. 1600 m., tree 10-21 metres high, bark brownish-grey, peeling off in thin flakes, *W. C. Cheng*, Nos. 6100, 6113, 6489 & 6686, July 1936; same locality, *S. N. Hsu*, No. 17, 1937; Opien-hsien, Wu-keng-shu, tree 10 metres high, flowers white, *C. L. Sun*, No. 750, July 20, 1939; without precise locality, *C. W. Yao*, Nos. 3847 & 4840, in 1939; without precise locality, *H. C. Chow*, Nos. 9712 & 9891, in 1938; without precise locality, *T. H. Tu*, No. 161, in 1933; without precise locality, *K. L. Chu*, No. 1014, in 1933.

SIKANG: Tien-chuan-hsien, *F. C. Tai* & *C. M. Teng*, No. 4240, July 22, 1939.

Distribution: Szechuan, Sikang, Hunan and Yunnan.

This species is fairly common on the middle and the upper slopes of Mount Omei and is usually found in company with *Lithocarpus*. It is a pretty tree with a broad crown.....W. P. Fang.

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

圖版一百一十四

扁刺栲樹

殼斗科

喬木高十公尺，稀達二十一公尺；幹直，胸高直徑約一至二公尺，樹皮褐灰色，常裂為不規則之薄片而脫落；小枝紫色或深紫色，無毛，有顯明之卵形或橢圓形皮孔；冬芽頂生或腋生，長圓狀橢圓形或圓錐形稀為卵形，長八至十五公厘，直徑五公厘，鱗片多數，排列為二行，對生，銳尖，亮灰色，除近先端被細毛外餘皆無毛，邊緣具纖毛。葉常綠，革質，橢圓狀長圓形或橢圓形，稀為長圓卵形或橢圓狀披針形，長九至十五公分，寬三公分半至六公分半，先端漸尖，基部斜楔形或寬楔形，稀為亞圓球形，葉片有稀疎之鋸齒，中部以下為全緣，緣微反折，葉之表面亮綠色而無毛，葉之背面除中脈外有毳狀之毛，初為黃色，後變為灰色或白灰色，在葉表面之中脈稍隆起或突出，在葉背面則凸出，側脈八至十對，在葉表面不顯明，在葉背面則顯明，直達於葉緣；葉柄粗壯，長八至十五公厘，上面扁平，下面圓形，無毛。花單性，大小蕊花同株，小蕊花成單生柔荑花序，細而無毛，長七十至六公分，由當年生枝上之葉腋間發出，花叢生，花被六裂，裂片狹長，向內凹，卵形或倒卵形，長一公厘半至二公厘，寬一公厘至一公厘半，外面無毛，小蕊十本，伸出花外，長四公厘半至五公厘，花絲纖細，綫形，無毛，花藥無毛，發育不全之子房密被纖毛；大蕊花之穗粗壯，長五至八公分，單生，由當年生枝上部之葉腋間發出，大蕊花一至三枚生於一總苞內，無梗，花被裂片卵形，外面無毛，內面被柔毛，花柱三，無毛，柱頭小。果為一具細毛之寬圓錐形堅果，頂尖，兩年成熟，長一公分二至一公分半，寬一公分二至一公分八，在每一有灰色短毛稍呈球形之總苞中有一至三枚，直徑一公分五至二公分五，外被以輻集叢生之刺，長三至五公厘，先端尖，基部扁形或鑿形，除近先端無毛外皆被有灰色細毛。

此種產於峨眉山大坪，九老洞，遇仙寺，長老坪，華嚴頂，白雲寺等處一千四百公尺至二千四百五十公尺之大森林中。五六月開花，果實次年成熟。

此種分布於四川，西康，湖南及雲南等省。

此種在峨眉山中部及被上部，甚為普遍，常見其與石櫟屬之植物混生，樹極美觀而有廣大樹冠。

圖解：1. 小蕊花及其葉枝（原大）； 2. 大蕊花枝（原大）； 3. 果與葉枝（原大）； 4. 大蕊花（放大十倍）； 5. 小蕊花（放大十倍）。



114. *Castanopsis platyacantha* Rehder & Wilson.

Plate 115.

CASTANOPSIS CERATACANTHA Rehder et Wilson.

Fagaceae.

Castanopsis ceratacantha, Rehder et Wilson in Sargent, Hl. Wilson. III (1916), 199.-
Handel-Mazzetti, Symb. Sin. VII, Lieferung 1 (1929), 23.- Rehder Manual Cult. Trees & Shrubs,
(1927), 161.

Tree 8-20 metres high, 1-2 metres in diameter; branchlets slender, terete, those of the current year densely yellowish or grey-tomentose or villose, those more than one year old glabrescent, grey or dark grey, with conspicuous ovate lenticels; winter-buds ovoid, scales pubescent, biserial, scarious. Leaves persistent, coriaceous, alternate, usually in two ranks, oblong-lanceolate or rarely elliptical, oblong, 9-12 cm. long, 3-4.5 cm. broad, acuminate at apex, broadly cuneate or subtrund at the base, entire or sparsely dentate near the apex, upper surface green, glabrous, lower surface densely yellowish tomentose or villous, midrib impressed above, elevated below; primary veins 14-18 pairs, divergent at an angle of 45°, obsolete above, prominent below; petioles 4-10 mm. long, grooved above, rounded below, densely grey villous. Flowers unisexual, monoecious, staminate flowers in a villous erect single catkin 15-20 cm. long, solitary in the axils of leaves from the current year branchlets. Staminate flowers with 2-3 ovate bracts, densely villous outside, perianth 5-lobed, lobes ovate, 2 mm. long, glabrous, stamens 8-10, exserted, about 4 mm. long, filaments slender, glabrous, anthers subglobose, yellow, 2-celled, rudimentary ovary ellipsoid, densely villous, pistillate flowers not found. Fruit ripening the second year, sessile, in a villous or tomentose stout spike, 16-20 cm. long, nuts conical-ovoid, 8-15 mm. high, tomentulose, brownish, 1-3, usually 2, in a subglobose densely grey tomentulose involucre, covered outside with pointed and slender spines.

MOUNT OMEI: Northeast of Mount Omei; Lo-shan-hsien, Wu-yu-ssu, in forest, tree 20 metres high, *H. C. Chow*, No. 9676, May 4, 1933; northwest of Mount Omei, Wa-wu-shan, *C. Y. Yao*, No. 4117, in 1938.

Distribution: Szechuan and Yunnan.

This a very distinct species and is easily recognized by the densely yellow-villous or tomentose hairs on the young branchlets of the current year, on the lower surface of leaves and on the inflorescences, and by the densely villous, involueral fruits, covered with numerous long slender, spines. It was discovered by the late Mr. E. H. Wilson at Wa-shan and Wa-wu-shan, west and north-west of Mount Omei. Mr. C. W. Yao found it again at the type-locality. It is very interesting to have Mr. H. C. Chow's collection in reporting the occurrence of this species at the northeast of Mount Omei. Although von Rosthorn found it at Nanchuan-hsien in Eastern Szechuan and A. Henry found it at Szemao in Southern Yunnan, it is very rare in all the above mentioned localities.

Fig. 1, a staminate flowering branch (natural size); 2, a young fruiting branch (natural size); 3, a staminate flower (enlarged 10 times); 4, a portion of leaf (enlarged 5 times).

圖版一百一十五

長刺栲樹

殼斗科

喬木高八至二十公尺，直徑一至二公尺；小枝細圓，當年生枝被濃密之黃色或灰色柔毛，多年生枝無毛，灰色或深灰色，具顯明之卵形皮孔；冬芽卵圓形，鱗片柔毛，排列成二行，膜質。葉常綠，革質，互生，常成二列，長圓披針形或稀爲橢圓狀長圓形，長九至十二公分，寬三至四公分半，先端漸尖，基部廣楔形或亞圓形，全緣或近於先端具稀疏之鋸齒，表面綠色無毛，背面被濃厚之黃色淺毛或柔毛，中脈在葉表面不顯，在葉背隆起，側脈十四至十八對，與中脈相交之角成四十五度，在葉表面微有痕跡，在葉背則突出；葉柄長四至十公厘，上面有溝，下面圓形，被濃密之灰色細毛。花單性，大小蕊花同株，小蕊花生於長十五至二十公分被柔毛而直立之柔荑毛序上，單生於當年生枝之葉腋間，小蕊花具二至三卵形苞片，外面被濃密之柔毛，花被五裂，裂片卵形，長二公厘，無毛，小蕊八至十本，伸出管外，長約四公厘，花絲細而無毛，花藥呈亞圓球形，黃色，二室，不發育之子房爲橢圓形，被有濃密之柔毛；大蕊花不顯。果於次年成熟，無梗，在一被柔毛或短毛而粗壯之總狀花序上，長十六至二十公分，堅果圓錐狀卵圓形，高八至十五公厘，微被短毛，褐色，一至三枚，常爲二枚，生於亞圓球形被濃密灰色短毛之總苞內，外被以尖而細之刺。

此種產於峨眉山東北之樂山縣烏尤寺及峨眉山西北峨眉縣瓦屋山森林中。五六月開花。

此種當年生之幼枝，葉之背面及花序，被濃密之黃色柔毛及濃密之短毛，而總苞復被以長細之刺，極易與別種辨別。此種爲威爾遜博士於峨山西北之瓦山及瓦屋山中發現，姚仲吾君又於原產地採得。其他如川東之南川縣及雲南之思茅縣雖亦有發現，但極稀少。

圖解：1. 小蕊花枝（原大）；2. 幼果枝（原大）；3. 小蕊花（放大五倍）；4. 葉之一部（放大五倍）。



115. *Castanopsis ceratocantha* Rehdar et Wilson

CASTANOPEIS CHUNIANA Fang.

Fagaceae

Castanopsis Chuniana Fang, spec. nov.

Arbor sempervirens, 15 m. alta; ramuli sparsi, satis validi, teretes, hornotini annotinque dense favo-tomentosi. Gemmae conicae, perulis scariosis, 8 mm. latis obtectae. Folia coriacea, oblongo-lanceolata vel oblongo-oblancoolata, apice acuta et acuminata, base cuneata, 7-12 longa, 3-3.4 cm. lata, supra laete viridia, nitentia, subtus dense leucophaea vel flavido-pubescentia, costa media supra canaliculata vel impressa, subtus elevata, nervis lateralibus utrinsecus 17-20, supra obsolete subtus elevatis; petioli 5-8 mm. longi, supra plani vel leviter canaliculati. Amenta mascula in axillis foliorum annotiuorum composita, 12-14 cm. longa, flavido-tomentosa; bractee obtusae, dorso dense tomentosae; sepalis 5 vel 6, ovata, 2 mm. longa, extrinsecus glabra, intus puberula; stamina 10 vel 11, circiter 5 mm. longa, antheris glabrescentibus, filamentis gracilibus glabris, saepe curvatis; ovarii rudimentum dense tomentosum. Amenta pistillata terminalia vel in parte superiore ramulorum; flores plerumque terni intra involucrem inclusi, bracteis acutis, dense favo-tomentosis, sepalis foris pubescentibus; styli 3, validi, 1 mm. longi. Fructus alternant, sessiles, glandes puberulae, flavae, late conicae, 5-8 mm. longae, 5-6 mm. latae, 1-2 intra involucre subgloboso inclusio, echinato, cinereo-tomentoso, 1-1.5 cm. diametro, fasciulis echinato, subulato, simpliciter vel ramoso, spinis 1-1.6 cm. longis, cinereo-tomentosis, apice glabris.

Evergreen tree about 15 metres high; branchlets stout, terete, those of the current year as well as those of the second year densely yellow-tomentose. Winter-buds conical, 8-12 mm. long; scales scarios, triangular-acute, puberulous outside, glabrescent inside. 5-8 mm. long, 5 mm. broad. Leaves alternate, persistent, coriaceous, oblong-lanceolate or oblong-oblancoolata, abruptly acuminate with the acumen acute at the apex, broadly cuneate at the base, 7-12 cm. long, 3-3.4 cm. broad, upper surface bright shining green, glabrous, lower surface densely grey- or yellowish-pubescent, midrib grooved or impressed above, prominently elevated below, primary lateral veins 17-20, obsolete above, raised below; petioles 5-8 mm. long, flat or slightly grooved above, rounded below. Flowers monoecious; staminate flowers in erect, yellow-tomentose compound catkins 12-14 cm. long, in the axils of leaves from branchlets of 2-years old; bracts obtuse, densely tomentose outside; sepals 5 or 6, ovate, 2 mm. long, glabrous outside, puberulous inside; stamens 10 to 11, about 5 mm. long, anthers glabrescent, 2-celled, filaments slender, glabrous, usually curved; rudimentary ovary densely tomentose; pistillate flowers usually 3 within the involucre, usually in a terminal spike or from upper part of branchlets; bracts acute, densely yellow-tomentose; sepals pubescent outside; styles 3, stout, 1 mm. long. Fruit a sessile puberulous yellowish, broadly conical nut, 5-8 mm. long, 5-6 mm. broad, ripening the second year, 1-2 enclosed in a yellowish-grey densely tomentose, echinate, subglobose involucre 1-1.5 cm. in diameter, covered outside with fascicular, subulate, simple or branched spines 1-1.5 cm. long, grey-tomentose except glabrous near the pointed apex.

NORTHWEST OF MOUNT OMEI: Hung-ya-hsien, Wa-wu-shan, "Ridge of the Lion", on slopes, tree 15 metres high, *C. W. Yao*, No 3564 (type of flower), June 14, 1939; Hung-ya-hsien, Ping-ling-tzu, *C. W. Yao*, No. 4076, July 10, 1939; Hung-ya-hsien, Shuan-tung-chi, in forests, tree 12-17 metres high, bark dark brown, leaves green and glabrous above, yellowish-pubescent below, *C. L. Sun*, No. 1182 (type of fruit), September 3, 1939.

This new species seems to be near *Castanopsis ceratacantha* Rehder & Wilson, which was based on fruiting specimen only, but differs in conical buds with scarios bud-scales, compound staminate catkins, and stout branchlets which are densely tomentose even when two years old. In *C. ceratacantha* Rehder & Wilson the buds are ovoid, and the branchlets become glabrescent in the second year.

This new species is named in honour of Professor Woon-Young Chun, who has made valuable contributions to our knowledge of the plants of this group..... W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, pistillate flowers (enlarged 15 times); 3, a staminate flower (enlarged 18 times), 4, a fruiting spike (natural size); 5, a nut (natural size).

圖版一百一十六

陳氏栲樹新種

殼斗科

常綠喬木高約十五公尺；小枝粗壯圓柱形，當年生及二年生枝密被黃色絨毛。冬芽圓錐形，長八至十二公厘，鱗片膜質，三角狀銳尖，表面被絨毛，裏面光滑無毛，長五至八公厘，寬五公厘。葉互生，宿存，革質，長圓狀披針形或長圓狀倒披針形，先端突尖，基部寬楔形，長七至十二公分，寬三至三分四公厘，表面亮綠色無毛，背面密被灰色或黃色絨毛，中脈在葉表面成溝狀或僅稍凹下，在背面則突出，側脈十七至二十對，在葉表面模糊在背面則隆起；葉柄長五至八公厘，上面扁平或少有溝，下面圓形。花單性，大小花同株，小蕊花着生於直立被黃色絨毛而長十二至十四公分之複葉花序上，由二年生枝之葉腋間發出，苞片鈍形，外面被濃密之絨毛，萼片五或六枚，卵形，長二公厘，外面無毛，內面被絨毛，小蕊十或十二本，長約五公厘，花藥光滑無毛，二室，花絲纖細而無毛，常彎曲，不發育之子房被濃密之細毛；每一總苞內常有大蕊花三枚，着生於頂生之葉腋花序上，或由小枝上部發出，苞片銳尖，被濃密之黃色絨毛，萼片外面被毛，花柱三枚，粗壯，長一公厘。果為圓錐形且被絨毛之淡黃色小堅果，兩年成熟。一枚或二枚包蓋於亞圓球形之總苞中。總苞密被黃灰色之柔毛及長刺。刺錐形，常分枝，數枚叢生，長一至一公分半。除其尖銳之先端係光滑狀外，均被灰色絨毛。

此種產於峨眉山西北洪雅縣之瓦屋山獅子崗，炳靈祠及雙洞溪等處森林中。五六月開花。次年秋季果可成熟。

此新種與本屬已知之種類均易於區別。與長刺栲樹親緣較近，所不同者，在其有圓形之芽具乾而或膜質之薄苞片，小蕊花成複葉花序，及其粗壯之小枝雖當第二二年時亦被絨毛。長刺栲樹之芽則成卵圓形，而其枝當第二年即變光滑狀。故兩者絕不相同也。

此新種之命名，係從國立中山大學植物研究所所長陳煥鑄教授之姓。陳教授為治此科之權威，於此科植物之分類貢獻極大，故以其姓名此新種以紀念之。

圖解 1. 花枝(原大)； 2. 大蕊花(放大十五倍)； 3. 小蕊花(放大十五倍)； 4. 着果之枝(原大)； 5. 堅果(原大)。



116. *Castanopsis chuniana* Fang

LITHOCARPUS CLEISTOCARPA (Seemen) Rehder et Wilson.

Fagaceae.

Lithocarpus cleistocarpa (Seemen) Rehder et Wilson in Sargent, *Pl. Wilson.* III (1916), 205.*Quercus cleistocarpa*, Seemen in Engler, *Bot. Jahrb.* XXIII, Beibl. No. 57 (1897), 52; XXIX (1900), 295. - Skan in Journ. Linn. Soc. XXVI (1899), 510. - Franchet in Journ. de Bot. XIII (1899), 157.*Quercus fragilera*, Franchet in Journ. de Bot. XIII (1899), 157.*Quercus Wilsonii* Seemen in Fedde, *Rep. Nov. Spec.* III (1906), 53.*Passonia Wilsonii* Schottky in Engler, *Bot. Jahrb.* XLVII (1912), 660.*Passonia cleistocarpa*, Schottky in Engler, *Bot. Jahrb.* XLVII (1912), 660. - Koidzumi in Icon. Pl. Koisitov. I (1912), 113, t. 57.*Synaedrys Wilsonii*, Koidzumi in Tokyo Bot. Mag. XXX (1916), 167.*Synaedrys cleistocarpa*, Koidzumi in Tokyo Bot. Mag. XXX (1916), 168.

Tree 15 to 20 rarely up to 20 metres high, bark dark grey, rough and usually deeply fissured; branchlets stout, angulate, glabrous, green or greenish-grey, with conspicuous ovate lenticels; winter-buds axillary, conical, scales imbricate, triangular-acuminate, puberulous on both surfaces. Leaves persistent, coriaceous, elliptic-oblong or oblong-lanceolate, 14-18 cm. long, 4.5-6 cm. broad, acute or shortly acuminate at the apex, cuneate or broadly cuneate and decurrent at the base, entire and slightly revolute on the margin, upper surface shining green or yellowish-green, lower surface pale green, grey-tomentulose, covered with thin indumentum at first, then glabrescent, midrib slightly elevated above, distinctly elevated below, primary veins 11-13, obsolete above, distinct below; petioles 1.5-2 cm. long, grooved above, rounded below, glabrous. Flowers monoecious; staminate flowers in erect sparsely puberulous catkin, 12-15 cm. long, sepals 5 or 6, ovate, 1 mm. long, densely grey-pubescent outside, glabrescent inside, stamens 10 to 12, usually 5-7 mm. long, slender, glabrous, anthers yellow, subglobose, 2-celled; pistillate flowers usually 3 in an involucre in a erect stout catkin from upper part of branchlet; usually above the staminate catkins, sepals 5 or 6, ovate, usually connate at its lower two-third, styles 3, stout, glabrous. Fruit a yellow, depressed, subglobose nut, almost wholly enclosed by the cup-like involucre, 1-1.5 rarely 2 cm. in diameter, scales obtuse, densely grey-pubescent, connate at base into a concentric ring.

MOUNT OMEI: Chang-lao-ping, alt. 1600 m., S. S. Chien, No. 6155, July 15, 1937; same locality, in forest, tree 20 metres high, *W. P. Fang*, No. 14824, May 21, 1940; Hua-yen-ting, alt. 1950 m., in forest, tree 18 metres high, staminate flower white, common, *W. P. Fang*, No. 12891, August 3, 1938; same locality, at roadside, tree 15 metres high, *W. P. Fang*, No. 16586, May 10, 1941; near Chiu-lao-tung, alt. 1800 m., tree 10 metres high, *W. W. Ma*, No. 2161, June 16, 1940; near Chiu-lao-tung, alt. 1800 m., tree 10 metres high, *W. W. Ma*, No. 2461, June 16, 1940; Hsi-hsiang-chih, alt. 2100 m., on slope, tree 10 metres high, staminate flowers yellow, pistillate flowers light green, common, *T. C. Lee*, No. 2908, July 21, 1940; Ta-cheng-ssu, alt. 2300 m., at side of forest, tree 10 metres high, staminate flower light yellow, *T. C. Lee*, No. 2914, July 21, 1940; same locality, in forest, tree 8 metres high, *W. P. Fang*, No. 17177, July 6, 1941; southwest of Mount Omei, Opien-hsien, Yen-king-chi, *W. C. Cheng*, Nos. 6179 & 6448, in 1936; same locality, in forest, small tree 10 metres high, *C. L. Sun*, No. 878, July 30, 1939; without precise locality, S. N. Hsu, Nos. 19 & 693, in 1938; without precise locality, *C. W. Yao*, Nos. 2340, 2817, 3816, & 4443 in 1939.

SIKANG: Pao-hsing-hsien (formerly known as Mupin), alt. 2450 m., tree 23-30 metres high, *K. L. Chu*, No. 3102, July 14, 1936; Tien-chuan-hsien, *F. C. Tai* & *C. M. Teng*, Nos. 5052, 5100 & 5224, July to September 1939.

Distribution: Hupeh, Szechuan, Sikang.

This species is a very pretty evergreen tree found commonly in Western Hupeh and Eastern Szechuan. On Mount Omei it has been found, so far, only occasionally on the middle slopes, that is, from 1600 to 2300 metres above sea-level. It is easily recognized by the leaves which on the lower surface are grey-tomentulose at first and glabrescent later, and by the flat subglobose nut, almost wholly enclosed by the obtuse scaly involucre..... *W. P. Fang*.

Fig. 1, a leafy and staminate flowering branch (natural size); 2, a young fruiting branch (natural size); 3, a fruiting spike (natural size); 4, a staminate flower (enlarged 10 times.)

Plate 117A. *Lithocarpus cleistocarpa* Rehder et Wilson, var. *molienica* Fang, var. nov.

A typo differt foliis supra et subtus glabris.

MOUNT OMEI: Lien-hua-shih, alt. 1921 m., H. C. Chow, No. 7743, July 2, 1938; Pai-yun-suu, alt. 2536 m., H. C. Chow, No. 7912, July 20, 1938; same locality, tree 15 metres high, staminate flowers yellowish-green, pistillate flowers greenish, W. P. Fang, No. 17310A, July 14, 1941.

This variety differs from the type-species in having leaves which are glabrous on both surfaces

..... W. P. Fang.

Fig. 1, a flowering and fruiting branch (natural size); 2, a staminate flower (enlarged 20 times).

圖版一百一十七

全苞石櫟

別名：儂櫟樹，鐵青剛。

殼斗科

喬木高十五至二十公尺，稀達二十五公尺；樹皮黑灰色，粗糙，常裂成溝狀；小枝粗壯，有稜角，無毛，綠色或灰綠色，具顯明之卵形皮孔；冬芽腋生，圓錐形，鱗片覆瓦狀排列，三角形漸尖形，兩面均被細毛。葉宿存，革質，橢圓狀長圓形或長圓狀披針形，長十四至十八公分，寬四公分半至六公分，先端銳尖或短漸尖，基部楔形或廣楔形且基部向下延伸，葉緣全緣或微向背面反捲，表面深綠色或黃綠色，背面灰綠色，微被灰色細毛，最初蓋以薄毛，旋即脫落而光滑，中脈在葉表面微隆起，在葉背面則隆起較顯明，側脈十一至十三對，在葉表面微現痕跡，在葉背面較清楚；葉柄長一公分半至二公分，上面有溝紋，下面圓形，無毛。大小蕊花同株，小蕊花生於直立被疏稀細毛之藥莖花序上，長十二至十五公分，萼片五或六枚，卵形，長一公厘，外面被濃密之灰色細毛，內面光滑，小蕊十至十二本，常長五至七公厘，纖細而無毛，花藥黃色，呈亞圓球形，二室；大蕊花常有三支生於一總苞內，着生於小枝上部，直立而粗壯之藥莖花序上，常在小蕊藥莖花序之上，萼片五或六枚，卵形，下面三分之二常連合為一體，花柱三，粗壯，無毛。果為黃色扁亞圓球形之堅果，幾全為杯狀之總苞所包被，直徑一至一公分半稀為二公分。鱗片鈍形，被濃密之灰色細毛，基部連合成環狀。

此種產於峨眉山之長老坪，華嚴頂，九老洞，洗象池，大乘寺海拔一千六百公尺至二千三百尺之森林中。七八月開花。次年果實始成熟。

此種分佈於湖北，四川，西康等三省。

此種為一美觀之常綠樹。在鄂西與川東皆極普遍。於峨眉山此種則多在山之腰。其葉背面初被灰色細毛，後轉變為光滑，及扁平亞圓球形之堅果幾全被於其鈍形鱗片之總苞內，故易與別種辨別。

圖解： 1. 小蕊花枝（原大）； 2. 嫩果枝（原大）； 3. 成熟之果序（原大）； 4. 小蕊花（放大十倍）。

圖版 171A. 峨眉全苞石櫟 新變種

此新變種不同於原種者，在其葉之兩面均無毛。

此新變種產於峨眉山之蓮花石及白雲寺二千公尺至二千五百公尺之森林中。樹高十五公尺，小蕊花黃綠色，大蕊花綠色。

圖解： 1. 花與果之枝（原大）； 2. 小蕊花（放大二十倍）。



117. *Lithocarpus cloistocarpa* Rehder et Wilson



117 A. *Lithocarpus cletistocalpa* Rehdar et Wilson
var. *omsionica* Fang

Plate 118.

LITHOCARPUS SPICATA (Smith) Rehder et Wilson.

Lithocarpus spicata, (Smith) Rehder et Wilson, in Sargent, Pl. Wilson III (1916), 207.—
Chun, Chin. Econ. Trees, (1921), 83, pl. 30.

Quercus spicata, Smith in Rees, Cyclop. XXIX (1819), No. 12.— D. Don, Prodr. Nepal. (1825), 56.— Wallich, Pl. As. Rar. I (1830), 40, t. 46.— Miquel, Fl. Ind. Batav. II (1855), 248; in Ann. Bot. Lugd.—Bat. I (1863-64), 106.— A. De Candolle, Prodr. XVI, pt. 2 (1864), 85.— Oudemans in Verh. Akad. Wetensch. Amsterdam, XI, No. 3 (1865), 2, t. 1, fig. 1-3 (Annot. Cupul. Jav.).— Brandis, Forest Pl. Ind. (1874), 489, Ind. Trees, (1905), 629, fig. 194.— Kurz, Forest Fl. Brit. Burma, II (1877), 466.— Wenzig in Engler, Jahrb. Bot. Gart. Berlin, IV (1886), 224.— Hooker f., Fl. Brit. Ind. V (1888), 609.— King in Ann. Bot. Gard. Calcutta, II (1889), 47, t. 41, fig. 1-2.— Franchet in Journ. de Bot. XIII (1895), 155, quoad specimen e Yunnan.— Skan in Journ. Linn. Soc. XXVI (1899), 521, quoad specimen Delavayi.— Koorders, Enkursjonsfl. Java, II (1912), 65.

Quercus elegans, Blume in Batav. Verhand. IX (1825), 208; Bijdr. (1825), 519; Fl. Jav. Cupulif. (1828-29), 21, t. 10.— Oudemans in Verh. Akad. Wetensch. Amsterdam, XI, No. 3, (1865), 2, t. 3, fig. 1-4 (Annot. Cupul. Jav.).

Quercus Arcaula, Hamilton ex D. Don, Prodr. Fl. Nepal. (1925), 56 (Pro synonym.); apud Sprengel, Syst. III (1826), 857.— Blume, Ann. Bot. Lugd.—Bat. I (1850), 290.

Quercus squamata Roxburgh, Fl. Ind. III (1832), 638.— Wight, Icon. Pl. Ind. Orient. I (1840), t. 213.

Passovia spicata, Osted in Kjoebenh. Vidensk. Meddel. XVIII (1866), 83.

Synadrys spicata, Koidzumi in Tokyo Bot. Mag. XXX (1916), 193.

Evergreen tree, usually 15, rarely up to 20 metres, high; bark brownish-grey or dark grey, slightly fissured; branchlets stout, green or purplish-green, glabrous, with conspicuous ovate lenticles; winter-buds terminal or axillary, conical, scales yellow, subacute, glabrescent. Leaves persistent, coriaceous, glabrous, elliptical-lanceolate or obovate-oblong, rarely oblanceolate, 14-20 cm. long, 4-7 cm. broad, acute or subacute to acuminate at the apex, cuneate or rarely broadly cuneate at the base, entire on the margin, upper surface deeply green, lower surface pale green or yellowish-green, midrib depressed above, elevated below, primary veins 8-10 pairs, impressed above, prominent below, petioles subcylindrical, glabrous. Flowers monoecious, staminate catkins terminal or axillary, grey-tomentose, usually branched, 4-10 cm. long, staminate flowers usually 3 enclosed by an acute bract and two lateral subacute bracts tomentose outside, perianth 5-6-lobed, lobes ovate, 1-1.5 mm. long-hirsute, stamens 10-12, slender, 2-3 mm. long, filaments glabrous, anthers yellow, subglobose, 2-celled, rudimentary ovary absent, pistillate catkins terminal on branchlets and usually above staminate catkins, grey-tomentose, 1-10 cm. long, pistillate flowers scattered on the catkin, usually 3 enclosed by an acute hirsute bract and two obtuse hirsute bractlets, perianth 6-lobed, hirsute, ovary 3-celled, ovules 2 in each cell, styles 3, stout, glabrous, stigma small. Fruits matured the second year, crowded on a stout, erect fruiting spike, 15 cm. in length, nut shiny, yellowish, conical or conical-ovoid, 2.5 cm. long, 2 cm. in diameter, mostly enclosed by the cupules while young, but only one-third to one-fifth of the lower part of nut embraced by the cupules when matured, cupules densely covered with concentric acute or obtuse bracts, densely grey-hirsute.

MOUNT OMEI: Chiu-lao-tung, alt. 1800 m., T. H. Tu, No. 7#2, in 1935; same locality. S. S. Chien, No. 6108, July 14 1937; same locality, H. C. Chow, No. 7976, August 1, 1938; same locality. C. W. Yao, No. 4881, in 1939; same locality, in woods, tree 15 metres high, leaves deep green above, light green below, staminate flowers green, fruit a nut with whitish green cupules, T. C. Lee, Nos. #220 & 3227, August 8, 1940; same locality, it forest, tree 7-9 metres high, staminate flowers yellow, T. C. Lee, No. 3380, August 44, 1940.

Distribution: Szechuan, Yunnan, Java, India.

The characters of this species are variable, but it is easily recognized by the glabrous leaves with primary veins distinctly conspicuous on the lower surface and by the large acorn which has only the lower part covered by the cupules when matured. Its near ally is *Lithocarpus cisticarpa* R. et W., that species, however, has leaves which are tomentulose on the lower surface and flat acorns

almost wholly covered by the cupules. The distribution of *L. spicata* is from India eastward to Sikiang, Yunnan and Szechuan. On Mount Omei it is rare. As this species has variable leafy characters the author considers that the variety *mupinensis* R. et W.* should be reduced to the type species.

W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting spike (natural size); 3, a staminate flower (enlarged 10 times); 4, the pistillate flowers (enlarged 10 times).

Lithocarpus megaphylla, Rehder et Wilson in Sargent, Pl. Wilson. III (1917), 208.

SZECHUAN: North-west of Mount Omei, Yun-king-hsien, Wa-wu-shan, C. W. Yao, No. 4067, in 1939.

Distribution: Szechuan.

This is a very distinct species and is easily distinguished from its near ally, *Lithobarpus spicata* Rehder et Wilson, by its oblong-elliptical leaves which are shortly acuminate at the apex, obliquely cuneate at the base, entire and revolute on the margin, and with ten pairs of parallel and curved primary veins distinctly elevated at the lower surface, and by the subangular branchlets with several rows of conspicuous ovate lenticels. It is confined to the type-locality.

W. P. Fang.

* Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 207.

圖版一百一十八

粗穗石櫟

殼斗科

常綠喬木常高十五公尺，稀達二十公尺；樹皮灰褐色或黑灰色，微現溝狀縱裂；小枝粗壯，綠色或紫綠色，無毛，具顯著之卵形皮孔；冬芽頂生或腋生，圓錐形，鱗片黃色，稍銳尖，光滑。葉宿存，革質，無毛，橢圓狀披針形或倒卵狀長圓形，稀為倒披針形，長十四至二十公分，寬四至七公分，先端銳尖或稍銳尖以至於漸尖，基部楔形或稀為廣楔形，全緣，葉表面深綠色，背面灰綠色或黃綠色，中脈在葉表面凹下，在葉背面隆起，側脈八至十二對，表面微凹下，背面顯著；葉柄呈亞圓柱形，無毛。大小蕊花同株，小蕊花成頂生或腋生之柔荑花序，被灰色柔毛，常分枝，長四至十公分，小蕊花常三枚包被於銳尖之大苞片及外面被細毛而稍銳尖之二側苞片中，花被五至六裂，裂片卵形，長一至一公分半，被細毛，小蕊十至十二本，纖細，長二至三公厘，花絲無毛，花藥黃色，呈亞圓球形，二室，不發育之子房缺如；大蕊花所成之柔荑花序頂生於小枝上且常在小蕊花柔荑花序之上，被灰色柔毛，長七至十公分，大蕊花疎生於花序上，常有二枚包被於被毛而銳尖之苞片及二鈍形被毛之小苞片中，花被六裂，被粗毛，子房三室，每室二胚珠，花柱三，粗壯，無毛，柱頭小。果兩年成熟，叢生於一粗壯直立長十五公分之果軸上，堅果亮黃色，圓錐形或圓錐卵圓形，長二公分半，直徑二公分，幼嫩時大多包被於殼斗中，但成熟時則堅果僅下部之三分之一至五分之一為總苞所包被，殼斗密被銳尖或鈍形密被灰色細毛之苞片。

此種產於鐵屑山之九老洞，一千八百公尺之森林中。七八月開花，次年果始成熟。

此種分佈於四川，雲南瓜哇及印度。

此種之特性時有變異，但其無毛之葉，背面具極顯而易見之側脈；及其大塊實着生於粗壯之果序上，且當成熟時僅基部被於殼斗，故易識別。其相近之種當為全苞石櫟，但該種葉背被疏疏之柔毛，其扁平之嫩實幾全包於殼斗。

粗穗石櫟之分佈，由印度東至西康四川雲南三省。在鐵山則稀罕。因此種葉之特性變異極大，故作者認為其變種實與粗穗石櫟應併於原種。

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

大葉石櫟

此種產於鐵屑山西北之幾經曉瓦屋山。

此種之分佈限於原產地。

此種因有長橢圓形之葉，先端短而漸尖，基部斜楔形，全緣而反捲，及具十對平行而彎曲之側脈，在葉背面隆起甚顯著，以及其楔形小枝，具數列顯著之卵形皮孔，極易與其相近之粗穗石櫟區別。



118. *Lithocarpus spicata* Rehder et Wilson.

Plate 119.

LITOCARPUS VIRIDIS (Schottky) Rehder et Wilson.

Fagaceae.

Lithocarpus viridis, (Schottky) Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 210.*Quercus polystachya*, Skan in Journ. Linn. Soc. XXVI (1899), 519, quoad specimina e Yunnan, No. 9636 excepto.*Passonia viridis*, Shottky in Engler, Bot. Jahrb. XLVII (1912), 668.*Synacdris viridis*, Koidzumi in Tokyo Bot. Mag. XXX (1916), 196.

Tree 18, rarely up to 20, metres high, bark grey or dark grey, fissured; branchlets terete, glabrous, those current year ones green, those more than one year old grey or dark grey, with conspicuous ovate lenticels; winter-buds ovoid, bracts imbricate, ovate or acute, grey-pubescent rarely glabrescent outside, glabrous inside. Leaves persistent, thick-coriaceous, glabrous, oblong-elliptic or lanceolate rarely oblong-ovate or oblong-obovate, 9-14 cm. long, 3-5.6 cm. broad, acute or acuminate with a short acumens at the apex, broadly cuneate or cuneate and decurrent at the base, entire and slightly revolute on the margin, upper surface shining green, lower surface pale green or yellowish green, midrib elevated on both surfaces, primary veins 13-16, obsolete above and just showing below; petioles 1.5-3 cm. long, terete, glabrous, usually stout at the base. Flowers monoecious; staminate flowers in pubescent erect compound catkins. 9-11 cm. in length; perianth 5- or 6-lobed, lobes triangular acute, 1-1.5 mm. long, white tomentulose outside, densely white tomentulose inside, stamens 10, yellow or purplish-yellow, 4 mm. long, usually curved, anthers subglobose, 2-celled, filaments slender, glabrous, ovary rudimentary; pistillate flowers 3 or 2, in a pubescent involucre on a pubescent, terminal, erect catkin, 5 to 10 cm. long, perianth mostly covered by the involucre, the apex of its lobes acute, pubescent, styles 3, stout, stigma on the apex. Fruit a conical nut, matured the second year, about one-half from its base enclosed by the cup-like involucre, scales obtuse, concentric, grey-pubescent.

MOUNT OMEI: She-tao-tui, alt. 1300 m., in thickets, small tree 8 metres high, *C. L. Sun*, No. 2064, May 18, 1940; Taping, alt. 1400 m., in forests, small tree 8 metres high, rare, *W. P. Fang*, No. 14655, May 18, 1940; Hsi-hsin-so, alt. 1600 m., in woods, tree 18 metres high, bark brown, flowers whitish, *C. L. Sun*, No. 2268, May 31, 1940; Yu-hsien-ssu, alt. 1771 m., in forest, small tree 8 metres high, *W. P. Fang*, No. 12862, August 2, 1938; Chiu-lao-tung, alt. 1876 m., tree 10 metres high, staminate flowers yellowish-white, *W. P. Fang*, No. 18864, June 4, 1941; west of Moun, Omei, Opien-hsien, Shaping, *W. C. Cheng*, No. 8105, in 1958; same locality, tree 20 metres high, *C. L. Sun*, No. 908 & Timber No. 18, August 1939; without precise locality, *C. W. Yao*, Nos. 3777, 4926 & 4973, in 1939; ? without precise locality, *H. C. Chow*, No. 9840.

SZECHUAN: Kuan-hsien, Mt. Tsing-cheng, *S. S. Chien*, Nos. 5619, 5680 & 5746, May to October 1938; Nanchuan-hsien, Mount of the Golden Buddha, *H. C. Yang*, No. 3156, in 1939.

Distribution: Szechuan and Yunnan.

This species is easily recognised by the glabrous thick-coriaceous leaves, by the pubescent inflorescence, and by the glabrous lenticellate branchlets. It is confined to Western Szechuan and Southern Yunnan. In Western Szechuan it is not uncommon and on Mount Omei it has been found occasionally from 1300 to 1800 metres above sea level *W. P. Fang*.

Fig. 1, a pistillate flowering branch (natural size); 2, a staminate flowering branch (natural size); 3, a fruiting spike (natural size); 4, pistillate flowers (enlarged 8 times); 5, a staminate flower (enlarged 10 times).

Lithocarpus Henry, (Seemen) Rehder et Wilson in Sargent, Pl. Wilson, III (1917), 209.

Quercus Henryi, Seemen in Englet, Bot. Jahrb. XXIII, Beibl. No. 67, (1897), 80; XXIX (1900), 294.

Quercus spicata, Franchet (non Smith) in Journ. de Bot. XIII (1899), 156, quoad specimen e Szechuan orientali.— Skan in Journ. Linn. Soc. XXVI (1899), 521, quoad specimen e Hupeh et Szechuan.

Pasania Henryi Schottky in Engler, Bot. Jahrb. XLVII (1912), 665.

MOUNT OMEI: without precise locality, H. C. Chow, No. 9340, in 1938; without precise locality, C. W. Yao, No. 5065, in 1939; south-west of Mount Omei, Opien-hsien, S. N. Hsu, No. 72, in 1937. Distribution: Hupeh, Szechuan and Yunnan.

This species hitherto has been reported only from Western Hupeh and Eastern Szechuan. It is, therefore, of great interest to record its occurrence on Mount Omei. It seems near to *Lithocarpus viridis* Rehder & Wilson, but may be distinguished by its thinner oblong-lanceolate leaves, with the veins forming a more or less distinct reticulation on the lower surface and by its depressed globose acorns with shallow saucer-shaped cups. W. P. Fang.

圖版一百一十九

綠葉石櫟

殼斗解

喬木高十五公尺，稀達二十公尺；樹皮灰色或深灰色，縱裂；小枝圓形而無毛，當年生枝綠色，多年生之枝灰色或深灰色，具顯著之卵形皮孔；冬芽卵圓形，苞片覆瓦狀排列，卵形或銳三角形，外面被灰色細毛，或近於光滑，內面無毛。葉宿存，厚革質，無毛，長圓狀橢圓形或披針形，稀為長卵形或長圓倒卵形，長九至十四公分，寬三至五公分半，先端銳尖或漸尖而有短尖尾，基部闊楔形或楔形且向下延伸，全緣而微反捲，表面亮綠色，背面灰綠色或黃綠色，中脈兩面隆起，側脈十三至十五對，在表面模糊，在背面顯著；葉柄長一公分半至三公分，圓形，無毛，基部粗壯。大小蕊花同樣：小蕊花生於長九至十一公分直立且被細毛之複葉葉花序上，花被五或六裂，裂片銳尖三角形，長一公厘至一公厘半，外面被少許之白色柔毛，內面被濃密之白色柔毛，小蕊十本，黃色或紫黃色，長四公厘，常彎曲，花藥呈亞圓球形，二室，花絲纖細而無毛，子房不發育；大蕊花二三枚生於一被細毛之總苞中，着生於一長五至十公分具細毛而頂生之直立葉花序，花被大都為總苞所蓋被，裂片先端銳尖，被細毛，花柱三，粗壯，柱頭生於頂端。果為圓錐形堅果，次年成熟，下半部為一碟狀總苞所包被，鱗片鐘形，集心排列，被灰色細毛。

此種產於峨眉山之蛇倒退，大坪，遇仙寺，九老洞及息心所，海拔一千四百公尺至一八百七十餘公尺之森林中。五六月開花，次年果始成熟。

此種分佈於四川及雲南兩省。

此種之特徵，在其無毛而厚革質之葉，被細毛之花序，及其光滑無毛而具皮孔之小枝。僅產於四川西部及雲南南部。在川西甚普遍。峨眉山則僅山之中部產之。

圖解：1. 大蕊花枝（原大）；2. 小蕊花枝（原大）；3. 果穗（原大）；4. 大蕊花（放大五倍）；5. 小蕊花（放大十倍）

亨氏石櫟

此種產於峨眉山及峨眉山西南之峨邊縣。

此種原產鄂西與川東，峨眉山近亦有此種之發現，實一極有趣味之事。此種似與綠葉石櫟相近。所不同者，在其薄而長闊披針形之葉，背面有網狀葉脈，以及其淺杯狀之殼斗具扁球形之鱗片。

栽眉植物圖志



119. *Lithocarpus viridis* (Schottky) Rehder et Wilson.

Plate 120.

LITHOCARPUS GLABRA (Thunberg) Nakai,
var. **SZECHUANICA** Fang, var. nov.

Fagaceae.

Lithocarpus glabra (Thunberg) Nakai in Cat. Sem. Hort. Tokyo (1916), 8; (1920), 34.—
Rehder in L. H. Bailey, Standard. Cycl. Hort. (1917), 3539.— Handel-Mazzetti, Symb. Sin. VII,
Lieferung 1 (1929), 31.

Quercus glabra, Thunberg, Fl. Jap. (1784), 175.

Quercus thalassica, Hance in Hooker, Kew Journ. I (1849), 170.

Pasania glabra, Oersted in Vidensk. Meddel. Nat. For. Kjoebenhaven, XVIII (1866),
83.— Rehder in L. H. Bailey Standard Cycl. Hort. (1917): 2479.

Pasania thalassica, Oersted in Vidensk. Meddel. Nat. For. Kjoebenhaven XVII (1866), 83.

Lithocarpus thalassica, Rehder in L. H. Bailey Standard Cycl. Hort. (1917), 3369.

This species is fairly common in Chekiang and Fukien provinces. Westward, it has been reported only as far as Hunan and eastern Kweichow.

Lithocarpus glabra (Thunberg) Nakai, var. **szechuanica** Fang, var. nov.

A type differt glandis cupulibus, fere inclusibis, bracteis triangulo-lanceolatis, disparatis.

Tree 7-8 metres high; bark dark grey, slightly fissured; branchlets slender, terete, those of the current year yellow-pubescent, those of more than one year old brownish-grey or dark brown, sparsely pubescent. Leaves persistent, coriaceous, obovate-oblong or elliptical-oblong, 7-9 cm. long, 2.5-3.6 cm. broad, acute with abruptly acumens on the apex, cuneate or broadly cuneate at the base, entire on the margin, shiny green and glabrous above, whitish green and grey-tomentulose below, midrib elevated on both surfaces, primary veins 9-11 pairs, obsolete above, conspicuous below; petioles cylindrical, 6-8 mm. long, pubescent. Unopened staminate flowers have been found in terminal or axillary erect yellowish-pubescent catkins, 6-9 cm. long; pistillate flowers not found. Fruit matured the second year, acorn depressed-ovoid, shiny yellow, glabrous, 1 cm. long, 1.2 cm. broad, about four-fifth enclosed by the cup, cups grey-pubescent, covered with triangular-lanceolate scales.

OMELHSIEN: second Mount Omei, at the side of forest, tree 7-8 metres high, leaves shiny green and glabrous above, light green and with hairs below, acorn green, cups with light scales, rare, *T. C. Lee*, No. 4751, August 30, 1930.

This variety differs from the type species in having an acorn that is almost enclosed by the cup, and in having scales which are triangular-lanceolate and scattered W. P. Fang.

Fig. a leafy, fruiting and staminate flowering branch (natural size).

圖版一百二十

川石櫟 新變種

殼斗櫟

石櫟

此種在浙江福建兩省甚普遍。西向分佈僅達湖南及貴州東部。

川石櫟 新變種

喬木高七至八公尺；樹皮黑灰色，微縱裂；小枝細圓，當年生枝被黃色細毛，多年生枝灰褐色或深褐色，被稀疏細毛。葉宿存，革質，倒卵狀長圓形或橢圓狀長圓形，長七至九公分，寬二公分半至三公分六，先端突尖具短尖尾，基部楔形或廣楔形，全緣，葉表面亮綠色，無毛，葉背面淡綠色而具稀疏之灰色細毛，中脈在兩面皆隆起，側脈九至十一對，在葉表面微顯，在葉背面顯明；葉柄圓柱形，長六至八公厘，被細毛。未開之小蕊花着生於頂生或腋生直立被黃色細毛之聚花序，長六至九公分，大蕊花未見。果實兩年成熟，櫟實為上下扁之卵圓形，亮黃色，無毛，長一公分，寬一公分二厘，約五分之四為殼斗所包被，殼斗被灰色細毛，被有三角狀披針形之鱗片。

此變種產於峨眉縣之二峨山。

此變種不同於石櫟之處，在其櫟實幾全包被於殼斗，及有三角狀披針形而散生之鱗片。

圖解：葉果與小蕊花之枝，(原大)。

峨眉植物圖志



120. *Lithocarpus glabra* (Thunberg) Nakai var. *Szechuanica* Fang.

Plate 121.

LITHOCARPUS BRUNNEA Rehder.

Fagaceae

Lithocarpus brunnea, Rehder in Journ. Arn. Arb. XI (1930), 156.*Pasania brunnea* Chnn in Hu & Chun, Icon. Pl. Sin. IV (1935), 2, t. 152.

Tree 15 rarely up to 20 metres high, bark dark grey, rough; branchlets slender, terete or slightly angulate, grey or blackish grey, sparsely pubescent; winter-buds axillary, small, globose. Leaves alternate, evergreen, coriaceous, elliptic-ovate or elliptic-oblong, 7-12 cm. long, 2.5-4.8 cm. broad, shortly acuminate or acute with abruptly narrowed acumen at the apex, broadly cuneate or cuneate, and usually decurrent at the base, entire on the margin, upper surface green, glabrous, lower surface pale grey, tomentulose, covered with very thin, grey indumentum, looks glabrous, midrib flat above, elevated below, primary veins 6-9 pairs, divergent at an angle of 30° from the midrib, obsolete above, elevated below, secondary veins obsolete; petioles 2-2.5 cm. long, flat above, covered with thin grey indumentum. Flowers unknown. Fruiting inflorescences slender, erect, 6-12 cm. long, rachis tomentulose, acorns cup-shaped, 6 mm. high, 8-10 mm. broad, usually 3 confluent, occasionally 1 or 2 of them obsolete, bracts densely imbricate, obtuse, yellow or greyish-pubescent, nuts (glands) ovoid-conical, 7-8 mm. long and broad, brown or yellow-brown, about one-third or one-half embraced by the acorn.

NORTHEAST OF MOUNT OMEI: Lo-shan-hsien (formerly known as *Kia-ling-fu*), Wu-yu-ssu alt. 480 m., in forests, tree 20 metres high, *W. P. Fang*, No. 2290 (type in Herb. Arn. Arb., cotype in Herb. Sci. Soc. China), July 28, 1928; same locality, in forests, tree 15 metres high, abundant, *W. P. Fang*, No. 12481, July 24, 1938.

This is a very distinct species which may be distinguished from all the known species of this genus by the small elliptic leaves which have a flat midrib above, and secondary veins that are obsolete on the lower surface, and by the small brown nuts, only one-third or one-half embraced by the cups and occurring in slender fruiting inflorescences. It is very rare and so far we have found it only at the type-locality. W. P. Fang

Fig. 1, a fruiting branch (natural size); 2 & 3, nuts (enlarged 2 times).

圖版一百二十一

褐果石櫟

別名：褐色櫟

殼斗科

喬木高十五公尺，稀達二十公尺；樹皮黑灰色，粗糙；小枝細圓或稍有棱，灰色或黑灰色，被有稀疏之細毛；冬芽腋生而小，呈圓球形。葉互生，常綠，革質，橢圓狀卵形或橢圓狀長形，長七至十二公分，寬二公分半至四公分八公厘，先端短尖或銳尖，並具突尖之尖尾，基部寬楔形或楔形而常向下延伸，全緣，表面綠色，無毛，背面蒼灰色，微被短絨毛而蓋以灰色極薄之毛狀附着物，狀以無毛，中脈在葉表面扁平，在背面隆起，側脈六至九對與中脈成三十度之角而分出，在葉表面不顯著，在葉背面隆起，小脈不顯著；葉柄長二至二公分半，上面扁平，蓋以薄而灰色之毛狀附着物。花之特性尚不知。果序細而圓，長六至十二公分，主軸微被細毛，殼斗杯狀，高五公厘，寬八至十公厘，常三枚合生，其中一或二枚常有不孕者，苞片排列成密覆瓦狀，鈍形，被黃色或淡灰色之毛。堅果為卵圓狀圓錐形，長七至八公厘，褐色或黃褐色，約有三分之一或二分之一為殼斗所包被。

產於峨眉山東北之樂山縣烏尤寺附近森林中。

本種易與此圖中已知之種類區別者，在其葉表面之中脈及背面之小脈不發育，小而褐色之堅果，僅有全長三分之一或二分之一部為杯狀殼斗所包被，且生於細果序上。此種分佈極窄，迄今吾人僅知其原產地產之。

圖解： 1. 果枝（原大）；2 及 3，堅果（放大二倍）。

崑崙植物圖志



121. *Lithocarpus brunnea* Rehder

原书缺页

原书缺页



122. *Quercus Engleriana* Seemen

Plate 123.

QUERCUS SERRATA Thunberg.

Fagaceae.

Quercus serrata Thunberg (non Siebold et Zuccarini), Fl. Jap. (1784), 176.— Siebold et Zuccarini in Abb. Akad. München, IV, pt. III (1846), 226 (Fl. Jap. Fam. Nat. II, 102).— Blume, Mus. Bot. Lugd.-Bat. I (1846-51), 236.— A. De Candolle, Prodr. XVI, pt. 2 (1864), 80.— Hance in Journ. Bot. XIII (1871), 8.— Brandis, Forest. Brit. Ind (1874), 458; Ind. Trees (1806), 626, fig. 192.— Franchet et Savatier, Enum. Pl. Jap. I (1875), 447.— Franchet in mem. Soc. Sci. Nat. Cherbourg, XXIV (1884), 254.— Debeaux in Act. Soc. Linn. Bordenax, XXXI (1876), 362 (Fl. Tchefou, 126).— Bretschneider, Chinese Silkworm Trees, (1858), 447.— Forbes in Journ. Bot. XXII (1884), 60.— Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII (1884), 85 (Pl. David, I, 275); in Mem. Soc. Sci. Nat. Cherbourg, XXIV (1884), 254.— Wenzig in Jahrb. Bot. Gart. Berlin, IV (1886), 221.— Hooker, 1, Fl. Brit. Ind. V (1886), 601.— Kanitz in Noven. Gynit. Ered. Szechenyi, II (1881), 642. (Pl. Enum. 57); in Wiss. Ergeb. Reise Szechenyi, II (1891), 731.— Shirai in Tokyo Bot. Mag. IX (1895), 412, t. 7, fig. 9.— Faber in Denkschr. Entwickel. Kiantschou (1898), 28.— Shan in Journ. Linn. Soc. Bot. XXVI (1898), 820.— Shirasawa, Icon. Ess. For. Jap. I (1900), t. 28, fig. 1-12.— Komarov in Act. Hort. Petrop. XXII (1903), 74 (Pl. Mansh. II).— Seemen in Engler, Bot. Jahrb. XXXIV, beibl. LXXV Bot. (1904), 28.— Pampanini in Nuov. Giorn. Bot. Ital. n. ser. XVII (1910), 252.— Nakai in Journ. Coll. Sci. Tokyo, XXXI (1911), 248 (Fl. Kor. II).— Dunn et Tutcher in Kew Bull. Misc. Inform. a. ser. X (1912), 263 (Fl. Kwangtung & Hongk.).— Matsumura, Ind. Pl. Jap. II, pt. 2 (1913), 20.— Leveille, Fl. Kony-Tcheou (1914), 128.— Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 217.— Loesener in Bot. Centralbl. Beih. XXXVII, abt. II (1919), 108.— Bailey, Gent. Herb. I (1920), 18.— Cowdry in Journ. N. China Branch. R. As. Soc. LIII (1922), 174 (Pl. Peitsho).— Hens in Journ. N. China Branch. R. As. Soc. LIII (1922), 114; Liste Ess. Lign. Honan, (1922) 24.— Rehder in Journ. Arn. Arb. IV (1923), 161; Manual Cult. Trees & Shrubs (1927), 182.

Quercus glandulifera Blume, Mus. Bot. Lugd.-Bat. I (1850), 295.— Miquel in Ann. Mus. Lugd.-Bat. I (1863-64), 104.— A. De Candolle, Prodr. XVI pt. 2 (1864), 40.— Moore in Journ. Bot. XIII (1875), 231.— Franchet et Savatier, Enum. Pl. Jap. I (1876), 447.— Forbes in Journ. Bot. XXII (1884), 86.— Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII (1884), 84 (Pl. David, I, 274).— Wenzig in Jahrb. Bot. Gart. Berlin, IV (1886), 220.— Sargent in Garden and Forest, VI (1893), 385; Forest Pl. Jap. (1894), 68.— Shirai in Tokyo Bot. Mag. IX (1895), 410, t. 7, fig. 1.— Sken in Journ. Linn. Soc. Bot. XXVI (1898), 514.— Seemen in Engler Bot. Jahrb. XXIX (1900), 209.— Shirasawa, Icon. Ess. For. Jap. I (1900), 60, t. 26, fig. 13-24.— Pampanini in Nuov. Giorn. Bot. Ital. n. ser. XVII (1910), 251.— Nakai in Journ. Coll. Sci. Tokyo, XXXI (1911), 207 (Pl. For. II); Tokyo Bot. Mag. XXIX (1916), 59.— Matsumura, Ind. Pl. Jap. II, pt. 2 (1913), 27.— Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 212.— Loesener in Bot. Jahrb. Beih. Bot. Centralbl. XXXVII, abt. II (1919), 109.— Bailey, Gent. Herb. I (1920), 18.— Hens in Journ. N. China Branch. R. As. Soc. LIII (1922), 114; Liste Ess. Lign. Honan, (1922), 24.— Rehder, Manual Cult. Trees & Shrubs (1927), 182.

Deciduous tree usually 3 to 8 metres high, rarely up to 25 metres high; bark grey or dark grey, fissured and peeling off as thin flakes; branchlets slender, those of the current year brownish purple, pubescent at first and soon becoming glabrescent, those more than one year old grey, with conspicuous small rounded lenticels; winter buds terminal or axillary, conical or conical-ovoid, 5-7 mm. long, 2-4 mm. in diameter, scales brown, numerous, imbricate, ovate, sparsely puberulous outside, ciliate on the margin. Leaves alternate, coriaceous, obovate-oblong, oblanceolate or oblong-obovate, 11-18 cm. long, 4-8 cm. broad, acuminate on the apex, cuneate or broadly cuneate at the base, wavy on the margin with appressed gland-tipped teeth, upper surface bright green, pubescent while young and changing to glabrous later, lower surface pale green with appressed silky-pubescent while young and changing to glabrous or slightly glaucous later, midrib conspicuous above, prominent below, primary veins 10-14 pairs, ending in teeth, slightly conspicuous above, distinct below; petioles 1-3 cm. long, terete, slightly dilated at base, silky-pubescent while young and changing to glabrous later. Flowers unisexual, monoecious, opening at the same time as leaves, staminate flowers in pendulous pubescent slender catkins 12-15 cm. long, with 2 purplish brown oblanceolate bracts 1.2 cm. long, from the lower part of one-year old branchlets, perianth usually 6-lobed, lobes ovate, densely greyish tomentose outside, stamens 6 to 8, exserted, anthers purple, 2-celled, filaments slender, glabrous. Pistillate flowers in the axil of leaf from upper part of young branchlet, usually 2, rarely 1 or 3 to 5 on an erect, pubescent peduncle 8-15 mm. long, with 2 purplish brown oblanceolate bracts 2-10 cm. long, greyish pubescent on the outer surface, perianth-lobes densely greyish-pubescent outside, ovary inferior, 3-celled, styles 3, spreading. Fruit a brownish oblong-ovoid acorn, pubescent near the apex, 20-24 mm. long, 8-10 mm. in diameter, with persistent styles, opening in one season, usually 1 rarely 2 or 3 on a stout stalk 1-3 cm. long, cupules shallow, covered densely outside with depressed small greyish pubescent triangular scales, enclosed about one-fifth to one-fourth of the acorn.

MOUNT OMEI: near Pao-ning-sen, alt. 450 m., small tree 4 metres high, *W. P. Fung*, No. 13162, May 18, 1939; same locality, small tree 8 metres high, staminate flowers greenish or greenish yellow in catkins, pistillate flowers with 2 purplish bracts and reddish-brown or purple styles, 4 or 5 on a short stalk, *T. C. Lee*, Nos. 5344B, 5345, 5347, 5348B, 5349B & 5350B, March 27 to April 1, 1940; same locality, small tree 5 metres high, young leaves silky-pubescent, staminate flowers in yellowish green catkins, pistillate flowers reddish-brown, 4 or 5 on a short stalk, *W. P. Fung*, Nos. 13982 & 13983, April 3, 1940; same locality, tree 4 metres high, *T. C. Lee*, No. 4783, September 2, 1940.

same locality, small tree 8 metres high, flowers yellowish, *W. P. Fang*, No. 16110, April 3, 1941; same locality, small tree 8 metres high, bark grey, staminate flowers in catkins, *C. L. Chow*, Nos. 5651, 5664, 5702, 5709, 5756, 5761 & 5800, March 30 to April 7, 1942; Wan-kan, on slopes, tree 20 metres high, common, *W. P. Fang*, No. 14543, June 16 1940; Wau-hsing-chuang, alt. 470 m., *H. C. Chow*, Nos. 8701, 8702, 8704 & 8706, October 1938; Mo-erh-shih, alt. 470 m., shrub 3 metres high, *W. P. Fang*, No. 17383, July 24 1940; Pao-kuo-ssu, alt. 800 m., in forests, small tree 8 metres high, leaves glaucous beneath, *W. P. Fang*, No. 14632, July 2, 1940; Fu-lu-ssu, alt. 600 m., small tree 5 metres high, fruits a brownish acorn, *W. P. Fang*, No. 15487, November 20, 1940; Ching-yin-ko, alt. 900 m., small tree 8 metres high, *T. C. Lee*, No. 3012, July 29, 1940; Ta-o-ssu, alt. 1100 m., in thickets, shrub 4 metres high, *C. L. Sun*, No. 20, May, 2, 1939; same locality, in forests, small tree 8 metres high, *T. C. Lee*, 3041, July 29, 1940; Kuang-lu-ssu, alt. 1000 m., *W. P. Fang*, No. 17439, July 28, 1941; Chang-lao-ping, alt. 1600 m., in forests, small tree 5 metres high, *C. L. Sun*, No. 1918, May 8, 1940; north west of Mount Omel, Yung-king-hsien, in thickets, shrub 4 metres high, *C. L. Sun*, No. 1259, September 12, 1939; same locality, in thickets, small tree 5 metres high, *C. L. Sun*, No. 1354, September 18, 1939; southwest of Mount Opian-hsien, *W. P. Fang*, No. 5977, in 1936; same locality, in forest, small tree 4 metres high, *C. L. Sun*, No. 999, August 16, 1939; without precise locality, *C. W. Yao*, Nos. 2900, 3581, 4590, 5035, 5069 & 5170, from 1938 to 1939; without precise locality, *H. C. Chow*, No. 9519, in 1938.

CHEKIANG: Tien-mu-shan, *S. S. Chien*, No. 567, August 1929; Sui-chang-hsien, *S. Chen*, Nos. 1174 & 1214, April 29, 1933; Sui-an-hsien, *S. Chen*, No. 2403, October 26, 1933.

SZECHUAN: Kuan-hsien, *S. S. Chien*, Nos. 5674, 5718 & 5741, April to October 1936; Chengtu, tree 12 metres high, *W. P. Fang*, No. 13344, April 11, 1939.

SIKANG: Tien-chuan-hsien, on slopes, tree 8 metres high, *F. G. Tai & C. M. Teng*, No. 4173, July 16, 1936; same locality, alt. 2100 m., on slopes, small tree 4 metres high, *F. G. Tai & C. M. Teng*, No. 5126, September 12, 1939.

Distribution: Shantung, Honan, Chekiang, Kiangsu, Hupeh, Hunan, Szechuan, Kweichow, Yunnan; Corea and Japan.

This is a very variable species and can be distinguished from other Chinese species only by the leaves with their glandular-tipped teeth, which are usually forward and slightly recurved. It occurs very commonly known as "Ching-kong" and is used commonly as fire-wood in various provinces of China..... *W. P. Fang*.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a pistillate flower (enlarged 20 times); 4, a front-view of staminate flower (enlarged 20 times); 5, a back-view of staminate flower (enlarged 20 times).

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枹樹 俗名：青剛樹。

殼斗科

落葉喬木高三至八公尺，稀達二十五公尺；樹皮灰色或深灰色，縱裂而成薄片狀脫落；小枝纖細，當年生枝葉褐色，初被細毛，旋即變為光滑無毛，多年生之枝灰色，具顯著之小圓形皮孔；冬芽頂生成腋生，圓錐形或圓錐狀卵圓形，長五至七公分，直徑二至四公分，鱗片多數成褐色，卵狀，覆瓦狀排列，外面具稀疏之絨毛，邊緣具纖毛。葉互生，革質，倒卵狀長圓形，倒披針形或長圓倒卵形，長十一至十八公分，寬四至八公分，先端漸尖，基部楔形或廣楔形，邊緣波狀，具密接之腺頭鋸齒，表面亮綠色，幼嫩時被絨毛，旋即變為無毛，背面灰綠色，幼時密被絲狀絨毛，以後變為無毛或僅被短絨，中肋在葉表面顯明，在葉背面突出，側脈十至十四對，未端止於齒尖，在葉表面微顯，在葉背面較明顯；葉柄圓形，長一至三分，基部微擴張，幼嫩時被絲狀柔毛，其後變為無毛。花單性，大小蕊花同株，與葉同時發出，小蕊花生於長十二至十五公分被毛而下垂之葉腋花序上，具二紫褐色倒披針形之苞片長十二公分，由多年生小枝之下部發出，花被常六裂，裂片卵形，外面被濃密之灰色絨毛，小蕊六至八本，伸出花被外，花藥紫色，二室，花絲細而無毛，大蕊花由幼枝上部之葉腋間發出，常二枚稀一或三五枚生於直立被毛之花梗上，長八至十五公分，苞片二枚，紫褐色倒披針形，長八至十公分，外面被灰色絨毛，花被裂片之外面被濃密之灰色絨毛，子房下位，三室，花柱三，向外平伸。果為褐色長卵圓形之橡實，近先端被毛，長二十至二十四公分，直徑八至十公分，具宿存之花柱，一季內成熟，常一枚稀二或三枚生於長一至二分之粗壯果梗上，殼斗淺形，外面密被以具灰色毛或三角形之小鱗片，包被橡實約五分之一至四分之一。

此種產於峨眉山之山麓，自海拔四百五十公尺至一千公尺左右，如保寧寺，報國寺及大德寺等處，則隨處皆是。三四月開花，九月果可成熟。

此種分佈於山東，河南，浙江，江蘇，湖北，湖南，四川，貴州，雲南等省。日本及朝鮮亦產之。

此種之變異極大，其與此間中其他中國種之區別，僅以其葉具腺頭之鋸齒，齒常向前而稍反捲。此種通稱為“青剛”各省皆用作燃料。

圖解：1, 花枝（原大）；2, 果枝（原大）；3, 大蕊花（放大二十倍）；4, 小蕊花之正面觀（放大二十倍）；5, 小蕊花之背面觀（放大二十倍）。



123. *Quercus serrata* Thunberg

Plate 124.

QUERCUS ACUTISSIMA Carruthers.

Fagaceae.

Quercus acutissima Carruthers in Journ. Linn. Soc. Bot. VI(1862), 33.— Nakai in Tokyo Bot. Mag. XXXIX (1915), 57.— Handel-Mazzetti, Symb. Sin. VII, Lieferung 1 (1920), 34.

Quercus serrata Siebold et Zuccarini (non Thunberg) in Abh. Akad. Muench. IV, pt. 3 (1846) 226 (Fl. Jap. Fam. Nat. II, 102)

Deciduous tree usually 10 metres rarely up to 20 metres high, bark grey or dark grey, fissured; branchlets slender, terete, those of the current-year ones grey-pubescent, with conspicuous scale-scars at the base; those more than one year old yellowish-green or yellowish-grey, glabrous or glabrescent, with sparsely ovate lenticels; winter-buds terminal or axillary, conical, scales brownish-ovate, imbricate, sparsely grey-pubescent outside, glabrous inside. Leaves lanceolate or oblong-lanceolate, 10-16 cm. long, 3.5-6 cm. broad, acuminate or caudate-acuminate on the apex, broadly cuneate or subrotund at the base, remotely serrate with appressed bristly teeth, upper surface shiny deep green, greenish tomentose while young and changing to glabrous later, lower surface yellowish green, pubescent, especially on the veins, while young, and changing to glabrous as the leaves develop; midrib conspicuous above, prominent below, primary veins 10-16 pairs, ending in the teeth, parallel, just showing above, conspicuous below; petioles slender, 1.5-3 cm. long, grey-pubescent while young, glabrous when matured. Flowers unisexual, monoecious, appearing with the developing leaves, staminate flowers yellowish green, in pendulous, pubescent slender catkins 6-9, rarely to 12, cm. long, 4 or 6 from the base of young branchlets or from the leafless old branchlets, perianth yellowish-green, 5-lobed, lobes ovate, 1 mm. long, grey-pubescent outside near the apex, stamens 4 or 8, longer than the perianth-lobes and exserted, anthers yellow or purplish-yellow, subglobose, 2-celled, filaments slender, glabrous, pistillate flowers 1-3 on a short stalk, in the axils of leaves from old branchlets, bracts densely pubescent, ovary inferior, 3-celled, styles 3-branched near the apex. Fruit a sessile, brownish, subglobose acorn, 20-25 mm. long, 15-18 mm. in diameter, matured the second year, about two-thirds enclosed by the cupules, which are covered outside with recurved or straight grey-pubescent, awl-shaped scales.

MOUNT OMEI: Wan-hsing-chuang, alt. 450 m., *H. C. Chow*, Nos. 8490, 8771 & 9073, October 1938; same locality, at side of rice-field, tree 12 metres high, young leaves yellowish green, pubescent on both surfaces, staminate flowers yellowish-green, in catkins, pistillate flowers solitary, with purple bracts and with yellowish styles, *T. C. Lee*, Nos. 5341A & 5342A, March 27, 1940; Pao-kuo-ssu, alt. 480 m., tree 10 metres high, young leaves yellowish-green, *W. P. Fang*, No. 13923, March 12, 1940; Lung-men tung, alt. 546 m., tree 20 metres high, staminate flowers yellowish-green, *C. L. Chow*, 5572, March 29, 1942; without precise locality, *C. W. Yao*, No. 5233, in 1939.

SZECHUAN: Chengtu, in forests, tree 14 metres high, flowers pale yellow, *S. S. Chien*, No. 5171, April 8, 1936; same locality, in forests, tree 10 metres high, *S. S. Chien*, No. 5324, May 16, 1936; same locality, Hua-hsi-pa, near a tomb, tree 8 metres high, staminate flowers yellowish, rare, *W. P. Fang*, No. 13245 & 13284, March 30, 1939; Opien-hsien, *S. N. Hsu*, No. 7, in 1937.

CHEKIANG: Tung-lu-hsien, *S. Chen*, No. 1895, August 29, 1933.

KIANGSU: near Pao-hua-shan, *W. C. Cheng*, No. 5911, October 6, 1934.

Distribution: Liaoning, Shantung, Kansu, Chekiang, Kiangsu, Anhwei, Kiangsi, Hupeh, Hunan, Szechuan, Kweichow and Kwangtung.

This species is very widely distributed in various provinces of China, but this is the first time it has been found on Mount Omei, where it was discovered at the foot of the mountain. It is near *Quercus variabilis* Blume, but differs distinctly from that species in possessing leaves which are glabrous on the lower surfaces. W. P. Fang.

Fig. 1, a fruiting branch (natural size); 2, a flowering branch (natural size); 3, a side-view of staminate flower (enlarged 10 times); 4, a front-view of staminate flower (enlarged 10 times); 5, an inflorescence of pistillate flowers (enlarged 15 times); 6, a pistillate flower (enlarged 20 times); 7, a fruit (natural size); 8, a portion of leaf to show the venation (enlarged 1.5 times);

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麻櫟

別名：樺樹，柞樹

殼斗科

落葉喬木高十公尺，稀達二十公尺，樹皮灰色或深灰色，縱裂，小枝細圓，當年生枝被灰色細毛，基部有顯著之鱗芽痕跡，多年生枝黃綠色或成黃色，光滑無毛或近於無毛，具稀疏之卵形皮孔；冬芽頂生或腋生，圓錐形，鱗片淡褐色，卵形，覆瓦狀排列，外面被疏稀之灰色細毛，內面無毛。葉披針形或長圓披針形，長十至十六公分，寬三分半至六公分，先端漸尖或尾狀漸尖，基部廣楔形或微圓，鋸齒稀疏，齒尖銳利密接向前，表面深亮綠色，幼時被淡綠色柔毛，漸長則毛落而光滑，背面黃綠色，幼嫩時有毛，脈上尤多，葉漸長大即毛落而成光滑狀。中脈在葉表面顯明，在葉背面更顯著；葉柄細，長一分半至三分，幼時被灰色細毛，長成時毛落而光滑。花單性，三月開放，大小蕊花同株，與葉同時發出，小蕊花黃綠色，生於下垂被毛之細葉黃花序上，花序長六至九公分，稀達十二公分，有四或六花序同由幼枝基部或無葉之老枝上發出；花被黃綠色，五裂，裂片卵形，長一公厘，表面之先端被灰色細毛，小蕊四或五本，較花被裂片為長，且伸出花被之外，花藥黃色或紫黃色，呈亞圓球形，二室，花絲細而無毛，大蕊花一或三枝生於短梗上，自老枝之葉腋間生出，苞片被濃密細毛，子房下位，三室，花柱近頂部分成三枝。果無梗，為淡褐色亞圓球形之橡實，長二十至二十五公厘，直徑十五至十八公厘，兩年成熟，全長三分之二為殼斗所包被，外殼以反捲或直長之錐形鱗片，被灰色細毛。

本種產於峨眉山麓之萬行莊，報國寺，龍門洞海拔四五百公尺之森林中。

本種分佈於遼寧，山東，甘肅，浙江，江蘇，安徽，江西，湖北，湖南，四川，貴州及廣東等省。

此種在全國各省分佈極廣，在峨眉山之發見，尚為首次，多產於峨眉山麓。此種與檜及柞甚相近，所不同者，在其葉之背面無毛。

- 圖解： 1. 果枝（原大）； 2. 花枝（原大）； 3. 小蕊花之側面（放大十倍）；
4. 小蕊花之正面（放大十倍）； 5. 大蕊花之花序（放大十五倍）； 6. 大蕊花（放大二十倍）；
7. 果實（原大）； 8. 葉之一部以示其脈（放大一倍半）。

峨眉植物圖志



124. *Quercus acutissima* Carruthers

QUERCUS VARIABILIS Blume.

Fagaceae.

Quercus variabilis Blume, Mus. Bot. Lugd.-Bat. I (1850), 297. A. De Candolle, Prodr. XVI, pt. 2 (1864), 60. Sargent in Carden & Forest, VI (1893), 335; Forest Fl. Japan (1894), 68. Shirai in Tokyo Bot. Mag. IX (1896), 413, t. 7, fig. 3. Shirasawa, Icon. Ess. For. Jap. I (1900), 54, t. 28, fig. 1-11. Matsumura & Hayata in Journ. Coll. Sci. Tokyo, XXII (1906), 394 (Enum. Pl. Formoss.). Nakai in Journ. Coll. Sci. Tokyo, XXXI (1911), 208 (Fl. Kor. II). Leveille, Fl. Kouy-Tcheou, (1914), 129. Rehder & Wilson in Sargent, Pl. Wilson. III (1916), 219. Bailey, Gent. Herb. I (1920), 18. Hers in Journ. N. China Roy. As. Soc. LIII (1922), 114; Liste Ess. Lign. Honan (1922), 24. Rehder in Journ. Arn. Arb. IV (1923), 161 (Lign. Pl. North. China). Handel-Mazzetti, Symb. Sin. VII, Lieferung I (1929), 31.

Quercus chinensis Bunge (non Abel) in Mem. Div. Sav. Acad. Sci. St. Petersburg. II (1933), 135 (Enum. Pl. Chin. Bor. 61). Turczaninow in Bull. Soc. Nat. Moscou, X, No. VII (1837), 157. Maximowicz in Mem. Div. Sav. Acad. Sci. St. Petersburg. IX (1869), 477 (Ind. Fl. Pekin). Bretschneider, Chinese Silkworm Trees, (1861), 5.

Quercus serrata Caruthers (non Thunberg) in Journ. Linn. Soc. VI (1862), 32. Schottky in Engler, Bot. Jahrb. XLVII (1912), 638. Nakai in Tokyo Bot. Mag. XXIX (1915), 57. Koizumi in Tokyo Bot. Mag. XXX (1916), 205.

Quercus Bungeana Forbes in Journ. Bot. XXII (1884), 83. Franchet in Mem. Soc. Sci. Nat. Cherbourg, XXIV (1884), 254; in Nouv. Arch. Mus. Paris, ser. 2, VII (1884), 85 (Pl. David. I. 275). in Journ. de Bot. XIII (1899), 164. Skan in Journ. Linn. Soc. XXVI (1899), 508. Kanits in Noven. Gyujt. Ered. Szechenyi, II (1891), 841 (Pl. Enum. 58); in Wiss. Ergeb. Reise Szechanyi, II (1891), 731. Seem in Engler, Bot. Jahrb. XXIX (1900), 291. Leveille, Fl. Kouy-Tcheou (1914), 127. Loesener in Engler, Bot. Centralbl. Belg. XXXVII, abt. II (1919), 103.

Quercus serrata, var. *a chinensis* Wenzig in Jahrb. Bot. Gart. Berlin, IV (1886), 221. Matsumura, Ind. Pl. Jap. II, pt. 2, (1913), 29.

Quercus Bombyx tomentosa Hort. ex Kew Handlist, (1894), 201 (pro synon. *Q. serrata* Thunberg).

Deciduous tree usually 10 rarely up to 25 metres high, bark greyish, cork deeply fissured; branchlets stout, with numerous lenticels and with conspicuous scars of deciduous scales at the ends of each year growth, those of the current year yellowish grey, sparsely tomentose while young and changing to glabrous later, those of more than one year old brownish grey or dark brown, glabrous; winter-buds terminal or axillary, conical, scales brownish, ovate, imbricate, sparsely pubescent outside, glabrous inside, ciliate on the margin, bracts linear or oblanceolate, greyish tomentose outside, glabrous inside. Leaves coriaceous, oblong, oblong-lanceolate or oblong-ovate, 9-16 cm. long, 3-5.5 cm. broad, acuminate on the apex, broadly cuneate or rotund at the base, crenately serrate on the margin with sharp appressed bristles, upper surface at first puberulous, then deep green, glabrous, lower surface whitish tomentose, midrib conspicuous above, prominent below, lateral veins 17-19, parallel, ending in the teeth, just showing above, conspicuous below; petioles 3-4 cm. long, terete, at first yellowish pubescent and then changing to glabrous. Flowers unisexual, monoecious, staminate flowers in pendulous, pubescent slender spike, 8-12 cm. in length, from lower part of young branchlets, perianth 4-lobed, rarely 2-3-lobed, lobes ovate, 2 mm. long, whitish or grey tomentose on the outer surface, especially near the apex, stamens 6 rarely more, filaments short, anthers subglobose, 2-celled, pistillate flowers solitary, in axil of leaf from young branchlets, ovary 3-celled, styles 3, short, stigmatic on the inner side. Fruit a sessile, subovoid brown nut, 2.5 cm. long, 2 cm. in diameter, ripening the second year, about one-third to one-half enclosed by the cupule covered outside with grey-pubescent, awl-shaped or linear, recurved scales.

MOUNT OMEI: in the vicinity of Wan-hsing-chuang, alt. 470 m., on slopes, tree 10 metres high, staminate flowers green in long pendulous catkins, T. C. Lee, No. 5343 B, March 27, 1940; near Pao-kuo-ssu, alt. 800 m., at roadside, tree about 10 metres high, young leaves green and sparsely pubescent above and whitish tomentose beneath, staminate flowers greenish, in pendulous catkins, W. P. Fang, No. 13922, March 19, 1940; southwest of Mount Omei, Oplen-hsten, Lung-men-ku, W. C. Cheng, No. 6315, July 1936.

This species is near *Quercus acutissima* Carruthers, but it is easily distinguished from that species by the whitish tomentose lower surface of the leaf. Its occurrence is very common in China so far as it has been reported from Hopeh, Shansi, Shensi, Kansu, Shantung, Honan, Chekiang, Hupeh, Szechuan, Hunan, Kweichow and Yunnan..... W. P. Fang.

Fig. 1, a fruiting branch (natural size); 2, a flowering branch (natural size); 3, aside-view of staminate flower (enlarged 10 times); 4, a back-view of a staminate flower (enlarged 10 times); 5, a front view of staminate flower (enlarged 10 times); 6, a pistillate flower (enlarged 10 times); 7, a portion of leaf to show the hairs at the lower surface (enlarged 5 times).

圖版一百二十五

栓皮櫟

別名：厚皮櫟，軟木櫟。

殼斗科

落葉喬木高十公尺，稀達二十五公尺；樹皮淡灰色，木栓深縱裂；小枝粗壯，具多數皮孔及顯著之芽鱗痕跡，當年生枝灰黃色，幼時被稀疏之細毛，後即變為無毛，多年生枝灰褐色或暗褐色，無毛；冬芽頂生或腋生，圓錐形，鱗片淡褐色，卵形，覆瓦狀排列，外面被稀疏之細毛，內面無毛，邊緣具纖毛，苞片線形或倒披針形，外面被淡灰色之柔毛，內面無毛。葉革質，長圓形，長圓披針形或長圓卵形，長九至十六公分，寬三分至五公分半，先端漸尖，基部廣楔形或圓形，邊緣之鋸齒具密接銳利之刺狀尖齒，葉之表面幼時微被細毛，旋即變為深綠色，無毛，背面被淡白色淺毛，中脈在葉表面顯明，在葉背面則突出，側脈十七至十九對，平行，末端止於齒尖，在葉表面微露，在葉背面則顯明；葉柄長三至四公分，圓形，初被黃色細毛，旋即脫落。花單性，大小蕊花同株，小蕊花生於細而被毛且下垂之穗狀花序上，長八至十二公分，由幼枝下部生出，花被四裂，稀二至三裂，裂片卵形，長二公厘，外面被淡白色或灰色之細毛，在近先端處為尤多，小蕊五本，稀更多，花絲短，花藥亞圓球形，二室，大蕊花單生，由幼枝之葉腋間發出，子房三室，花柱三，形短，柱頭生於花柱內側。果為無柄亞卵形之褐色堅果，長二公分半，直徑二公分，次年成熟，全長約三分之一至二分之一被殼斗所包被；殼斗外面具灰色細毛之錐形或線形而反捲之鱗片。

此種產於峨眉山之萬行莊及報國寺等處，海拔四五百公尺左右之路旁或森林中。峨眉山西南之峨邊縣亦產之。三四月開花，次年果實始成熟。

此種與麻櫟極相近，所不同者，在其葉之背面被淡白色之柔毛。

此種分佈於河北，山西，陝西，甘肅，山東，河南，浙江，湖北，四川，湖南，貴州及雲南等省。

圖解： 1. 果枝（原大）； 2. 花枝（原大）； 3. 小蕊花之側面（放大十倍）； 4. 小蕊花之背面（放大十倍）； 5. 小蕊花之正面（放大十倍）； 6. 大蕊花（放大十倍）； 7. 葉之一部放大以顯示其背面之毛（放大五倍）。



125. *Quercus variabilis* Blume

Plate 126.

QUERCUS GLAUCA Thunberg form **Gracilis** Rehder.

Fagaceae.

Quercus glauca Thunberg, Fl. Jap. (1784), 176. - Banks, Icon. Kaempfer. (1791), t. 17. Siebold et Zuccarini in Abh. Akad. Munch. IV, pt. 3, (1846), 226 (Fl. Jap. Fam. Nat. II, 102). - Blume, Mus. Bot. Lugd.-Bat. I (1850), 802. - Miquel in Ann. Mus. Lugd.-Bat. I (1863-64), 115. - A. De Candolle, Prodr. XVI, pt. 2 (1864), 100. - Masters in Gard. Chron. n. ser. I (1874), 632. - Hance in Journ. Bot. XIII (1874), 363; XX (1882), 294. - Franchet et Savatier, Enum. Pl. Jap. I (1875), 448. - Forbes in Journ. Bot. XXII (1884), 86. - Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII (1884), 86 (Pl. David. I, 276); in Journ. de Bot. XIII (1889), 159. - Wenzig in Jahrb. Bot. Gart. Berlin, IV, (1886), 233. - Hooker f., Fl. Brit. Ind. V (1888), 604. - King in Ann. Bot. Gard. Calcutta, II (1888), 29, t. 23. - Skan in Journ. Linn. Soc. XXVI (1889), 516. - Seemen in Engler, Bot. Jahrb. XXIX (1900), 293. - Shirasawa, Icon. Ess. For. Jap. I (1900), 66, t. 30, fig. 13-24. - Matsumura et Hayata in Journ. Coll. Sci. Tokyo, XXII (1906), 392 (Enum. Pl. Formos.). - Matsumura, Ind. Pl. Jap. II, pt. 2 (1912), 27. - Levellie in Fl. Kouy-Tcheou (1914), 128. - Nakai in Tokyo Bot. Mag. XXIX (1916), 61. - Rehder et Wilson in Sargent, Pl. Wilson, III (1916), 226. - Handel-Mazzetti, Symb. Sin. VII, Lieferang 1 (1929), 60.

Quercus annulata Smith in Rees, Cyclop. XXIX (1819), No. 22. - Miquel in Ann. Mus. Lugd.-Bat. I (1863-64), 114. - A. De Candolle, Prodr. XVI, pt. 2 (1864), 100. - Brandis, Forest Fl. Ind. (1874), 487, t. 68, exclud. synonym. *O. semiserrata*.

Quercus Phyllata Hamilton apud D. Don, Prodr. Fl. Nepal. (1825), 57.

Quercus laxiflora Lindley in Wallich, Cat. No. 2774 (1829), (nomen nudum). - A. De Candolle, Prodr. XVI, pt. 2 (1864), 103.

Quercus densa Lindley in Wallich, Cat. No. 2775 (1829) (nomen nudum).

Quercus glauca, var. *castanea* Blume, Mus. Bot. Lugd.-Bat. I (1850), 303.

Cyclobalanopsis glauca Oersted in Kjoebenh. Vidensk. Meddel. XVIII (1866), 70. - Schottky in Engler, Bot. Jahrb. XLVII (1912), 656.

Cyclobalanopsis annulata Oersted in Kjoebenh. Vidensk. Meddel. XVIII (1866), 70.

Quercus Vaniolii Levellie in Fedde, Repert. Nov. Spec. XII (1913), 364.

CHEKIANG: Hang-chow, *W. C. Cheng*, No. 41, August 1929; without precise locality, *S. S. Chien*, Nos. 610 & 629.

SZECHUAN: Nanchuan-hsien, *Y. C. Yang*, Nos. 3103 & 3133; Kuan-hsien, Mount Tsing-cheng, *S. S. Chien*, No. 5721, October 10, 1936.

SIKANG: Yen-pien-hsien, alt. 1500 m., *T. T. Yu*, No. 1671, October 10, 1932.

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

This species is easily recognized by its coriaceous evergreen leaves which are elliptic-oblong or ovate-oblong and dentate only on the upper half and by the ovoid fruit only one-third enclosed by the cupules which are covered outside with concentric ring-like scales. It is very rare in Szechuan and we have not found on Mount Omei, although its occurrence has been reported from various provinces south of the Yangtze-river. W. P. Fang.

Quercus glauca Thunberg, form **gracilis** Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 226. - Rehder, Manual Cult. Trees & Shrubs, (1927), 168.

Evergreen tree usually 10 rarely up to 15 metres high, bark dark grey or brownish grey, smooth, branchlets slender, terete, those of current year greenish purple, glabrous, those more than one year old dark brown, with conspicuous ovate lenticels; winter-buds terminal or axillary, ovoid, scales ovate, imbricate, grey-pubescent on the outer surface. Leaves alternate, coriaceous, ovate-lanceolate or ovate-oblong, 5-9 cm. long, 2-2.5 cm. broad, acuminate at the apex, cuneate at base, serrate at the margin with the exception of the basal third which is entire, teeth sharp, appressed, upper surface shiny green, glabrescent, lower surface glaucous, sparsely pubescent, midrib slightly impressed above, prominent below, primary veins 12-14 pairs, just showing above, conspicuous below; petioles 1.5-2 cm. long, slender, glabrous. Flowers unisexual, dioecious, staminate flowers in pendulous catkins 5-12 cm. long, 1 or 3 from one bud, bracts triangular-ovate, caducous, sparsely pubescent on the outer surface, perianth 6-9-lobed, lobes acute, pubescent on the outer surface, stamens 6 or more, as long as the perianth-lobes, anthers yellow, 2-celled, filaments slender, glabrous, pistillate flowers solitary or 3 to 5 on a short spike, perianth pubescent, ovary inferior, 3-celled, styles 3, recurved. Fruit a short-stalked, conical-ovoid acorn, matured in one year, the lower half enclosed by the cup-shaped cupules which are covered outside with 4 concentric, ring-like, pubescent scales.

MOUNT OMEI: She-tao-tui, alt. 1300 m., in forests, small tree 5 metres high, bark yellowish brown, leaves ovate-oblong, green above, occasionally, glabrescent below, *T. C. Lee*, No. 2766, July 12, 1940; Hsi-hsin-so, alt. 1600 m., small tree 5 metres high, young fruits greenish, *W. P. Fang*, No. 17055, June 23, 1941; ? same locality, alt. 1600 m., in thickets, shrub 4-6 metres high, bark dark grey, flowers greenish, *C. L. Sun*, No. 1922, May 8, 1940; ? north-east of Mount Omei, Lo-shan-hsien, Wu-yu-ssu, near the temple, under woods, small tree 8 metres high, rare, *W. P. Fang*, No. 12482, July 24, 1938; south-west of Mount Omei, Oplen-hsien, Yen-king-chi, *W. C. Cheng*, Nos. 6197 & 6410, in 1936; without precise locality, *T. H. Yu*, No. 744, in 1935.

SZECHUAN: Kuan-hsien, Mount Tsing-cheng, in forests, tree 20 metres high, bark dark grey, *S. S. Chien*, No. 5647, May 24, 1936; same locality, in forests, tree 15 metres high, abundant, *W. P. Fang*, No. 12185, April 10, 1938; without precise locality, *K. L. Chu*, Nos. 1391 & 1825, in 1935.

Distribution: Hupeh and Szechuan.

This form differs from the type species in having smaller and narrower leaves which are ovate-oblong or ovate-lanceolate in shape. 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, a pistillate flower (enlarged 10 times); 5, a staminate flower in a bract (enlarged 10 times); 6, a back-view of staminate flower (enlarged 20 times); 7, a front-view of staminate flower (enlarged 20 times); 8, a portion of leaf to show the hairs at lower surface.

Quercus myrsinifolia Blume, Mus. Bot. Lugd.-Bat. I (1850), 305. Miquel in Ann. Mus. Lugd.-Bat. I (1893-64), 117. Franchet et Savatier, Enum. Pl. Jap. I (1875), 449. Matsumura, Ind. Pl. Jap. II, pt. 2 (1912), 28. Rehder et Wilson in Sargent, Pl. Wilson, III (1916), 236.
Quercus bambusifolia Fortune in Gard. Chron. (1860), 170 (nomen nudum, non *Q. bambusifolia* Hayce).
Quercus bambusifolia Masters (non Hayce), in Gard. Chron. n. ser. I (1874), 632.
Quercus Villoziana Franchet et Savatier, Enum. Pl. Jap. I (1875), 449; II (1879), 453. [Forbes in Journ. Bot. XXII (1884), 55. Sikan in Journ. Litt. Soc. XXVI (1899), 622. Shirasawa, Journ. Bot. Soc. Jap. I (1930), 58, t. 29, fig. 16-31. Matsumura, Ind. Pl. Jap. II, pt. 2, (1912), 30.]
Quercus acuta, var. *bambusifolia* Nicholson in Kew Handlist Trees & Shrubs, pt. 2 (1894), 161.
Quercus glauca Leveille (non Thunberg) in litt. ex Nakai in Tokyo Bot. Mag. XXIX (1915), 62 (pro synonym).
Quercus Taquetii Leveille, nov. hybr. ex Nakai in Tokyo Bot. Mag. XXIX (1915), 62 (pro synonym.)
Cylobalanopsis myrsinifolia Schottky in Engler, Bot. Jahrb. XLVII (1912), 663.
Cylobalanopsis Villoziana Schottky in Engler, Bot. Jahrb. XLVII (1912), 663.

MOUNT OMEI: Hsi-hsin-so, alt. 1803 m. in thickets, shrub 4-6 metres high, bark dark grey, flowers greenish, *C. L. S. P.*, No. 1922, May 8, 1940.

The species is easily recognised by the leaves which are lanceolate in shape, glaucescent on the upper surface and sparsely pubescent on the lower surface. The basal one-third of the margin is entire and the upper two-thirds is serrate. This species has been reported from Southwestern provinces of China and Japan, but is very rare in Western Szechuan..... W. P. Fang.

圖版一百二十六

小鐵柵櫟

變形 別名：青剛櫟

鐵柵櫟

此種其莖葉而常綠之葉，爲圓狀長圓形或卵狀長圓形，葉之上半部有鋸齒，果爲卵圓形，僅三分之一爲殼斗所包被，殼斗被集心環形之鱗片，故易辨識。四川境內較多，不產於峨眉山。據調查報告，在長江流域及華南，如浙江，江西，湖北，湖南，四川，西康，雲南，福建及廣東等省，則皆產之。

小鐵柵櫟 變形 別名：岩石櫟

常綠喬木高十公尺，稀達十五公尺；樹皮暗灰色或灰褐色，平滑；小枝細圓，當年生枝紫褐色，無毛，多年生枝暗褐色；真葉卵形或卵狀長圓形，冬芽頂生或腋生，卵圓形，鱗片卵形，覆瓦狀排列，外面被灰色細毛。葉互生，革質，卵狀披針形或卵狀長圓形，長五至九公分，寬二公分至二公分半，先端漸尖，基部楔形，邊緣近基部三分之一爲全緣，餘具尖銳而密接之鋸齒，葉表面亮綠色，光滑，背面被白粉及稀疏之細毛，中脈在葉表面微下凹。在葉背面則顯著，側脈十二至十四對，在葉表面微顯，在葉背面顯明；葉柄長一公分半至二公分，細而無毛。花單性，大花藍花模樣，小蕊花爲數五至十二公分下垂之柔荑花序，每一序中生出一至三花序，苞片三角狀卵形，早落，外面被稀疏之細毛，花被六至九裂，裂片銳尖，外面被細毛，小蕊六本或較多，真花被裂片等長，花與黃色，二室，花絲細而無毛，大蕊花單生，或三五枚成一短穗狀花序，花被具細毛，子房下位，三室，花柱三裂，反捲。果爲殼斗之圓錐狀卵圓形核實，一年成熟，下半部包於杯形之殼斗中，殼斗外被以四環形集心狀且被細毛之鱗片。

本變形產於峨眉山之峽側退，息心所帶拔一千三百公尺至一千六百公尺之森林中。峨眉山東北之樂山轉馬寺，西南之峨邊縣縣井溪，灌縣之青城山亦產之。五月開花，秋季果可成熟。

此變形亦產於湖北及四川南蔞。

此變形不同於原種者，以其殼斗而率之葉，且其形爲卵狀長圓形或卵狀披針形。
 圖解：1. 果枝（放大）； 2. 大蕊花枝（放大）； 3. 小蕊花枝（放大）； 4. 大蕊花（放大十倍）； 5. 小蕊花中之三小蕊花（放大十倍）； 6. 小蕊花之背面（放大二十倍）； 7. 小蕊花之正面（放大二十倍）； 8. 葉之一部以示其下面之毛。

細葉青櫟 別名：青櫟，類櫟

本種產於峨眉山之息心所而拔一千六百公尺之森林中。

其葉爲披針形，邊緣除近基部三分之一係全緣外，皆具鋸齒，背面略被白粉及稀疏之細毛，故易與別種辨別。中國西南各省及日本皆產之，已有報告。但在川西則極稀少。

峨眉植物圖志



126. *Quercus glauca* Thunberg form *gracilis* R. et W.

QUERCUS OXYODON Miquel var. **FARGESII** (Franchet) Rehder et Wilson.

Fagaceae.

Quercus oxyodon, Miquel in Ann. Mus. Lugd.-Bat. I (1863-64), 114. - A. De Candolle, Prodr. XVI, pt. 2 (1864), 98. - Rehder et Wilson in Sargent, Pl. Wilson, III (1916), 228. - Rehder, Manual Cult. Trees & Shrubs, (1927), 165.

Cyclobalanopsis oxyodon, Oersted in Kjoebenh. Vidensk. Meddel. XVIII (1866), 71.

Quercus lineata, var. *B oxyodon* Wenzig in Engler, Bot. Garten. Berlin, IV (1886), 232. - Hooker f., Fl. Brit. Ind. V (1888), 605. - King in Ann. Bot. Gard. Calcutta, II (1889), 39, t. 28, fig. 3. - Skan in Journ. Linn. Soc. Bot. XXVI (1899), 817. - Seemen in Engler, Bot. Jahrb. XXIX (1900), 293, pro parte.

Quercus glauca, var. *lineata*, Franchet in Journ. de Bot. XIII (1899), 169.

Quercus lineata, var. *grandifolia*, Skan in Journ. Linn. Soc. Bot. XXVI (1899), 817.

Quercus lineata, var. *macrophylla*, Seemen in Engler, Bot. Jahrb. XXIX (1900), 294.

Cyclobalanopsis lineata, var. *oxyodon*, Schottky in Engler, Bot. Jahrb. XLVII (1912), 654.

Cyclobalanopsis lineata, var. *grandiflora*, Schottky in Engler, Bot. Jahrb. XLVII (1912), 654.

This Indian species has been reported its occurrence in eastern Szechuan and western Hupeh, but has not been found in Mount Omei and other districts of western Szechuan.

Quercus oxyodon Miquel, var. *Fargesii* (Franchet) Rehder et Wilson in Sargent, Pl. Wilson, III (1916), 229. - Rehder, Manual Cult. Trees & Shrubs (1927), 165.

Quercus Fargesii Franchet in Journ. de Bot. XIII (1899), 169.

Quercus lineata, var. *Fargesii* Skan in Journ. Linn. Soc. Bot. XXVI (1899), 817.

Quercus lineata, var. *oxyodon* Seemen (non Wenzig) in Engler Bot. Jahrb. XXIX (1900), 293, pro parte.

Cyclobalanopsis lineata, var. *Fargesii* Schottky in Engler, Bot. Jahrb. XLVII (1912), 654.

Half-evergreen tree 6 to 8, rarely to 10, metres high, bark grey or dark brown, rough; branchlets terete or subangular, greenish or purplish-green, glabrous, with numerous ovate lenticels and conspicuous leaf-scars; winter-buds terminal or axillary, ellipsoid, scales imbricate, ovate or ovate-oblong, densely yellowish-grey-tomentose outside, glabrous inside. Leaves alternate, coriaceous, oblong or oblong-lanceolate, 12-16, rarely to 24, cm. long, 8-8 cm. broad, acuminate at the apex, broadly cuneate or cuneate rarely subrotund at base, dentate on the margin, teeth appressed with a stiff acumen, upper surface clothed with yellow pubescence while young, changing to deep green, glabrescent] or sparsely puberulous when fully developed, lower surface densely yellowish-pilose while young and changing to whitish glaucous with sparse puberulence when matured, midrib impressed above, prominent below, primary veins 16-19, straight, parallel, ending in the teeth of the margin, slightly impressed above, slightly prominent below; petioles 2-4 cm. long, stout, terete except slightly grooved above, dilated at base. Flowers unisexual, monoecious, staminate flowers usually 3 in an ovate bract in a yellow-pubescent slender spike, 6-10 cm. in length, usually 3 to 5 together from one flowering bud, on the upper part of the branchlets, opening at the same time as the young leaves, perianth 5- or 6-lobed, lobes obovate, 1.5 mm. long, pubescent outside, glabrous inside, stamens usually 8 in the upper flower and 4 or 5 in the two lateral flowers of one bract, about 3-4 mm. long, exerted, filaments slender, glabrous, anthers subglobose, 2-celled, rudimentary ovary absent, there is usually pubescence in the centre of the flower, pistillate flower in a stout sparsely pubescent spike. 2.5-3.5 cm. long, in the axil of persistent leaf, from upper part of branchlets, perianth densely yellowish-pubescent, ovary inferior, styles 3, short, stout, spreading, stigma capitate. Fruit a small grey-pubescent acorn, 5-7 mm. in diameter, mostly enclosed by the cupule covered outside with 4 or 5 ring-like or more or less crenulate concentric scales, yellowish-pubescent.

MOUNT OMEI: Hsi-hsin-so, alt 1620 m., in forests, tree 14 metres high, flowers yellow, rare. W. P. Fang, No. 14825, May 21, 1940; en route from Hsi-hsin-so to Chang-lao-ping, in forests, small tree 6 metres high, bark dark brown, staminate flowers green. C. L. Sun, No. 2220, May 28, 1940; Chang-lao-ping, alt. 1600 m., in woods, shrub 4 metres high, bark dark brown, flower purplish green.

C. L. Sun, No. 1903, May 7, 194; Chiu-shih-chiu-tau-kwei, alt. 1400-1600 m., in forests, tree 8 metres high, leaves deep green above, white glaucous below, pistillate flowers densely yellow-pubescent, common, T. C. Lee, No. 3116, July 31, 1940; Chiu-lao-tung, alt. 1800 m., in forests, tree 5-7 metres high, W. P. Fang, Nos. 14717, 14718 & 14719, May 19, 1940; same locality, in woods, small tree 6 metres high, bark dark brown, flowers green, C. L. Sun, Nos. 2152A & 2192, May 26, 1940; northeast of Mount Omel, Lo-shan-hsien, Wu-yu-ssu, in woods, tree 8 metres high, only one tree seen, W. P. Fang, No. 12479, July 24, 1938; southwest of Mount Omel, Opien-hsien, Hai-tai-fu-wu-chi (海大戶屋基), alt. 1600-1800 m., tree 10-13 metres high, bark grey, fissured and peeling as thin flakes, common, W. C. Cheng, No. 6116, July 3, 1936; without precise locality, C. W. Yao, Nos. 2232, 3745 & 4859, in 1933 to 1939; without precise locality, T. H. Tu, No. 740, in 1933; without precise locality, K. L. Chu, No. 2472, in 1936.

Distributions: Szechuan.

This variety differs from the type species as noticed by Professor Rehder. (l.c.) only in the entire and more yellowish-pubescent ring-like scales of the cupules. In the ample collections of specimens before me the scales of the cupules are either entire or crenulate and the colour of the pubescence varies from yellowish to greyish. Therefore the author considers that this variety is really a geographical form of *Quercus oxyodon* Miquel.

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

圖版一百二十七

法氏銳櫟

變種 俗名：蠻青剛。

殼斗科

銳櫟

原產印度之銳櫟，已知在湖北西部及四川東部確亦產之。惟在峨眉山及四川西部各縣則不產斯種。

法氏銳櫟 變種

半常綠喬木高六至八公尺，稀達十公尺；樹皮灰色或暗褐色，粗糙；小枝圓形或微有稜，淡綠色或紫綠色，無毛，具多數卵形皮孔與顯著之葉痕；冬芽頂生成腋生，橢圓形，鱗片覆瓦狀排列，卵形或卵狀長圓形，外面被濃密之黃灰色淺毛，內面無毛。葉互生，革質，長圓形或長圓披針形，長十二至十六公分，稀至二十四公分，寬五至六公分，先端漸尖，基部廣楔形或楔形稀為歪圓形，邊緣齒狀，齒齒密接，先端尖銳，幼嫩時表面蓋被黃色絨毛，當完全發育時，即變為深綠色，光滑或其稀疏之毛，背面幼嫩時被濃密之淡黃色粗毛，成熟時即蓋被淡白色之蠟粉，並被稀疏之細毛，中脈在葉表面微下凹，在葉背面突出，側脈十六至十九對，直伸，平行，末端止於邊緣之鋸齒先端，在葉裏面微下凹，葉背面則稍突出；葉柄長二至四公分，粗壯，除上面微成淺溝外其餘皆為圓形，基部擴張。花單性，大小蕊花同株，小蕊花常三枚着生於一卵形苞片內，而生於一被黃色細毛，長六至十公分之細穗狀花序上，常一花芽發出三至五種，生於小枝之上部，開花與幼葉之萌發同時，花被五或六裂，裂片倒卵形，長一公厘半，外面被細毛。內面無毛，一苞片內之較上一花具八小蕊，兩側之花僅具四或五小蕊，長約三至四公厘，伸出花瓣外，花絲細而無毛，花瓣亞圓球形，二室，不具不發育之子房，花之中部僅有毛一束；大蕊花着生於一粗壯並疏被細毛而長二公分半至三分半之穗狀花序上，由小枝上部宿存葉之腋面發出，花被具濃密之黃色細毛，子房下位，花柱三，短而粗壯，廣橫，柱頭頭狀。果為被灰色毛之小橡實，直徑五至七公厘，大部份包被於殼斗內，殼斗外被以四或五環狀之鱗片，鱗片集心狀並被黃色細毛。

此變種產於峨眉山之息心所，九十九倒拐及九老洞，海拔一千四百公尺至一千八百公尺森林中，峨眉山東北之樂山縣烏尤寺，西南之峨邊縣海大戶屋基等處亦產之。五六月開花，秋後果可成熟。

此變種之分佈區域限於四川。

此變種不同於原種者，誠如芮德教授所言，在其殼斗具環形而全緣之鱗片，且具較多之黃色細毛。在余所搜集之多數標本中，殼斗之鱗片全緣或成齒狀，毛之顏色亦由淡黃至淡灰，故作者認為此一變種實為銳櫟因地域不同所成之變形耳。

圖解：1. 果枝（原大）；2. 大蕊花枝（原大）；3. 小蕊花枝（原大）；4. 大蕊花（放大十倍）；5. 在一苞片上之小蕊花（放大十倍）。



127. *Quercus oxyodon* Miguel var. *Fargesii* R. et W.

ACER MONO Maximowicz.

Aceraceae.

Acer mono Maximowicz in Bull. Phys.-Math. Acad. Sci. St.-Petersb. XV (18) 126, no. 7, Mel. Biol. II (1887), 416; Mem. Pres. Acad. Imp. Sci. St.-Petersb. div. sav. IX (1893), 63, 368 (Prin. Fl. Amur.).- Ruprecht in Bull. Phys.-Math. Acad. Sci. St.-Petersb. XV (1887), p. 265, no. 14; Mel. Biol. II (1887), 622.- Regel in Mem. Acad. Imp. Sci. St.-Petersb. ser. 7, IV, No. 4 (1861), p. 34, no. 107 (Ten. Fl. Ussur.).- Fr. Schmidt in Mem. Acad. Imp. Sci. St.-Petersb. ser. 7, XII, no. 2 (1868), p. 36, no. 80, p. 119, no. 89 (Reis. Amur. Insel. Sachal.).- Fallbin in Act. Hort. Petrop. XIV (1868), 105.- Matsumura in Tokyo Bot. Mag. IX (1896), 88.- Bretschneider, Hist. Europ. Bot. Discov. China, (1898), 684.- Komarov in Act. Hort. Petrop. XXII (1904), p. 760, no. 1052 (Fl. Mansh. II).- Fedchenko (or Fedtschenko) in Act. Hort. Petrop. XXXI (1912), p. 158, no. 376 (Mat. Fl. Far. Esst.).- Nakai in Tokyo Bot. Mag. XLV (1931), 124.- Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. XI (1939), 28 (Monog. Chin. Aceraceae).

Acer pictum Thunberg (non Thunberg in 1783); Fl. Jap. (1784), 162.

Acer laetum Regel (non C. A. Meyer) in Bull. Phys. Math. Acad. Sci. St.-Petersb. XV (1867), p. 217, no. 7; Mel. Biol. II (1887), p. 454, no. 7.

Acer laetum var. *parviflorum* Regel in Bull. Phys.-Math. Acad. Sci. St.-Petersb. XV (1867), p. 219; Mel. Biol. II (1887), 486.

Acer pictum var.? Baker & Moore in Journ. Linn. Soc. Bot. XVII (1879), 380.

Acer pictum var. *mono* Maximowicz in Mel. Biol. X (1880), 600.

Acer liban. Franchet in Nouv. Arch. Mus. Paris, ser. 2, V (1863) 229 (Pl. David. I, 77).

Acer truncatum Maximowicz (non Bunge) in Act. Hort. Petrop. XI (1889), 109.

Acer pictum var. 2, *typicum*, form 2, *mono* Graf von Schwerin in Gartenfl., XLII (1893), 458.

Acer pictum Thunberg var. *parviflorum* (Regel) Schneider, Illustr. Handb. Laubh. II (1907), 228, fig. 151 g.

Small tree usually about 10 metres high, bark grey or dark brown, branchlets slender, glabrous, those of the current year green or purplish green, those more than one year old grey or blackish grey, with conspicuous rounded or ovate lenticels; winter-buds globose, outer scales ovate, glabrous outside, accrescent scales oblong or oblong-oblanccolate, purple, densely yellowish-pilose outside. Leaves opposite, deciduous, chartaceous, subcordate or truncate at base, 6-8 cm. long, 6-11 cm. broad, 5-lobed, occasionally 3-lobed or 7-lobed, lobes ovate, acuminate or subcaudate, entire, sinuses obtuse or broadly obtuse, reaching half way to the middle of blade; upper surface deep green, glabrous, lower surface pale green, sparsely yellowish-pubescent on the nerves while young, then glabrescent; pedicels slender, glabrous, 4-6 cm. long. Flowers numerous, appearing with the leaves, andromonoecious, in glabrous paniculate corymbs, about 7 cm. long, 4 cm. broad; sepals 5, greenish-yellow, oblong, obtuse, 3 mm. long, sparsely pubescent or pilose outside; petals 5, whitish, obovate, about 3 mm. long; stamens 8, inserted near the inner margin of the disk, filaments slender, glabrous, anthers yellow, ellipsoid; ovary glabrous, compressed, rudimentary in the staminate flower, styles glabrous, stigma revolute; pedicels 1-3 cm. long, slender, glabrous. Fruit, a samara, purplish green while young, yellowish when matured; nutlets flat, compressed, 1-1.3 cm. long, 8-11 mm. broad; nutlets, including wings, 3-3.5 cm. long, 1-1.5 cm. broad, spreading horizontally or at obtuse angles.

MOUNT OMEI: Chiu-shih-Chiu-Tao-kual, alt. 1600 m., *S. S. Chien*, No. 5526, May 8, 1936; same locality, in thickets, small tree 5 to 7 metres high, bark grey, flowers green, *C. L. Sun*, No. 134, May 11, 1939; same locality, small tree 5 metres high, bracts reddish pubescent outside, red inside, *W. C. Cheng*, No. 10312, May 13, 1940; near Chiu-tao-tung, in woods, shrub 8 metres high, bark dark brown, flowers light green, *C. L. Sun*, No. 1826, May 1, 1940.

NORTHEASTERN SZECHUAN: without precise locality, *K. L. Chu*, Nos. 1309 & 1423, in 1934.

SIKANG: Pao-hsing-hsien, *K. L. Chu*, Nos. 2634 & 2436, in 1936.

Distribution: Hel-lung-kiang, Kirin, Hopei, Shansi, Shensi, Szuantung, Kansu, Honan, Chekiang, Kiangsu, Anhwei, Kiangsi, Hupeh, Hunan, Szechuan, Sikang, Yunnan, Corea.

This species has been found in various provinces of China except Fukien, Kwangtung and Kwangsi. It is very rare on Mount Omei and so far has been discovered only at a few localities almost half way up the mountain..... W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a staminate flower (enlarged 6 times); 4, a perfect flower (enlarged 6 times).

Acer fulvescens Rehder in Sargent, Pl. Wilson. I (1911), 84; Manual Cult. Trees & Shrubs, (1927), 562.-Schneider, Illustr. Handb. Lanbh. II (1912), 1023.-Leveillé, Cat. Illustr. Pl. Sentschuou, (1918), 173, mss.-Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China).-Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VIII (1932), 162; XI (1939), 43.-Handel-Mazzetti, Symb. Sin. VII (1933), 640, excl.

MOUNT OMEI: Chiu-lao-tung, alt. 1800 m., in forests, tree 10 metres high, C. L. Sun, No. 464, June 12, 1939.

Distribution: Szechuan and Yunnan.

Sun's 464 is a mature fruiting specimen with leaves that are only slightly pubescent on the lower surface. At Mount Omei this species is usually a tree about 10 metres high, but in other districts of Western Szechuan and Northern Yunnan it is a low tree, only 5 to 8 metres in height..... W. P. Fang.

圖版一百二十八

單幹槭

槭樹科

小喬木高約十公尺；樹皮灰色或暗褐色，小枝纖細，無毛，當年生枝綠色或紫綠色，多年生枝灰色或深灰色，具顯明之圓形或卵形皮孔；冬芽圓球形，外面之鱗片為卵形，表面無毛，開花後始長大之鱗片長圓形或長圓倒披針形，紫色，表面被濃密之黃色絨毛。葉對生，冬季凋落，紙質，基部亞心臟形或截形，長六至八公分，寬九至十一公分，五裂，偶現三裂或七裂，裂片卵形，漸尖或微成尾狀，全緣；兩裂片中間之凹穴成鈍形或廣鈍形，達於葉片中部；表面深綠色，無毛，背面淡綠色，幼嫩時頂上被稀疏之黃色絨毛，旋即光滑無毛；葉柄細而無毛，長四至六公分。花多數，與葉之發出同時開放，僅小萼花與兩性花同株，成為無毛圓錐狀之繖房花序，長約七公分，寬四公分；萼片五枚，黃綠色，長圓形或鈍形，長三公厘；小蕊八本，其位近於花盤之內緣，花絲纖細，無毛，花藥黃色，橢圓形；子房無毛，左右扁平，在小蕊花中不發育，花柱無毛，柱頭外旋；花梗長一至三公厘，外面無毛。果為翅果，幼嫩時為紫綠色，成熟時為淡黃色；小堅果左右扁平，長一分至一分三公厘，寬八至十一公厘；小堅果連翅長三至三公厘半，寬一至一分半，伸張成一平面或為鈍角。

此種產於峨眉山之九十九拐及九老洞附近，海拔一千六百公尺左右之森林中。四川東北部，及西康之寶興縣亦產之。五月開花，八月果可成熟。

此種分佈於黑龍江，吉林，河北，山西，陝西，山東，甘肅，河南，浙江，江蘇，安徽，江西，湖北，湖南，四川，西康，雲南等省及朝鮮。

此種除福建廣東廣西外，我國各省皆產之。在峨眉山則稀罕，僅知其產於山之中部。

圖解：1. 花枝（原大）；2. 果枝（原大）；3. 小蕊花（放大六倍）；4. 兩性花（放大六倍）。

黃毛槭

此種產於峨眉山之九老洞。海拔一千八百公尺之森林中。

此種分佈於四川及雲南兩省。

此種在峨眉山常為喬木，高約十公尺。但在川西及滇北等地，則為僅高五至八公尺之小樹。

蕨肩植物圖志



128. *Acer mono* Maximowicz

ACER CATALPIFOLIUM Rehder.

Aceraceae.

Acer catalpifolium Rehder in Sargent, Pl. Wilson, I (1911), 87; Manual Cult. Trees & Shrubs, (1927), 563. Schneider, Illustr. Handb. Laubh. II (1912), 1029. Leveille, Cat. Illustr. Pl. Seutchuen. (1918), 178, mss. - Chung in Mem. Sci. Soc. China, I (1924), 148 (Cat. Trees & Shrubs China). - Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 149; VIII (1932), 165; XI (1939), 50 (Monogr. Chin. Acerac.).

Tree usually 20, rarely to 30, metres high, bark grey or dark grey, smooth; branchlets slender, terete, glabrous, widely spreading and becoming a flat crown, those of the current year green or purplish green, those more than one year old green or dark green, with sparse ovate lenticels; winter-buds ovoid, terminal or axillary, with 6 imbricate acute scales, glabrescent on both sides, ciliate on the margin. Leaves deciduous, chartaceous, ovate or ovate-oblong, entire or occasionally with 2 undeveloped lateral lobes below the middle, 9-20 cm. long, 5-13 cm. broad, acute or obtuse, rarely acuminate, with a caudate acumen on the apex, rounded or subcordate at the base, upper surface shining green, glabrous, lower surface pale green, glabrous except with tufts of hairs at the axils of nerves, midrib conspicuous above, elevated below, primary nervs 4-6, slightly impressed above, slightly elevated below; petioles slender, glabrous, 3-9, rarely to 14 cm. long, purplish white young then changing to green. Flowers numerous, andromonoecious, green or yellowish green, in glabrous terminal corymbs about 6 cm. long, usually terminal on a leafy branchlet, appearing with the developing of leaves, sepals 5, greenish, glabrous, ovate-oblong, 3.4 mm. long, 1-1.5 mm. broad, petals oblong-lanceolate, occasionally emarginate at apex, 4-8 mm. long, 1-1.5 mm. broad, greenish yellow, glabrous (in perfect flowers the petals rarely undeveloped), stamens 8, in staminate flowers slightly longer than or as long as the petals, in perfect flowers shorter than sepals, anthers yellow, subglobose, glabrous, filaments slender, glabrous, disk extrastaminal, slightly lobed, glabrous, ovary superior, glabrous, undeveloped in staminate flower, style slender, divergent at the middle and recurved, stigma small. Fruit a samara with a compressed nut, 1-1.5 cm. long, 4-6 mm. broad, with wings 3.5-4 cm. long, 1-1.2 cm. broad at the widest part, spreading at right to obtuse angles, seeds dark brown, suborbicular, 6 mm. in diameter; pedicels slender, glabrous, 2-4 cm. long.

MOUNT OMEI: near Hwang-wan, alt. 600 m., at roadside, tree 20 metres high, *W. P. Fang*, No. 14174, April 21, 1940; Fu-hu-ssu, alt. 600 m., tree 15 metres high, *W. P. Fang*, No. 12508, July 26, 1938; same locality, *W. P. Fang*, No. 15622, December 2, 1940; ? Chiu-lao-tung, alt. 1800 m., in forests, tree 10 m., high, *C. L. Sun*, No. 464, June 12, 1939 (doubtful refer here and may be a new variety); without precise locality, *C. W. Yao*, Nos. 3551 & 5074, in 1939.

WESTERN SZECHUAN: Mount Tsing-cheng, alt. 800 m., *S. S. Chien*, Nos. 5395, 5736 & 5891, April to May 1937; same locality, in forests, small tree 7-10 metres high, young leaves purplish green, flowers small, green, *W. P. Fang*, Nos. 12078, 12104, 12189 & 12217, April 1933; same locality, by a stream, tree 8 metres high, flowers green or yellowish green, occasionally, *W. P. Fang*, No. 19367, April 5, 1944.

Distribution: Szechuan and Sikang.

This species is a very beautiful tree and could be cultivated as an avenue-tree along the highways or along the streets in Szechuan province. It is easily recognized by its large samara and its unlobed ovate leaves. It was discovered by Wilson at Ya-an-hsien and Kuan-hsien and has been found not uncommonly at the base of Mount Omei. It is found only in Western Szechuan in an area which is limited only by Kuan-hsien to the north, Ya-an-hsien (now in Eastern Sikang) to the west, and Omei-hsien to the south. *W. P. Fang*.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a back view of staminate flower (enlarged 6 times); 4, a front view of staminate flower to show the stamens and disk (enlarged 6 times); 5, a perfect flower (enlarged 6 times).

圖版一百二十九

梓葉槭

槭葉科

喬木高二十公尺，稀達三十公尺；樹皮灰色或暗灰色，光滑；小枝細圓，無毛，常伸展為扁平之樹冠；當年生枝綠色或紫綠色，多年生枝綠色或暗綠色，具稀疏之卵形皮孔；冬芽卵圓形，頂生或腋生，具六枚覆瓦狀排列之銳尖鱗片，兩面光滑無毛，邊緣具纖毛狀之鋸齒，葉多季凋落，紙質，卵形或卵狀長圓形，全緣或偶具二未發育而側生之裂片，長九至二十公分，寬五至十三公分，先端銳尖或鈍形，稀漸尖，先端或尾狀，基部圓形或亞心臟形，表面亮綠色無毛，背面淡綠色，除葉脈腋間具叢生或束狀之細毛外，餘皆無毛，中脈在表面顯明，在背面隆起；側脈四至六對，在葉表面微凹，在葉背而稍隆起；葉柄細而無毛，長三至九公分，稀達十四公分，幼嫩時紫色，旋即變為綠色。花甚多，小蕊花與兩性花同株，綠色或黃綠色，着生於頂生之繖房花序上，花序無毛，長約六公分，常頂生於着葉之枝上，花與葉同時開發，萼片五枚，淡綠色，無毛，卵狀長圓形，長三至四公厘，寬一公厘至一公厘半，花瓣長圓披針形，先端偶或欠缺，長四至五公厘，寬一至一公厘半，黃綠色，無毛，（在兩性花中花瓣偶有不發育者），小蕊八本，在小蕊花中微長於花瓣，或與之等長，在兩性花中則短於萼片，花藥黃色，亞圓球形，無毛，花絲細而無毛，花盤生於小蕊之外圍，微裂，無毛，子房上位，無毛，在小蕊花中不發育，花柱細，中部以上分為二枝且反捲，柱頭細小。果為黃綠色之翅果，具扁平之堅果，長一至一公分半，寬四至六公厘，具長三公分半至四公分之翅，最寬部寬一至一公分二公厘，伸展為鈍角，種子暗褐色，亞圓形，直徑六公厘，果梗細而無毛，長二至四公分。

此種產於峨眉山之黃灣及伏虎寺，海拔五百公尺之森林中或路旁。川西之灌縣青城山亦產之。四月開花，九月果可成熟。

此種係極美觀之樹，在四川省境內，可作城市及公路兩旁之行道樹。以其具大翅果及不分裂之卵形葉，故易辨別。原係威爾遜氏在雅安灌縣兩處發現。在峨眉山麓亦甚普通。此種之分佈區域限於川西之成都平原，西北止於灌縣，西止於雅安縣（現屬西康省），南達於眉縣。

圖解：1. 花枝（原大）；2. 果枝（原大）；3. 小蕊花之背面（放大六倍）；4. 小蕊花之前面，示其小蕊與花盤（放大六倍）；5. 兩性花（放大六倍）；

臺灣植物圖志



129. *Acer catalpifolium* Rehder

Plate 130.

ACER OLIVERIANUM Pax.

Aceraceae.

Acer Oliverianum Pax in Hooker Icon. Pl. XIX (1889), under t. 1897; in Engler & Prantl, Pflanzenfamilien, III, pt. 8 (1896), 271; ex Diels in Engler, Bot. Jahrb. XXIX (1900), 449 (Fl. Centralchina); in Engler, Pflanzenreich, Heft 8 (IV. 163) (1902), 21.— Bretschneider, Hist. Europe. Bot. Discov. China, (1908), 781.— Henry in Gard. Chron., ser. 3, XXXIII (1903), 100 (Chin. Maples).— Hemsley in Journ. Linn. Soc. XXXVI (1905), 452.— Rehder in Sargent, Trees & Shrubs, I (1905), 183, t. 77; II (1907), 26; in Sargent, Pl. Wilson. I (1911), 20; in Journ. Arn. Arb. VII (1926), 219; VIII (1927), 162; Manual Cult. Trees & Shrubs, (1927), 569.— Schneider, Illustr. Handb. Laubh. II (1907), fig. 135. r-u.— Leveillé Cat. Illustr. Pl. Seutchouen (1918), 179, mss.— Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China).— in Notes Roy. Bot. Gard. Edinb., XIV (1924), 196.— Chien in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. III (1927), 61 (Fl. Hwangshan).— Bean, Trees & Shrubs, Hardy Brit. Isl. I (1929), 151.— Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 161; VIII (1932), 163; XI (1933), 78.— Handel-Mazzetti, Symb. Sin. VII (1933), 640.

Small tree, 5 to 7 metres high, bark smooth, dark brown, occasionally covered with waxy coating; branchlets slender, glabrous or slightly puberulous, those of the current year greenish purple, those more than one year old greenish brown; winter buds small, ellipsoid, glabrescent. Leaves opposite, deciduous, chartaceous, 4-8 cm. long, 5-9 cm. broad, subcordate or nearly truncate at base, 5-lobed; lobes triangular-ovate, acuminate, appressed, sharply serrulate, sinuses obtuse or acute, reaching one-third or one half way to the middle of the blade, upper surface deep green, glabrous, lower surface pale green, glabrous except the axillary tufts of densely yellowish hairs; petioles 2.5-5 cm. long, slender, glabrous or slightly pubescent near the apex. Flowers andro-monoecious, in glabrous terminal corymbs, appearing while the developing of leaves; sepals 5, purplish-green, ovate or elliptical-ovate, 3-4 mm. long; petals 5, whitish, ovate, obtuse, 3-4 mm. long; stamens 8, in staminate flowers slightly longer than petals, filaments glabrous, anthers yellow, in pistillate flower the stamens much shorter; disk slightly lobed, extrastaminal; ovary slightly villous, style glabrous, 2 mm. long, stigmas revolute. Fruits, samaras, in pendulous corymbose fruiting inflorescences; nutlets strongly convex, about 6 mm. long, 4 mm. broad, distinctly veined; wings purplish while young and brownish-yellow when matured, with nutlets 3-3.5 cm. long, 1 cm. broad, spreading nearly horizontally.

MOUNT OMEI: Hsi-hsin-so, alt. 1400 m., in thickets, small tree 10 metres high, fruits purplish-green, *G. L. Sun*, No. 316, May 24, 1939; Chang-lao-ping, in forests, small tree 8 metres high, occasionally, *T. C. Lee*, No. 2934, July 22, 1940; same locality, small tree 6 metres high, samaras yellowish brown, common, *T. C. Lee*, No. 3611, October 1, 1949; Chiu-lao-tung, alt. 1800 m., in forests, small tree 6 metres high, bark greenish grey, flowers purplish-red, *G. L. Sun*, No. 1830, May 1, 1940; Hwa-yen-ting, alt. 1950 m., in forests, small tree 6 metres high, young samaras green, *W. P. Fang*, No. 14790, May, 20, 1940; same locally, *W. P. Fang*, No. 7785, July 20, 1930; southwest of Mount Omei, Oplen-hsien, *W. C. Cheng*, No. 6327, July 1936.

Distribution: Kansu, Chekiang, Anhwei, Hupeh, Szechuan, Kweichow, Yunnan, Kwangsi.

This species superficially resembles *Acer sinense* Pax, but can be distinguished easily by the chartaceous leaves with 5, shallow, obtusely, serrulate lobes, and by the corymbose inflorescences.

W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a staminate flower (enlarged 10 times); 4, a perfect flower (enlarged 10 times); 5, a portion of leaf showing hairs on the veins of lower surface (enlarged 5 times).

圖版一百三十

阿氏槭 別名：五裂槭

槭樹科

小喬木，高五至七公尺，樹皮光滑，暗褐色，偶被蠟質層；小枝纖細，無毛或微被毛，當年生枝紫綠色，多年生枝綠褐色；冬芽小，橢圓形，光滑無毛。葉對生，冬季凋落，紙質，長四至八公分，寬五至九公分，基部亞心臟形或近於楔形，五裂；裂片為三角狀卵形，漸尖，具密接而銳利之鋸齒，裂片之穴或鈍形或銳尖，其深及葉片三分之一或一半，表面深黃綠色，無毛，背面淡綠色，除葉腋間有叢生之黃色毛外，餘皆無毛；葉柄長二公分半至五公分，細而無毛或近其頂端微被毛。小蕊花與完全花同株，或無毛而頂生之繖房花序，與葉同時開放；萼片五枚，紫綠色，卵形或橢圓狀卵形，長三至四公厘；花瓣五枚，淡白色，卵形，先端鈍形，長三至四公厘；小蕊八本，在小蕊花中微長於花瓣，花絲無毛，花藥黃色，在大蕊花中小蕊極短；花盤微裂，生於小蕊之外圍；子房微被絨毛，花柱無毛，長二公厘，柱頭反捲。果為翅果，着生於下垂繖房狀之果序上；小堅果凸出成卵圓形，長約六公厘，寬四公厘，具顯著之脈紋；翅幼嫩時為紫色，成熟時為褐黃色，連小堅果共長三至三公分半，寬一公分，展開成一平面。

本種產於峨眉山之息心所，長老坪，九老洞及華嚴頂，海拔一千四百至二千公尺之叢林中。峨眉山西南之峨邊縣亦產之。四月開花，八月果可成熟。

本種分佈於甘肅，浙江，安徽，湖北，四川，貴州，雲南及廣西等省。

本種在表面上與中華槭相似，實則易於區別，因本種之葉紙質，具淺裂鈍齒狀之裂片，并有繖房狀之花序，與中華槭完全不同也。

圖解：1.花枝（原大）；2.果枝（原大）；3.小蕊花（放大五倍）；4.完全花（放大五倍）；5.葉之一部放大以示其背面之毛（放大五倍）。

峨眉植物圖志



130. *Acer oliverianum* Pax

Plate 161.

ACER SINENSE Pax,VAR. **BREVILOBUM** Fang et VAR. **LONGILOBUM** Fang.

Aceraceae.

Acer sinense Pax in Hooker, Icon. Pl. XIX (1898), under t. 1897; in Engler & Prantl, Pflanzenfamilien, III, pt. 3 (1898), 271; ex Diels in Engler, Bot. Jahrb. XXIX. (1900), 448 (Fl. Centralchina); in Engler, Pflanzenreich, Heft 8 (IV. 163) (1902), 22.— Graf von Schwerin in Gartenfl. XLII (1893), 288.— Bretschneider, Hist. Europ. Bot. Discov. China, (1868), 781.— Henry in Gard. Chron. Ser. 3, XXXIII (1903), 100, (Chin. Maples).— Hemsely in Journ. Linn. Soc. Bot. XXXVI (1905), 452.— Rehder in Sargent, Trees & Shrubs, I (1905), 155, t. 73; II (1907), 26; in Sargent, Pl. Wilson. I (1911), 90, excl.; in Journ. Arn. Arb. VIII (1927), 162; Manual. Cult. Trees & Shrubs (1927), 569.— Schneider, Illustr. Handb. Laubb. II (1907), 250, figs. 133 e-1.— Matsumura in Icon. Pl. Koisik. I (1911), 17, t. 9.—Léveillé, Cat. Illustr. Seutchouen, (1918), 179, nss.— Chung in Mem. Sci. Soc. China, I (1924), 180 (Cat. Trees & Shrubs China).— Hu in Science, Sci. Soc. China, IX (1924), 840.—Chien in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. III (1927), 61 (Fl. Hwangshan).— Bean, Trees & Shrubs, Hardy Brit. Isl. I (1929), 169.— Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 151, in part, excl. specimen cited Fang's 6839 from Szechuan; XI (1933), 82 (Monogr. Chin. Aceraceae).— Handel-Mazzetti, Symb. Sin. VII (1933), 640.

Liquidambar Rostrornis Diels in Engler, Bot. Jahrb. XXIX (1900), 380 (Fl. Centralchina).

Acer sinense Pax var. *typicum* Pax in Engler, Pflanzenreich, Heft 8 (IV. 163) (1902), 22.

Acer sinense Pax var. *B. concolor* Pax in Engler, Pflanzenreich, Heft 8 (IV. 163) (1902),

22.— Veitch in Journ. Roy. Hort. Soc. XXIX, pt. 3 (1904), 348, 350, fig. 92.—

Rehder, Manual, Cult. Trees & Shrubs, (1927), 569.— Bean, Trees & Shrubs,

Hardy Brit. Isl. I (1927), 159.— Handel-Mazzetti, Symb. Sin. VII (1933), 640.

Small tree, usually 5 to 8 metres high, bark yellowish-brown or dark brown, smooth; branchlets slender, glabrous, those of the current year greenish-purple, glabrous, those more than one year old brownish green or dark brown, smooth; winter-buds small, covered, before the leaves fall, by the enlarged bases of the petioles, scales 6, villous at the inner side near the margin. Leaves opposite, deciduous, subcoriaceous, cordate or subcordate, rarely truncate, 10-14 cm. long, 12-15 cm. broad, 5-lobed; lobes oblong-ovate or triangular-ovate, acuminate, appressed serrulate except near the base which is entire, sinuses acute, reaching more or less to the middle of the blade, upper surface deep green, glabrous, lower surface pale green, glabrescent except tufts of yellowish hairs on the axils of nerves; petioles stout, glabrous, 3-5 cm. long. Flowers andro-monoecious, in pendulous, many-flowered terminal panicles, usually 5-7 cm. long, on peduncles 3-5 cm. long; sepals 5, greenish, ovate-oblong or triangular-oblong, acutish, about 3 mm. long, slightly ciliate on the margin; petals 5, whitish, oblong or ovate-oblong, as long as the sepals; stamens 8, rarely 5-7, longer than sepals, very short in pistillate flowers, anthers yellow, filaments glabrous; disk thick, extrastaminal, slightly pubescent; ovary white-pilose, rudimentary in staminate flower, style glabrous, 3-4 mm. long, stigmas spreading or recurved; pedicels slender, glabrous, about 5 mm. long. Fruits, yellowish samaras, usually glabrous, in pendulous paniculate fruiting inflorescence; nutlets ellipsoidal, strongly convex, 8-7 long, 3-4 mm. broad; wings 1 cm. broad, 2.5-3.5 cm. long, spreading at acute angles or horizontally.

MOUNT OMEI: Chiu-loo-tung, alt. 1600 m., small tree 8 metres high, flowers greenish, *W. P. Fang*, No. 14673, May 19, 1940; without precise locality, *G. W. Yao*, Nos. 4474 & 4750, in 1939.

Distribution: Chekiang, Anhwei, Hupen, Szechuan, Hunan, Kweichow, Kwangtung, Kwangsi.

The type-specimen, which was collected by Augustine Henry from Chien-shih-hsien of Western Hopeh, has coriaceous leaves, but the plants of Mount Omei have usually chartaceous leaves with lobes that are also smaller than those of the type-specimen.

Acer sinense Pax, var. *brevilobum* Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. XI (1933), 85.

Acer Gambellii Fang (non Hooker f. et Thomson) in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 163.

WEST OF MOUNT OMEI: Opien-hsien, Yen-ching-chi, in forests, tree of 13 metres high, bark grey, smooth, *W. C. Cheng*, No. 6031, July 1936; without precise locality, *G. W. Yao*, Nos. 3623, 4215 & 4496, in 1939.

Distribution: Szechuan.

This variety was discovered by the writer from Mapien-hsien and Opienhsien. It is fairly

common in this region. The broad leaves, subround at the base and with remotely serrulate lobes, as well as the oblong-ellipsoid nutlets, with falcate wings always widest near the apex, distinguish this variety from other varieties and species. It is a great pity that we have not yet gathered a good flowering specimen which may show that this variety should be given specific rank. . . W. P. Fang.

Fig. 4, a fruiting branch (natural size).

Acer sinense Pax, var. *longilobum* Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. XI (1939), 86.

MOUNT OMEI: without precise locality, *W. P. Fang*, No. 6639, July 1930.

EASTERN SZECHUAN: Nanchuan-hsien, Mount of the Golden Buddha, *T. H. Tu*, No. 3021 May 16, 1932.

Distribution: Hupeh and Szechuan.

This variety formerly was known from Hsing-shan-hsien of Western Hupeh and Mount Omei of Western Szechuan. The discovery of it at Nanchuan-hsien of Southeastern Szechuan confers the fact that this is a distinct variety and also show that it has a wider distribution than was thought. . . W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting inflorescence (natural size); 3, a perfect flower (enlarged 5 times).

圖版一百三十一

中華槭

別名：華槭，羊角槭。

淺裂中華槭及深裂中華槭二變種

槭樹科

小喬木高五至八公尺；樹皮黃褐色或暗褐色，平滑；小枝細而無毛，當年生枝紫褐色，無毛，多年生枝褐色或暗褐色，光滑；冬芽小，在葉落之先常被葉柄之膨大基部所蓋蔽，鱗片六枚，內面近邊緣處被絨毛。葉對生，冬季凋落，革質，心臟形或亞心臟形，稀為楔形，長十至十四公分，寬十二至十五公分，五裂；裂片長圓形或三角狀卵形，漸尖，除基部全緣外，餘具密接之細鋸齒，裂片間之凹穴銳尖，其深處達於葉片之中部，表面深綠色，無毛，背面淺綠色，除脈腋上被叢生之淡黃色毛外，餘皆光滑；葉柄粗壯，無毛，長三至五公分。小葉花與完全花同株，着生於下葉面生之圓錐花序上，長五至七分，花梗長三至五公分；萼片五枚，淡綠色，卵狀長圓形或三角狀長圓形，先端銳尖，長約三公厘，邊緣微具纖毛；花瓣五枚，淡白色，長圓形或卵狀長圓形，與花萼等長；小蕊八本，稀為五至七本，長於萼片，在小蕊花中則極短，花藥黃色，花絲無毛；花盤甚厚，生於小蕊之外圍，微被毛；子房被白色淺毛，在小蕊花中不發育，花柱無毛，長三至四公厘，柱頭開展或反捲；花梗細而無毛，長約五公厘。果為淡黃色之翅果，常無毛，着生於下葉之圓錐狀果序上；小堅果橢圓形，凸出長卵圓形，長五至七公厘，寬三至四公厘，翅寬一分，長二公分半，張開成銳角或成平面。

本種產於峨眉山之九老洞，海拔一千八百公尺之林中。五月開花，九月果可成熟。

本種分佈於浙江，安徽，湖北，四川，湖南，貴州，廣東，及廣西等省。

本種係亨利氏發現於湖北之建始縣。其模式標本具革質之葉。在峨眉山採得之標本則具紙質葉。其裂片亦較原種標本為小。異地變形，在所不免也。因其翅果狀似羊角，故俗名羊角槭。至名羊角槭者，則係由羊角槭轉譯音之誤也。

淺裂中華槭 變種。

此變種之葉淺裂，具短而寬之裂片。

此變種產於峨眉山西南峨邊縣之羅井溪。

此變種之分佈限於四川。

此變種係作者發現於馬邊縣及峨邊縣，在彼處極常見。葉闊，基部亞圓，具稀疏細鋸齒之短裂片，與長圓狀橢圓形之小堅果，具鐘形之翅，近先端處常最寬，使此變種與原種易於區別。其花必能確定此種在分類上之地位，惜乎吾人未能採得其花之標本為歡耳。

圖解：4.果枝（原大）。

深裂中華槭 變種。

本變種之葉深裂，具長裂片。

本變種產於峨眉山及川東之南川縣金佛山。

本變種分佈於湖北及四川。

前此僅知本變種產於峨眉山及鄂西之興山縣。自杜大華君在南川金佛山發現後，更可證明其為顯著之變種，且有較寬之分佈區域。

圖解：1.花枝（原大）；2.果序（原大）；3.完全花（放五倍）。



131. *Acer sinense* Pax var. *longilobum* Fang
brevilobum Fang

Plate 132.

ACER FLABELLATUM Rehder.

Aceraceae.

Acer flabellatum Rehder ex Veitch in Journ. Roy. Hort. Soc. XXIX, pt. 3 (1904), 340, name only; Rehder in Sargent, Trees & Shrubs, I (April 1905), 161, t. 81, in English; in Fedde Repert. Nov. Spec. I (July 1905), 7, in Latin; in Sargent, Pl. Wilson. I (1911), 93; Männa! Cult. Trees & Shrubs, (1927), 568.— Dunn in Journ. Linn. Soc. XXXIX (1911), 413.— Leveille, Cat. Pl. Szechouen, (1918), 178, nss.— Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China).— Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 155; VIII (1932), 167; XI (1939), 89.

Acer Sieboldianum var. ? Baker & Moore in Journ. Linn. Soc. XVII (1880), 380, in part.

Acer japonicum, Forbes & Hemsley (non Thunberg) in Journ. Linn. Soc. XXIII (1886), 140, in part.

Acer robustum Rehder (non Pax) in Sargent, Trees & Shrubs, II (1907), 26.— Schneider, Illustr. Handb. Laubb. II (1907), 206.— Matsumura in Icon. Koisikavenses, I (1911), t. 12, in part, incl. syn. *Acer flabellatum*.

Small tree, usually 5 to 10 metres high, bark smooth, brown or brownish grey; branchlets slender, glabrous, those of the current year green or purplish-green; those more than one year old olive-brown or reddish-brown; winter-buds ellipsoid, villous on the outer surface. Leaves deciduous, chartaceous or membranaceous, deeply cordate at base, roundish in outline, 8-12 cm. diameter, usually 7-lobed, occasionally 9-lobed, lobes usually ovate-oblong, rarely ovate or triangular-ovate, acuminate, sharply and irregular serrate with appressed acute teeth; sinuses acuminate or rarely acute, reaching to the middle of the blade, upper surface deep green, glabrous, lower surface pale green, glabrescent, except villous on the nerves and tufts of hairs at the axils of nerves, primary and secondary nerves prominent on both surfaces; petioles slender, up to 7 cm. long, villous while young, then glabrous. Flowers andro-monoecious, in glabrous panicles about 3 to 5 cm. long, on glabrous peduncles about 3 cm. long; sepals 5, greenish, ciliate on the margin, ovate-lanceolate, acute, about 3 mm. long; petals 5, yellowish-white, obovate, as long as the sepals; stamens 8, glabrous, about 5 mm. long, disk glabrous, slightly lobed, extrastaminal; ovary sparsely pubescent or glabrous; pedicels about 1 mm. long, slender, glabrous. Fruits yellowish-brown samaras, in pendulous paniculate fruiting inflorescence; nutlets convex, subglabrous, 6 mm. long, 5 mm. broad; wings included nutlets usually 3-3.5 cm. long, rarely up to 4 cm. long, 1-1.2 cm. broad, spreading nearly horizontally.

MOUNT OMEI: Chiu-lao-tung, alt. 1800 m., S. S. Chien, No. 6145, July 15, 1937; same locality, in thickets, small tree 10 metres high, C. L. Sun, Nos. 196 & 207, May 12, 1939; Hua-yen-ting, alt. 1650 m., small tree 5 metres high, samaras greenish, occasionally, W. P. Fang, No. 12872, August 3, 1939; Ta-cheng-ssu, alt. 2300 m., small tree 8 metres high, W. P. Fang, No. 17151, July 5, 1941; south-west of Mount Omei, Opien-hsien. Yen-king-ki, W. C. Cheng, Nos. 6169 6231 & 6517, July 1936; same locality, C. W. Yao, Nos. 4004 & 4277, in 1939.

NORTHEASTERN SZECHUAN: without precise locality, K. L. Chu, No 1279 & 1319, in 1935.

SIKANG: Pao-hsing-hsien, K. L. Chu, Nos. 2468, 2521, 3152 & 3285, July 1936.

Distribution: Hupeh Szechuan and Sikang.

This species is easily recognised by its 7-lobed leaves which are deeply cordate at the base and pubescent on the primary veins, by the ovate-oblong lobes which are irregularly serrate on the margin, and by its large samaras with wings spreading horizontally. W. P. Fang.

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

圖版一百三十二

扇葉槭

槭樹科

小喬木高五至十公尺，樹皮光滑，褐色或灰褐色；小枝細而無毛，當年生枝綠色或紫綠色，多年生枝紫褐色或紅褐色；冬芽橢圓形，外面被絲狀細毛。葉冬季凋落，紙質或膜質，基部深心臟形，外形渾圓類似扇形，直徑八至十二公分，常七裂，偶或九裂，裂片常成卵狀長圓形，稀卵形或三角狀卵形，漸尖，邊緣均具不規則之鋒銳鋸齒，齒尖銳利而密接；裂片之凹穴漸尖或稀銳尖，其深及於葉片之中部，葉表而深綠色，無毛，背面淡綠色，光滑，僅葉脈上有絲狀細毛及葉腋有叢生之毛，側脈在葉之兩面皆顯明；葉柄纖細，長達七公分，幼嫩時被絲狀之毛，後則無毛。小蕊花與完全花同株，着生於長約三至五公分且無毛之圓錐花序上，着生於長約三公分之無毛花梗上；萼片五枚，淡綠色，邊緣被纖毛，卵狀披針形，銳尖，長約三公厘；花瓣五枚，黃白色，倒卵形，與萼片等長，小蕊八本，無毛，長約五公厘，花盤無毛，微裂，生於小蕊外圍；子房被稀疏之毛或無毛；小花梗長約一公厘，細而無毛。果為黃褐色之翅果，着生於下垂之圓錐狀果序上；小堅果凸出，微光滑，長六公厘，寬五公厘；翅連同小堅果常長三至三公分半，稀達四公分，寬一公分至一公分二公厘，展開成平面。

本種產於峨眉山之九老洞，華嚴頂，大乘寺，海拔一千八百公尺至二千三百公尺之叢林中。峨眉山西南之峨邊縣鹽井溪亦產之。五六月開花，八九月果可成熟。

本種分佈於湖北，四川及西康等省。

本種具圓扇形七裂之葉，基部為深心臟形，側脈上被毛，並具卵狀長圓形之裂片，其邊緣有不規則之鋸齒，及其大翅果之翅展開成一平面，故易與其他種類辨別。

圖解：1.花枝（原大）；2.果枝（原大）；3.兩性花（放大十倍）；4.小花蕊（放大十倍）。



132. *Acer flabellatum* Rehder

Plate 133

ACER ERIANTHUM Graf von Schwerin

Aceraceae (Family of the Aceraceae)

Acer erianthum Graf von Schwerin, Mittell. Deutsch. Dendr. Ges. X (1901), erste Auflage, p. 59, zweite Auflage, p. 320, in German; ex Pax in Engler, Pflanzenreich, Heft 8 (IV 163) (1902), 22, 78, in Latin; in Engler, Bot. Jahrb. XXXVI, Beibl. LXXXII (1905), 73. Veitch in Journ. Roy. Hort. Soc. XXIX, part 3 (1904), 360. Hemsley in Journ. Linn. Soc. Bot. LXXXVI (1905), 452. Rehder in Sargent, Trees & Shrubs, I (1905), 159, t. 80; II (1907), 26; in Sargent, Pl. Wilson I (1911), 90; in Journ. Arn. Arb. VII (1926), 219; Manual Cult. Trees & Shrubs, (1927), 560. Schneider, Illustr. Handb. Laubb. II (1907), 204, figs. 132 m-p. Thatcher in Gard. Chron. LXXII (1922), 119. Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China). Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 166; VIII (1933), 166; XI (1938), 94 (Monogr. Chin. Aceraceae).

Acer oxyodon Franchet, mss. in Herb. Paris.

Acer stachyanthum Franchet, mss. in Herb. Paris.

Small tree, usually 5 to 10 metres high, rarely up to 15 metres high, bark grey or brownish-grey; branchlets slender, glabrous, those of the current year green or purplish-green, those more than one year old grey or brownish-grey and with numerous conspicuous ovate lenticels; winter-buds small, ellipsoid, scales 6, ciliate on the margin. Leaves opposite, deciduous, chartaceous, rounded or truncate and occasionally subcordate at the base, 9-11 cm. long, 8-12 cm. broad, usually 5-lobed, rarely 7-lobed, lobes ovate or triangular-ovate, acuminate, sharply and appressed serrulate on the margin except entire near the base of lobes, sinuses acuminate, reaching one-third to nearly half way to the middle of the blade, upper surface deep green, glabrous, lower surface light green and distinctly reticulate, puberulous and with tufts of whitish hairs on the axils of the primary and secondary nerves; petioles 4-9 cm. long, slender, cylindrical, glabrescent. Flowers numerous, androgynous, in pubescent compound panicle racemes, 9-12 cm. long, 1-1.8 cm. in diameter, on peduncles 2-3.5 cm. long; sepals 4, yellowish-green, ovate or broadly ovate, obtuse, glabrous outside, villous inside, and especially on the margin, about 1.8-2 mm long; petals 4, yellowish-white, obovate, slightly shorter than the sepals; stamens 8, about 3-4 mm long, in staminate flowers much longer than in perfect flowers, filaments glabrous, anthers yellowish-brown, disk glabrous (densely white-villous in the original description), extrastaminal; ovary densely villous with yellowish hairs, rudimentary in staminate flowers and covered with densely long yellowish hairs, style nearly glabrous and about 2 mm long, stigma short and spreading or curved; pedicels slender, pilose, about 3-4 mm long. Fruits, greenish-purple or yellowish-purple samaras; nutlets strongly convex and veined, nearly rounded, about 5 mm. in diameter, densely pubescent while young and then glabrous; wings included nutlets 3-3.5 cm. long, 1 cm. broad, spreading horizontally or slightly backward.

MOUNT OMEI: Chu-tien, alt. 1800 m., in forests, tree 15 metres high, leaves deep green above, pale green below, young samaras green with purplish wings, occasionally, *I. C. Lee*, No. 2940, July 23, 1940; Chiu-lao-tung, alt. 1800 m., *T. H. Tu*, No. 33, in 1935; same locality, *B. C. Chou*, Nos. 7773 & 7979, July to September, 1938; same locality, in forests, small tree 12 metres high, samaras purplish, common, *W. P. Fang*, No. 12796, July 31, 1938; same locality, *S. S. Chien*, No. 6083, July 11, 1937; same locality; *S. N. Hsu*, without number, in 1938; without precise locality, *C. W. Yoo*, Nos. 4749, 4165 & 4009, in 1939.

SIKANG: Tien-chuan-hsien, *K. L. Chu*, No. 2629, in 1934.

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

This species was discovered by Dr. Augustine Henry at Wu-shan-hsien in Eastern Szechuan. It has been found very commonly in Eastern Szechuan and Western Hupeh. The distribution of this species is limited to the region which is bounded to the north by the Tsing-ling Range in Shensi, by Kang-tin-hsien in Sikang to the west and by Yi-liang-hsien in Yunnan to the south. On Mount Omei it occurs about half way of the mountain. The compact racemose inflorescences, the broadly ovate sepals which are densely villous on the inner surface, the glabrous disk and the strongly convex and

veined nutlets are quite enough to distinguish this species from closely allied ones.....
..... W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a perfect flower (enlarged 10 times); 4, a staminate flowers (enlarged 10 times).]

圖版一百三十三

毛花槭

槭樹科

小喬木常高五至十公尺，稀達十五公尺；樹皮灰色或灰褐色；小枝細而無毛，當年生枝綠色或紫綠色，多年生枝灰色或褐色，常具多數顯著之卵形皮孔；冬芽小，橢圓形，鱗片六枚，邊緣具纖毛。葉對生，冬季凋落，紙質，基部圓形或楔形，偶亦成亞心臟形，長九至十一公分，寬八至十二公分，常五裂，稀七裂，裂片卵形或三角狀卵形，漸尖，除近基部全緣外，餘皆具密微而尖銳之鋸齒，裂片間凹穴漸尖，深及葉片全長三分之一或二分之一，葉表面深綠色，無毛，葉背而亮綠色，具顯明之網脈，脈被絨毛，在大小側脈之腋間具叢生之淡白色絨毛；葉柄長四至九公分，圓柱形，纖細而光滑。花多數，生於長二公分至三分半之花梗上；萼片四枚，黃綠色，卵形或闊卵形，先端鈍形，外面無毛，內面被絲狀毛，邊緣尤多，長約一公厘半至二公厘；花瓣四枚，黃白色，倒卵形，微短於萼片；小蕊八本，長約三至四公厘，在小蕊花中之小蕊較在兩性花中者為長，花絲無毛，花藥黃褐色；花盤無毛（原記載誤謂其具叢密之白色絲狀毛），生於小蕊之外圍；子房密生絲狀毛，在小蕊花中子房不發育，代以極密之淡黃色長毛。花柱近於光滑，長約二公厘，柱頭短，眼圓或彎曲；小花梗纖細，被細毛之毛，長約二至四公厘。果為紫色或黃紫色之翅果；小堅果凸出成卵圓形並具脈紋，直徑約五公厘，幼嫩時被濃密之毛，長大後毛即脫落；翅翅小堅果長三公分至三公分半，寬一公分，伸展成一平面或略反捲。

本種產於峨眉山之初殿及九老洞，海拔一千八百公尺之森林中。西康之天全縣亦產之。四月開花，九月果可成熟。

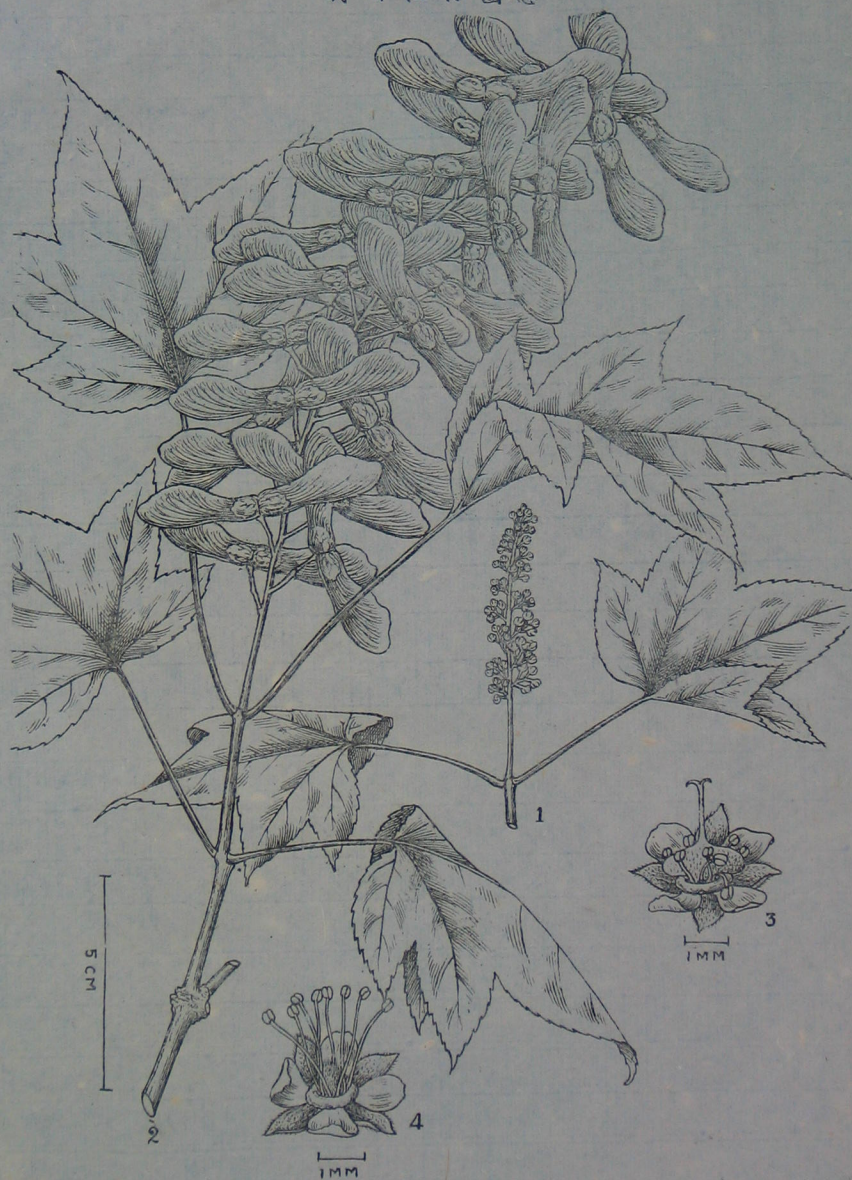
本種分佈於陝西，湖北，四川，西康及雲南等省。

本種為亨利氏發見於川東之巫山縣。在湖北西部及四川東部，極為常見。其分佈則北限於陝西之秦嶺，西限於西康之康定縣，南止於雲南之宜良縣。在峨眉山僅在山之中部產之。

此種密集之總狀花序，圓卵形萼片之內面具纖密之絲狀毛，無毛之花盤，以及小堅果特別凸出成卵圓形並具脈紋。均足使其與相近之種，易於辨別。

圖解：1. 花枝（原大）； 2. 果枝（原大）； 3. 兩性花（放大十倍）； 4. 小蕊花（放大十倍）。

BRACQ: *Trip. chin. japon.*, A. A. Cav. No. 2825, in 1894.
Distribution: Shensi, Szechuan, Yunnan.
This species was discovered by Dr. Augustin Henry at Wenchuan-shan in Eastern Szechuan in 1894. It is found very commonly in Eastern Szechuan and Western Yunnan. The distribution of this species is limited to the region which is bounded to the north by the Tibetan range in China, to the east by the Hsueh-shan range in Yunnan to the west and by Yunnan to the south. The comparative botanical study of this species with other species of the genus *Acer* in the region of the Himalayas and the Hsueh-shan range in Yunnan is being carried out by the author.



133. *Acer erianthum* Schwerin.

Plate 134.

ACER CAUDATUM Wallich var. **PRATTII** Rehder.

Aceraceae.

Acer caudatum Wallich, Pl. As. Rar. II (1831), 4, 28, t. 132, in part, description of staminate flower and synon. *Acer pectinatum* excl. Cat. 1228 (1828)?

This species is confined in the Sikkim-Himalayas and has not been found in China.

Acer caudatum Wallich var. **Prattii** Rehder in Sargent, Trees & Shrubs, I (1905), 164; II (1907), 26; in Fedde Repert. Nov. Spec. I (1905), 7; in Sargent, Pl. Wilson. I (1911), 91. - Leveille, Cat. Illustr. Pl. Sentecheouen, (1918), 178, mss. - Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China). - Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 157; VIII (1932), 165; XI (1939), 101 (Monogr. Chin. Aceraceae).

Small deciduous tree usually 10 metres high, rarely up to 15 metres high, bark grey or dark grey; branchlets stout, those of the current year purple or purplish-green, densely yellowish-pubescent, those more than one year old grey or dark grey, glabrescent, with conspicuous elliptical lenticels. Winter-buds axillary, ovoid; outer scales ovate, densely yellowish-pubescent on the outer surface, inner accrescent scales obovate, acuminate, densely yellowish-pubescent. Leaves opposite, deciduous, chartaceous, deeply cordate or cordate at base, from 8 to 12 cm. long, and usually as broad or slightly broader than long, 5-lobed, rarely 7-lobed; lobes triangular-ovate, acuminate, doubly and incisively serrate; sinuses acute, reaching about one-third to the middle of blade; upper surface deep green, glabrescent except yellowish-pubescent on the slightly impressed nerves; lower surface pale green, yellowish-pubescent, especially densely so on the nerves; petioles 4-9 cm. long, terete, densely yellowish-pubescent. Flowers andro-monoecious, in rufously villous compact terminal racemose panicles 2-10 cm. long, on pubescent peduncles 3-5 cm. long, appearing after the developing of leaves; sepals 6, yellowish-green, ovate or ovate-lanceolate, about 3 mm. long, sparsely pubescent outside; petals 5, yellowish-white, obovate or linear-obovate, acutish, 6 mm. long, glabrous; stamens 8, glabrous, slightly longer than petals in staminate flowers, as long as sepals in perfect flowers, inserted near the middle of disk; anthers purple, globose or oblong; disk lobed, glabrous; ovary densely covered with yellow tomentum, rudimentary in staminate flowers, style slender, 1.5 mm. long, with widely spreading stigmas; pedicels very slender, 5-8 mm. long, pubescent. Fruits, brownish samaras, in upright racemose fruiting inflorescences; nutlets subellipsoid, distinctly veined, 8 mm. long, 6 mm. broad; wings included nutlets 2.5 cm. long, 7 mm. broad, spreading erectly; pedicels very slender, 5-8 mm. long, pubescent.

MOUNT OMEI: Ta-cheng-ssu, alt. 2300 m., T. H. Tu, nos. 391 & 671, in 1935; same locality, S. S. Chien, No. 6080, July 12, 1937; same locality, small tree 6-12 m. high, bark blackish brown, flowers small, light green, common, W. W. Ma, No. 2589, June 23, 1940; same locality, W. W. Ma, No. 2886, July 16, 1940; Chieh-yin-tien, alt. 2539 m., small tree 8 metres high, flowers greenish, W. F. Fong, No. 18999, June 18, 1942; Chin-ting, alt. 3133 m., H. C. Chow, No. 7703, July 1, 1933; southwest of Mount Omei, Opien-hsien, Yen-ching-ki, W. O. Cheng, No. 6213, in 1936; without precise locality, C. W. Yao, Nos. 2817, 2743, 4007, 4307 & 4718, in 1939.

SIKANG: Tien-chuan-hsien, K. L. Chu, Nos. 2641, 2770, 3284 & 3499, June 1936; same locality, P. O. Tai & C. M. Teng, Nos. 4341 & 4303, August 1939.

This variety was discovered by Mr. A. E. Pratt at Kang-tin-hsien in Eastern Sikang and has been found only in Eastern Sikang and Western Szechuan. It is a very distinct variety and differs from the type species in the pubescent branchlets and in the pubescent lower surface of the leaves which have finer and closer serrations than those of the type species. W. P. Fang.

Distribution: Szechuan and Sikang.

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

圖版一百三十四

巴特尖葉槭 變種

槭樹科

尖葉槭 別名：長尾槭。

本種之產地，限於喜馬拉雅山南部印度之哲孟雄，不產於中國。

巴特尖葉槭 變種

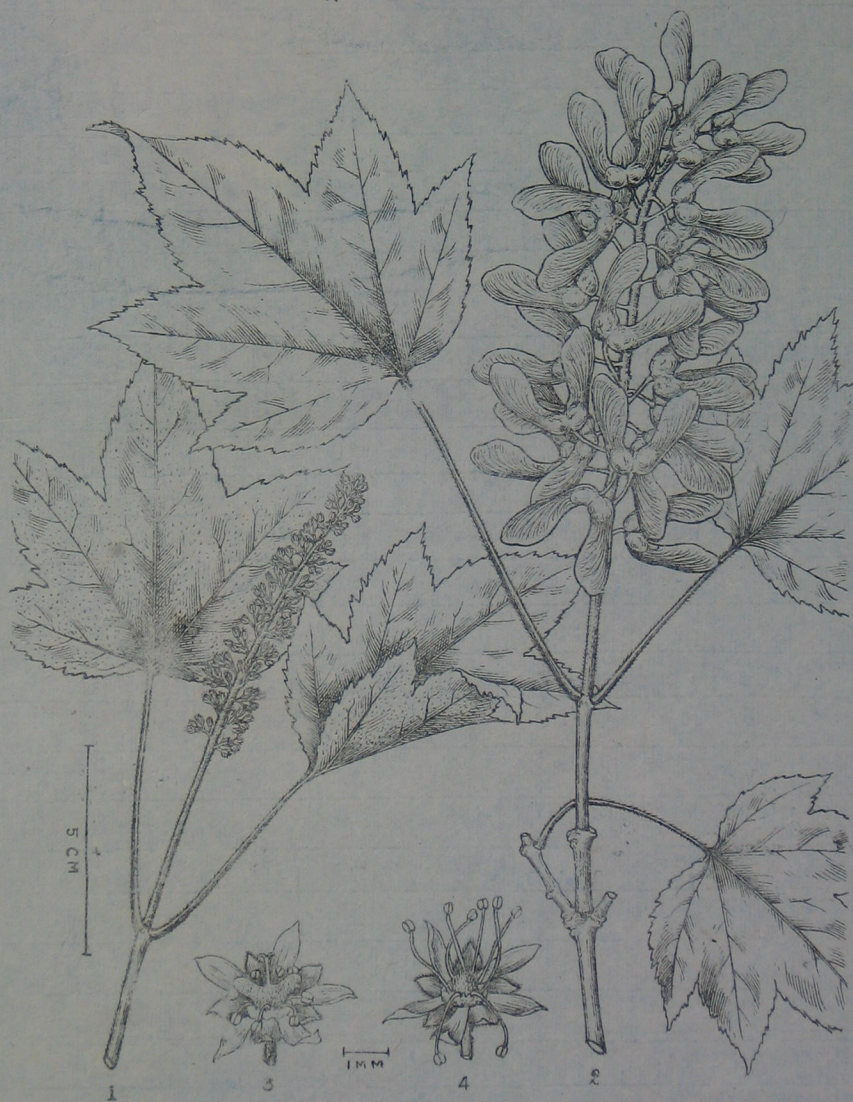
落葉小喬木，常高十公尺，稀達十五公尺；樹皮灰色或暗灰色；小枝粗壯，當年生之枝紫色或紫綠色，被濃密之淡黃色細毛，多年生之枝灰色或暗灰色，光滑毛無，皮孔顯著常成橢圓形；冬芽腋生，卵圓形，外鱗片卵形，被濃密之淡黃色細毛，內鱗片長大後成倒卵形，漸尖，被濃密之淡黃色細毛。葉對生，紙質，冬季凋落，基部深心臟形或心臟形，長八至十二公分，寬與長相等或較寬，五裂稀七裂；裂片三角狀卵形，漸尖，具銳利之雙齒；裂片間之凹穴銳尖，深及中裂片全長三分之一；葉表面深綠色，除在微凹之脈上具淡黃色毛外，餘皆光滑；背面淡綠色，被淡黃色絨毛，在脈上特別濃密；葉柄長四至九公分，圓形，被濃密之淡黃色絨毛。小蕊花與兩性花同株，着生於密覆而生之總狀圓錐花序上，序長八至十公分，被紅褐色之絲狀長毛，花梗長三至五公分，被絨毛，長葉始開放；萼片五枚，黃綠色，卵形或卵狀披針形，長約三公厘，外面被稀疏之絨毛；花瓣五枚，黃白色，倒卵形或線狀倒卵形，銳尖形，長六公厘，無毛；小蕊八本，無毛，在小蕊花中顯著長於花瓣，在兩性花中則與萼片等長，着生於花盤之中間，花藥紫色，圓球形或長圓形；花盤深裂，無毛；子房蓋被以濃密之黃色絨毛，在小蕊花中不發育，花柱纖細，長一公厘半，具長而張開之柱頭；小花梗纖細，長五至八公厘，被絨毛。果為淡褐色之翅果，着生於直立之總狀果序上，小堅果呈亞圓形，具顯明之脈紋，長八公厘，寬六公厘；翅連同小堅果長二公分半，寬七公厘，直立伸張；果梗纖細，長五至八公厘，被絨毛。

本變種產於峨眉山之大乘寺，接引殿及金頂，海拔二千三百公尺至三千一百公尺之叢林中。峨眉山西南之峨邊縣鹽井溪及西康之天全縣亦產之。六月開花，九月果可成熟。

本變種分佈於四川及西康兩省。

本變種原為巴特氏發見現於西康之康定縣，其產地僅限於四川西部及西康東部。此變種之不同於原種者，在其有絨毛之小枝及其邊緣具密鋸齒與背面被毛之葉。

圖解：1. 花枝（原大）；2. 果枝（原大）；3. 兩性花（放大十倍）；4. 小蕊花（放大十倍）。



134. *Acer caudatum* Wallich var. *Pattii* Reider

Plate 138.

ACER OBLONGUM Wallich.

Aceraceae.

Acer oblongum Wallich apud De Candolle, Prodr. I (1824), 693; Wallich, Pl. As. Rar. II (1831), 4. Spach in Ann. Sci. Nat. 2 ser. II (1834), 168 (Rev. Acer.).- Bentham, Fl. Hongkong, (1861), 47, in part.- Brandis, For. Fl. Brit. Ind. (1874), 110.- Hiern in Hooker f. Fl. Brit. Ind. I (1875), 693.- Maximowicz in Bull. Acad. Sci. St.-Pettersb. XXVI (1880), 442, in part; in Mel. Biol. X (1880), 599, in part.- Nicholson in Gard. Chron. n. ser. XV (1881), 832.- Forbes & Hemsley in Journ. Linn. Soc. Bot. XXIII (1886), 141 (Ind. Fl. Sin.), in part.- Pax in Engler, Bot. Jahrb. VII (1886), 208; in Hooker, Icon. Pl. XIX (1889), under t. 1897; in Engler & Prantl, Pflanzenfamilien, III, pt. 5 (1896), 271; ex Diels in Engler, Bot. Jahrb. XXIX (1900), 449 (Fl. Centralchina); in Engler, Pflanzenreich, Heft 8 (IV, 163) (1902), 31.- Wesmael in Bull. Soc. Roy. Bot. Belg. XXIX (1890), 42.- Dippel, Laubh. II (1892), 410, fig. 188.- Graf von Schwerin in Gartenfl. XLII (1893), 223.- Collett, Fl. Siml. (1902), 98.- Henry in Gard. Chron. XXXIII (1903), 62 (Chin. Maples).- Vietch in Journ. Roy. Hort. Soc. XXIX, pt. 3 (1904), 253, 360, fig. 93.- Rehder in Sargent, Trees & Shrubs, I (1905), 179; in Sargent, Pl. Wilson. I (1911), 92; in Journ. Arn. Arb. VII (1926), 221, XV (1934), 5; Manual Cult. Trees & Shrubs, (1927), 571.- Matsumura & Hayata in Journ. Coll. Sci. Imp. Univ. Tokyo, XXII (1908) (Enum. Fl. Formos.).- Schneider, Illustr. Handb. Laubh. II (1907), 214, figs. 141 c & 142 i-n.- Burhill in Record. Bot. Surv. IV (1910), 103.- Koizumi in Journ. Coll. Sci. Imp. Univ. Tokyo, XXXII, art. I (1911), 55, t. 29 (Rev. Acer. Jap.).- Leveille, Cat. Pl. Yunnan. (1917), 252; Cat. Illustr. Pl. Sentsheouen, (1918), 179, mss.- Chun, Chin. Econ. Trees, (1921), 230.- Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China).- Hu in Science, Sci. Soc. China, IX (1924), 840, excl.- Bean, Trees & Shrubs, hardy Brit. Isl. I (1929), 150.- Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 167, in part, specimens cited from Chekiang, Fukien, Kwangtung and a part from Hunan excl.; VIII (1932), 170, XI (1933), 133.- Metcalf in Lingn. Sci. Journ. XI (1932), 194, in part.- Handel-Mazzetti, Symb. Sin. VII (1933), 641, in part, excl. specimens cited from Hunan.

Acer laurifolium D. Don, Prodr. Fl. Nepal. (1825), 249.

Acer oblongum var. 1, *glaucum* Graf von Schwerin in Gartenfl. XLII (1893), 223.

Acer Puzii Franchet var. *integrifolia* Leveille, Fl. Kouy-Tcheou, (1915), 383, name only.

Tree usually 10, rarely up to 20, metres high, bark grey or dark grey, rough, branchlets slender, those of the current year purple or purplish-green, glabrescent or sparsely pubescent, those more than one year old brown or greyish-brown, glabrous; winter-buds small, ellipsoid, scales imbricate, ovate, sparsely pubescent outside, ciliate on the margin. Leaves opposite, persistent, coriaceous, ovate-oblong or ovate, 3-11 cm. long, 3-4.5 cm. broad, entire, rounded or broadly cuneate at the base, acute or obtuse at the apex, upper surface deep green, glabrous, lower surface pale green, whitish glaucous, midrib and 5 to 6 pairs of lateral nerves conspicuous above, prominent below, the two basal lateral nerves reaching usually to one-third or one-half of the blade; petioles 2-3 cm. long, slender, glabrous. Flowers numerous, green or yellowish-green, andro-monoecious, in whitish-pubescent corymbs, terminal on leafy branchlets; sepals, 5, oblong, obtuse, 3-4 mm. long; petals, 5, obovate, 5 mm. long; stamens 8, as long as or slightly longer than petals, slightly shorter in perfect flowers, filaments slender, glabrous, anthers rounded, yellow, 2-celled; disk extrastaminal, glabrous, slightly lobed; ovary compressed, pubescent, rudimentary in staminate flowers, style short and glabrous, stigmas recurved; pedicels 1-2 cm. long, slender, pubescent. Fruits, samaras, purple while young, brownish-yellow when matured; nutlets strongly convex, 7 mm. long, 5 mm. broad, pubescent while young, glabrescent when matured; wings included nutlets 2.5-3 cm. long, 8 mm. broad, spreading at acute angles; pedicels 2-3 cm. long, slender, sparsely pubescent or glabrescent.

MOUNT OMEI: Lei-yin-ssu, alt. 700 m., small tree 6 metres high, young samaras purple, *O. L. Chow*, No. 5973, April 13, 1942; Hui-fu-ssü, tree 8 metres high, fruits greenish, *W. P. Fang*, No. 19007, June 28, 1942; Niu-hsin-ssu, alt. 850 m., small tree 5 metres high, flowers greenish-white, *W. P. Fang*, No. 18000, April 16, 1942; Chia-tze-wan, small tree 5 metres high, flowers greenish-white, *W. P. Fang*, No. 18532, April 18, 1942; en route from Niu-hsin-ssu to Taping, alt. 1300 m., in forests, small tree 5 metres high, young samaras purple, *C. L. Sun*, No. 8023, May 17, 1940; Pao-ku, alt. 1200

m., small tree 8 metres high, young fruits reddish. *W. P. Fang*, No. 18552, April 28, 1942; same locality, on slopes, small tree 8 metres high, fruits purple, *T. C. Lee*, No. 8000, July 25, 1940; Hou-tzu-po, alt. 1000 m., in forests, small tree 12 metres high, young samaras purple, *W. P. Fang*, No. 14663, May 21, 1940; same locality, on slopes, small tree 6 metres high, fruits greenish-yellow, common, *T. C. Lee*, No. 2800, July 12, 1940; She-tao-tui, alt. 1300 m., in forests, small tree 6 metres high, fruits purple, common, *T. C. Lee*, No. 2709, July 12, 1940; same locality, in forests, small tree 8 metres high, fruits with green nuts and purple wings, occasionally, *T. C. Lee*, No. 5128, August 1, 1940; Tien-chieh-feng, alt. 1400 m., small tree 5 metres high, flowers greenish, *W. P. Fang*, No. 18680, April 16, 1942; near San-tou-chiao, in forests, small tree 6 metres high, bark brown, flowers greenish-white, *C. L. Sun*, No. 1756, April 25, 1940; Hsi-hsin-so, alt. 1400 m., in forests, small tree 5 metres high, bark grey, flowers light green, *C. L. Sun*, No. 1921, May 8, 1940; same locality, in forests, small tree 5 metres high, bark brown, *C. L. Sun*, No. 2248, May 31, 1940; en route from Hsi-hsin-so to Chu-tien, in forests, small tree 9 metres high, young samaras purple, *C. L. Sun*, No. 2213, May 28, 1940; Chu-tien, alt. 1800 m., in forests, small tree 8 metres high, leaves glaucous beneath, rare, *W. P. Fang*, No. 14831, May 21, 1940.

EASTERN SZECHUAN: Wu-ki-hsien, *K. L. Chu*, Nos. 1714 & 1717, in 1935.

Distributions: Shensi, Hupeh, Szechuan, Kweichow, Yunnan; Himalaya.

This Himalayan species is widely distributed in Western China. Although all the characteristics are variable it is easily recognized by its ovate-oblong leaves, usually glaucous on the lower surface and by its convex nut-like samaras, pubescent while young and glabrescent when matured and with the wings spreading at acute angles..... *W. P. Fang*.

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

圖版一百三十五

飛蛾槭

槭樹科

喬木常高十公尺，稀達二十公尺；樹皮灰色或灰褐色，粗糙；小枝纖細，當年生枝紫色或紫綠色，光滑或被稀疏之絨毛，多年生枝褐色或灰褐色，無毛；冬芽小，橢圓形，鱗片覆瓦狀排列，卵形，外面被稀疏之絨毛，邊緣具纖毛。葉對生，常綠，革質，卵狀長圓形或卵形，長八至十一公分，寬三至四公分半，全緣，基部圓形或廣楔形，先端銳尖或鈍形，表面深綠色，無毛，背面淡綠色，被淡白色之粉狀附着物，中脈及五至六對之側脈在葉表面顯明，在葉背面則突出，基部之二側脈常達葉片全長三分之一或二分之一；葉柄長二至三公分，細而無毛。花多數，綠色或黃綠色，小蕊花與兩性花同株，着生於被淡白色絨毛之繖房花序，頂生於着葉之小枝上；萼片五枚，長圓形，先端鈍形，長三至四公厘；花瓣五枚，倒卵形，長五公厘；小蕊八本，與花瓣等長或稍長，在兩性花中則較短，花絲纖細而無毛，花藥圓形，黃色，二室；花盤生於小蕊之外圍，無毛，微裂；子房扁形，被絨毛，在小蕊花中不發育，花柱短而無毛，柱頭反捲；花梗長一至二公分，纖細，被絨毛。果爲翅果，幼嫩時爲紫色，長成時爲褐黃色；小堅果凸出成長卵圓形，長七公厘，寬五公厘，幼嫩時有毛，長成時無毛；翅連小堅果長二公分半至三分，寬八公厘，伸展成銳角；果梗長二至三公分，細而光滑，或被稀疏之絨毛。

此種產於峨眉山之雷音寺，會佛寺，牛心寺，猴子坡，蛇倒退，天池峯，息心寺及初殿，海拔七百公尺至一千八百公尺之森林中或路旁。川東之巫溪縣亦產之。四月開花，八月果可成熟。

此種分佈於陝西，湖北，四川，貴州，雲南；印度之喜馬拉雅山。

本種原產於喜馬拉雅山，分佈於華西各省。其特性雖時有變異，但以葉爲卵狀長圓形，葉背面被白粉，且凸出如長卵之小堅果，幼嫩時有毛，成熟時則光滑，其翅則伸展爲銳角，故易辨別。

圖解：1. 花枝（原大）；2. 果枝（原大）；3. 兩性花（放大五倍）；4. 小蕊花（放大五倍）。

峨眉植物圖志



135. *Acer oblongum* Wallich.

Plate 136

ACER FABRI Hance.

Aceraceae.

Acer Fabri Hance in Journ. Bot. XXII (1884), 76.— Pax in Engler, Bot. Jahrb. VII (1886), 216; in Engler & Prantl, Pflanzenfamilien, III, pt. 5 (1896), 271.— Forbes & Hemsley in Journ. Linn. Soc. Bot. XXIII (1886), 140.— Wesmæel in Bull. Soc. Roy. Bot. Belg. XXIX (1890), 42.— Graf von Schwerin in Gartenfl. XLII (1893), 229.— Bretschneider, Hist. Europ. Bot. Discover. China, (1898), 685.— Dunn in Kew Bull. Add. Ser. X (1912), 67 (Fl. Hongkong & Kwangtung).— Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China).— Merrill in Lingn. Sci. Journ. V (1927), 117.— Metcalf in Lingn. Sci. Journ. XI (1932), 204, in part, excl. specimen cited Ching's 7389 from Kwangsi.— Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 172.

Acer oblongum Wallich var. *concolor* Pax in Hooker icon. Pl. XIX (1889), under t. 1897; ex Diels in Engler, Bot. Jahrb. XXIX (1900), 449. (Fl. Centralchina), in part, incl. specimen cited Henry's 7677 from Hupeh; in Engler, Pflanzenreich, Heft 8 (IV. 163) (1902), 32, in part, incl. specimen cited Henry's 7677 from Hupeh.— Graf von Schwerin in Gartenfl., XLII (1893), 229.— Henry in Gard. Chron. ser. 3, XXXIII (1903), 62.— Rehder in Sargent, Trees & Shrubs, I (1905), 180, in part.— Metcalf in Lingn. Sci. Journ. XI (1932), 196, in part, incl. specimen cited Henry's 7677 from Hupeh.

Acer laevigatum Wallich var. *Fargesii* (Rehder) Sargent apud Veitch in Journ. Roy. Hort. Soc. XXIX (1904), 353, 380, fig. 91.

Acer laevigatum Pax (non Wallich) in Engler, Pflanzenreich, Heft 8 (IV. 163) (1902), 32, in part, incl. specimen cited from Canton & syn. *Acer Fabri*.— Rehder in Sargent, Trees & Shrubs, I (1905), 180, in part, incl. syn. *Acer Fabri*.

Acer Fargesii Franchet apud Rehder in Sargent, Trees & Shrubs, I (1905), 180; in Fedde Repert. Nov. Spec. Reg. Veg. I (1905), 7.

Acer Prainii Leveille in Fedde Repert. Nov. Spec. Reg. Veg. X (1912), 432; Fl. Kouy-Tcheou, (1915), 383.

Acer cordatum Pax, var. *microcordatum* Metcalf in Lingn. Sci. Journ. XI (1932), 199, in part, incl. specimen cited Chun's 6700 from Hainan.

Acer Fabri Hance var. *rubicarpum* Metcalf in Lingn. Sci. Journ. XI (1932), 206, in part, incl. specimens cited Ching's 5998 from Kwangsi, Fang's 784 & 824 from Szechuan, Tso's 20289 & 20950 from Kwangtung.— Handel-Mazzetti, Symb. Sin. VII (1933), 641.— Rehder in Journ. Arn. Arb. XV (1934), 6.

Acer reticulatum Metcalf (non Champion) in Lingn. Sci. Journ. XI (1932), 208, in part, incl. specimen cited Ching's 7680 from Kwangsi.

Small tree, usually about 12 metres high, rarely to 15 metres high, bark brownish-grey or blackish-grey; branchlets terete, slender, glabrous, those of the current year green or purplish-green, those more than one year old brownish-green; winter-buds small, ellipsoid, scales ovate, imbricate, pubescent outside, ciliate on the margin, accrescent scales oblanceolate, pubescent along the middle. Leaves opposite, persistent, coriaceous, lanceolate, oblong-lanceolate or oblong-oblanccolate, 9-12 cm. long, 2.5-3.5 cm. broad, cuneate or broadly cuneate at the base, acuminate or caudate-acuminate on the apex, entire on the margin, upper surface deep green, glabrous, very smooth, lower surface pale green, glabrous rarely with tufts of pubescence at the axils of nerves, midrib conspicuous above, prominent below, lateral nerves 5-7 pairs conspicuous on both surfaces; petioles stout, 1-1.5 cm. long, grooved above, rounded below. Flowers andro-monoecious, in glabrous, paniculate corymbs; sepals 5, purple, ovate or ovate-oblong, 5 mm. long, sparsely pubescent outside; petals 5, white, obovate, shorter than sepals; stamens 8, usually 6-8 mm. long, shorter in perfect flowers, filaments glabrous, anthers yellow, ellipsoid, 2-celled; ovary compressed, glabrous, style short; stigmas recurved. Fruits, purple samaras, with ellipsoid outlets 6 mm. long, 3 mm. in diameter and wings 2-2.8 cm. long, 8-10 mm. broad, spreading at obtuse or right angles; pedicels 1-1.8 cm. long, very slender, glabrous.

MOUNT OMEI: Lei-yin-ssu, alt. 700 m., small tree 14 metres high, young samaras purple, C. L. Chou, No. 5971, April 26, 1942; Ching-yin-ko, alt. 660 m., small tree 6 metres high, samaras with purple wings, W. P. Fang, No. 12543, July 27, 1938; near Hung-chun-ping, alt. 1147 m., on slopes, small tree 8 metres high, flowers purple, T. C. Lee, No. 4424, March 27, 1940; same locality, in woods, small tree 4 metres high, flowers purple, C. L. Sun, No. 1655, April 22, 1940, She-tao-tui, alt. 1300 m., in thickets, small tree 6 metres high, flowers purple, common, T. C. Lee, No. 4406, April 2, 1940; Ta-ping, alt. 1400 m., H. C. Chou, No. 8150, August 14, 1939; same locality, in woods, small tree 4 metres high, samaras purple, C. L. Sun, No. 2017, May 17, 1940; same locality, in forests, small tree 5 metres high, flowers purple, W. P. Fang, No. 16074, April 1941; Pao-ku, shrub 3 metres high, flowers with purple sepals and green petals, W. P. Fang, Nos. 18242 & 18284, April 1, 1942; San-tou-chiao, alt. 1800 m., W. P. Fang, No. 17491, August 9, 1941.

SZECHUAN: Nanchuan-hsien, T. H. Yu, No. 2874, April 20, 1932; same locality, K. L. Chu, Nos. 877, 1566 & 1587, in 1934; Kuan-hsien, Mount Tsing-cheng, in forests, tree 14 metres high, S. S. Chien, No. 5656, May 24, 1938.

SIKANG: Tien-chuan-hsien, alt. 1360., small tree 5 metres high, K. L. Chu, No. 2708, April 9, 1936.

KWANGSI: without precise locality, G. Wong, No. 39412; without precise locality, Z. S. Chung, No. 31726.

Distribution: Kiangsi, Hupeh, Szechuan, Kweichow, Kwangtung, Kwansi.

This species was discovered by the late Dr. Faber in 1863 at Lo-fan-shan in Kwangtung province. It is very near *Acer laevigatum* Wallich. From that species it differs in having the smooth leaves which are not prominent netted even after drying. The wings spread at obtuse or right angles and the samaras are usually purple, rarely changing to yellowish after drying. On Mount Omei it is usually found on the lower slopes, below 1400 metres in altitude. W. P. Fang.

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

圖版一百三十六

費伯槭

槭樹科

小喬木，常高十公尺，稀達十五公尺；樹皮褐灰色或黑灰色；小枝細圓而無毛，當年生枝綠色或紫綠色，多年生枝褐綠色；冬芽小，橢圓形，鱗片卵形，覆瓦狀排列，外面被絨毛，邊緣具纖毛，開花後長大之鱗片為倒披針形，背面之中脊被絨毛。葉對生，宿存，革質，披針形，長圓倒披針形，長九至十二公分，寬二分半至三分半，基部楔形或寬楔形，先端漸尖或尾狀漸尖，全緣，葉表面深綠色，無毛，甚平滑，背面灰綠色，無毛，葉脈腋間亦具柔毛之絨毛，中脈在葉表面而顯出，在葉背面則突出，側脈五至七對，在葉兩面皆甚顯著；葉柄粗壯，長一公分至一公分半，上面有溝，下面深圓。花為小蕊花與兩性花同株，着生於無毛之圓錐狀繖房花序；萼片五枚，紫色，卵形或卵狀長圓形，長五公厘，外被稀疏絨毛；花瓣五枚，白色，倒卵形，較萼片短；小蕊八本，常長六至七公厘，在兩性花中則較短，花絲無毛，花藥黃色；橢圓形，二室；子房扁形，無毛，花柱短，柱頭反捲。果為紫色之翅果，小果橢圓形，長六公厘，直徑三公厘，翅長二公分至二公分半，寬八至十公厘，伸展成鈍角或直角；果梗長一公分至一公分半，纖細，無毛。

此種產峨眉山之雷音寺，清音閣，洪佛坪，蛇倒退，太平及三道橋等處，海拔七百公尺至一千四百公尺之叢林或草坡。四川之南川縣，瀘縣及西康之天全縣亦產之。三四月開花，九月果始成熟。

此種分佈於江蘇，湖北，四川，貴州，廣東及廣西等省。此種為費伯博士於一八八三年發見廣東之羅浮山。與光葉槭相近，所不同者，在其有平滑之葉，乾枯後，其細脈亦不顯著，果翅伸展為鈍角或直角，翅果乾後常為紫色，稀變為淡黃色。此種在峨山之分佈，常在一千四百公尺以下之地。

圖解：1. 花枝（原大）；2. 果枝（原大）；3. 兩性花（放大五倍）；4. 小蕊花（放大五倍）。

峨眉植物圖志



136. *Acer fabri* Hance

Plate 137.

ACER LAEVIGATUM Wallich.

Aceraceae.

Acer laevigatum Wallich, *Pl. As. Rar.* II (1831), 3, t. 104; Wallich, *Cat.* (1836), no. 1223.— Spach in *Ann. Sci. Nat.* 2 ser. II (1834), 165.— Walpers, *Repert. Bot. Syst.* I (1842), 409.— Brandis, *Forest. Fl. Brit. Ind.* (1874), 110.— Hieron in *Hooker f. Fl. Brit. Ind.* I (1875), 693.— Pax in *Hooker Icon. Pl.* XIX (1889), under t. 1697; in *Engler & Prantl, Pflanzenfamilien*, III, pt. 8 (1896), 271; ex Diels in *Engler, Bot. Jahrb.* XXIX (1900), 449 (Fl. Centrarchina); in *Engler, Pflanzenreich*, Heft 8 (IV. 163) (1902), 22, in part, excl. *Syn.* cited *Acer reticulatum* & *Acer Fabri*.— Graf von Schwerin in *Gartenfl.*, XLII (1893), 229.— Henry in *Gard. Chron.* ser. 3, XXXIII (1903), 62 (Chin. Maples).— Veitch in *Journ. Roy. Hort. Soc.* XXIX, pt. 3 (1904), 360.— Hemsley in *Journ. Linn. Soc. Bot.* XXXVI (1905), 452.— Rehder in *Sargent, Trees & Shrubs*, I (1905), 180, in part, excl. *Acer Fabri*; II (1907), 26; in *Sargent Pl. Wilson.* I (1911), 62; *Manual Cult. Trees & Shrubs*, (1927), 572.— Schneider, *Illustr. Handb. Laubh.* II (1807), 212, figs. 141 d & 142 b-f.— Leveillé, *Cat. Illustr. Pl. Sentecheouen*, (1918), 178, mss.— Chung in *Mem. Sci. Soc. China*, I (1924), 149 (Cat. Trees & Shrubs China).— In *Notes Roy. Bot. Gard. Edinb.*, XVII (1930), 304, 343.— Fang in *Contrib. Biol. Lab. Sci. Soc. China*, Bot. Ser. VII (1932), 107, in part, excl. specimens cited from Kwangtung & Kwangsi; VIII (1932), 172; XI (1933), 154.— Metcalf in *Lignin. Sci. Journ.* XI (1933), 207.— Handel-Mazzetti, *Symb. Sin.* VII, Lieferung 3 (1933), 641.

Acer laevigatum Wallich var. 1, *typicum* Pax in *Engler, Bot. Jahrb.* VII (1886), 209.— Graf von Schwerin in *Gartenfl.*, XLII (1893), 229.

Acer laevigatum Wallich, var. 2, *angustum* Pax in *Engler, Bot. Jahrb.* VII (1886), 209.— Graf von Schwerin in *Gartenfl.*, XLII (1893), 229.

Acer oblongum var. *laevigatum* Wesmael in *Bull. Soc. Bot. Belg.* XXXIX (1890), 42.

Small tree usually about 10 metres high, rarely up to 16 metres high, bark brownish-grey or black-grey, smooth, branchlets slender, glabrous, those of the current year light green, those more than one year old deep green or grey; winter-buds axillary, ellipsoid, scales ovate, imbricate, glabrous, accrescent scales obovate or oblong-obovate, densely grey-pubescent outside. Leaves opposite, persistent, coriaceous, smooth but reticulate after drying, lanceolate or oblong-lanceolate, 10-15 cm. long, 4-5 cm. broad, cuneate or broadly cuneate at base, acuminate or shortly acuminate at the apex, entire or rarely remotely serrulate near the apex, upper surface deep green, glabrous, lower surface light green with tufts of grey hairs at the axils of nerves while young, midrib and 7-9 pairs of lateral nerves conspicuous above, prominent below; petioles 5-15 mm. long, glabrous. Flowers andro-monoecious, in glabrous corymbs terminal on leafy branchlets appearing after the leaves; sepals 8, purplish-green, ovate-oblong or ovate, 3 mm. long, sparsely pubescent on the outer surface; petals 8, white, obovate, emarginate, 4-5 mm. long; stamens 6-8, glabrous, 6 mm. long, rudimentary in pistillate flowers, anthers oblong, 2-celled; disk purple, glabrous, extrastaminal; ovary purple, slightly pubescent, style glabrous, about 6 mm. long; pedicels about 6-8 mm. long, slender, glabrous; pedicels 4-5 cm. long, glabrous. Fruits, samaras, purple while young, greenish or brownish-yellow when matured; nutlets strongly convex, ellipsoid or ellipsoid-oblong, about 6 mm. long, 3 mm. in diameter; wings included nutlets 3-4 cm. long, 1 cm. broad, straight or introrsely falcate, spreading at obtuse or rarely acute angles.

MOUNT OMEI: near Fu-hu-su, alt. 800 m., in woods, small tree 9 metres high, leaves smooth-leathery, *W. P. Fang*, No. 12507, May 26, 1938; Lung-men-tung, alt. 500 m., at roadside, small tree 10 metres high, young samaras with horizontally spreading wings, *W. P. Fang*, No. 14170, April 26, 1940; same locality, tree 20 metres high, flowers green, *C. L. Chow*, Nos. 5636, 5684, 5770 & 5772 March 31 to April 6, 1942; same locality, small tree 14 metres high, leaves green, coriaceous, samaras purple, *C. L. Chow*, No. 6059 May 20, 1942; Tieh-so-chiao, alt. 546 m., tree 12 metres high, with grey and smooth bark, leaves oblong or elliptic-oblong, samaras green, occasionally, *W. P. Fang*, No. 14452, June 3, 1940; same locality, *C. L. Chow*, No. 5770, April 6, 1943; Ta-o-ssu, alt. 1103 m., in shaded wooded slopes, small tree 8 metres high, *S. S. Chien*, No. 5474, May 4, 1938;

Hung-chun-ping, alt. 1147 m., in forests, small tree 18 metres high, *C. L. Sun*, No. 1701, April 28, 1940; without precise locality, *C. W. Yao*, No. 3552, in 1939; without precise locality, *W. C. Cheng*, No. 10575, June 10, 1940.

WESTERN SZECHUAN: Kuan-hsien, Mt. Tsing-cheng, at the side of a brook, small tree 7 metres high, flowers greenish-white, *W. P. Fang*, No. 12209, April 1933.

SIKANG: Pao-hsing-hsien, *K. L. Chu*, No. 3132, July 17, 1936.

Distribution: Shensi, Hupeh, Szechuan, Sikang, Kweichow, Yunnan; Burma, Sikkim-Himalayas.

This Himalayan species is distributed from the Sikkim-Himalayas eastward to Southwest China. On Mount Omei it is usually found in forests at the foot of the mountain. The leaves are entire and smooth while fresh but change to reticulate after drying *W. P. Fang*.

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

圖版一百三十七

光 葉 槭

槭 樹 科

小喬木，常高十公尺，稀達十五公尺；樹皮灰褐色或黑灰色，光滑；小枝細而無毛，當年生枝淡綠色，多年生枝深綠色或灰色；冬芽腋生，橢圓形，鱗片卵形，覆瓦狀排列，無毛，開花後長大之鱗片倒卵形或長圓狀卵形，外被濃密之灰色絨毛。葉對生，常綠，革質，新鮮時平滑，乾後則網脈顯露，披針形或長圓狀披針形，長十至十五公分，寬四至五公分，基澤楔形或廣楔形，先端漸尖或短漸尖，全緣或近先端處有稀疏之鋸齒，葉表面深綠色，無毛，背面淡綠色，幼嫩時脈腋間有叢生之灰色絨毛，中脈及七至九對之側脈在葉表面顯露，在葉背面則突出；葉柄長五至五公分，無毛。小蕊花與兩性花同株，着生於無毛之繖房花序上，花序頂生於着葉之枝上，發葉後始開放；萼片五枚，紫綠色，卵狀長圓形或卵形，長三公厘，外面被稀疏之毛，花瓣五枚，白色，倒卵形，先端微現凹形，長四至五公分；小蕊六至八本，無毛，長六公分，在大蕊花中不發育，花藥長圓形，二室；花藥紫色，無毛，生於小蕊外圍；子房紫色，微被毛，花柱無毛，長約六公分；花梗長約六至八公分，細而無毛。果為翅果，幼嫩時為紫色，成熟時為淡綠色或褐黃色；小堅果極凸出，橢圓形或橢圓狀長圓形，長約六公分，直徑三公厘；翅連小堅果共長三至四公分，寬一公分，直伸或成內彎之鐮形，張開成鈍角，稀成銳角。

本種產峨眉山之伏虎寺，龍門洞，鍊索橋，大峨寺及洪椿坪等處，海拔五百公尺至一千一百公尺左右之森林中或路旁。川西之瀘縣青城山，西康之寶興縣亦產之。三四月開花，八月果可成熟。

本種分佈於陝西，湖北，四川，西康，貴州，雲南，緬甸及印度之哲孟雄。

本種原產喜馬拉雅山，東南分佈達於中國西南部。在峨眉山則習見於山麓。其葉在新鮮時平滑而全緣，乾後則網脈顯露。

圖解：1.花枝（原大）；2.果枝（原大）；3.兩性花（放大十倍）；4.小蕊花（放大十倍）。



137. *Acer laevigatum* Wallich

Plate 138.

ACER DAVIDI Franchet.

Aceraceae.

Acer Davidi Franchet in Nouv. Arch. Mus. Paris, ser. 2, VIII (1884), 212 (Pl. David. II, 30); in Bull. Soc. Bot. France, XXXIII (1886), 454; Pl. Delavay. (1889), 145.— Pax in Engler, Bot. Jahrb. VII (1886), 216; in Engler & Prantl, Pflanzenfamilien, III, pt. 5 (1896), 272; in Hooker Icon. Pl. (1889), under t. 1897; ex Diels in Engler, Bot. Jahrb. XXIX (1900), 449 (Fl. Centralchina); in Engler, Pflanzenreich, Heft 8 (IV, 163), (1906), 36.— Graf von Schwerin in Gartenfl. XLIII (1893), 230.— Bretschneider, Hist. Europ. Bot. Discov. China, (1895), 859.— Henry in Gard. Chron. ser. 3, XXXIII (1903), 62 (Chin. Maples).— Veitch in Journ. Roy. Hort. Soc. XXIX, pt. 3 (1904), 349, 360, figs. 86 & 90.— Hemsley in Journ. Linn. Soc. Bot. XXXVI (1906), 452.— Rehder in Sargent, Trees & Shrubs, I (1908), 167, t. 83; II (1907), 26, in part; in Sargent, Pl. Wilson. I (1911), 62; III (1917), 426; in Journ. Arn. Arb. VII (1926), 221; VIII (1927), 163; IX (1928), 90; XIV (1933), 213, 346; XV (1934), 5; Manual Cult. Trees & Shrubs (1927), 572.— Schneider, Illust. Handb. Lanbh. II (1907), 216, figs. 143-145; 144 d.— Pavolini in Nuov. Giorn. Bot. Ital. n. ser. XV (1908), 409 (Contrib. Fl. Hupe).— Matsumura in Icon. Pl. Koiskavenses, I (1911), 21, t. 11.— Diels in Notes Roy. Bot. Gard. Edinb. VI (1912), 175.— Leveille, Cat. Pl. Yunnan (1917), 252; Cat. Illustr. Pl. Sutchouen, (1916), 178 mss.— Bailey, Gent. Herb. (1920), 35.— Chun, Chin. Econ. Trees (1921) 230; in Hu & Chun, Icon. Pl. Sin. I (1927), 35, t. 35.— Hu in Science, Sci. Soc. China, VI (1921), 1165; IX (1924), 940.— Thatcher in Gard. Chron. LXXII (1922), 119.— Hers in Journ. N. China Branch. Roy. As. Soc. LIII (1922), 148; Liste Ess. Lign. Honan Sept. (1922), 1.— Chung in Mem. Sci. Soc. China, I (1924), 148 (Cat. Trees & Shrubs China).— Notes Roy. Bot. Gard. Edinb. XIV (1924), 209, 242, 275, 368, 369; XVII (1930), 257, 288, 292, 345.— Bean, Trees & Shrubs Hardy Brit. Isl. I (1929), 140.— T. Tang in Bull. Fan Mem. Inst. Biol. II (1931), 100, 105.— Y. Tang in Bull. Fan Mem. Inst. Biol. III (1932), 13, 197.— Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 174; VIII (1932), 177; XI (1939), 165.— Handel-Mazzetti, Symb. Sin. VII (1933), 641.

Acer Hookeri Forbes & Hemsley (non Miquel) in Journ. Linn. Soc. Bot. XXIII (1886), 140 (Ind. Fl. Sin.).

Acer Davidi Franchet var. *glabrescens* Pax in Hooker Icon. Pl. XIX (1889), under t. 1897.

Acer sikkimensis subsp. *Davidi* Wesmael in Bull. Roy. Soc. Bot. Belg. XXIX (1890), 44.

Acer Davidi Franchet var. 1, *lomentellum* Graf von Schwerin in Gartenfl. XLIII (1893), 230.

Acer laxiflorum Pax var. *ningpoense* Pax in Engler, Pflanzenreich, Heft 8. (IV, 163), (1902), 35.

Acer Cavalieri Leveille in Fedde, Rep. Nov. Spec. X (1911), 432; Fl. Kouy-tcheou (1915), 363.

Acer starchyophyllum Leveille (non Hiern), Fl. Kouy-tcheou, (1915), 363.

Acer laxiflorum (non Pax), Notes Roy. Bot. Gard. Edinb. XIV (1924), 353.

Acer Davidi Franchet var. Notes Roy. Bot. Gard. Edinb. XVII (1928), 13.

Acer horizontale Franchet, mss. in Herb. Paris.

Small tree usually 10 metres high, rarely up to 15 metres high; bark smooth, green or darkish green; branchlets slender, glabrous, those of the current year brownish-green or purplish-green, those more than one year old yellowish or darkish brown. Winter-buds axillary, small, conical, glabrous; acrescent scales lanceolate or oblanceolate, 3-3.5 cm. long, glabrous inside, densely yellowish-pubescent outside. Leaves opposite, deciduous, chartaceous, ovate or oblong-ovate, 8-12 cm long, 5-8 cm. broad, acuminate or rarely caudate at the apex, subcordate or rounded at the base, appressed acute with unequal crenates on the margin, midrib and 7-13 pairs of primary veins just showing above, prominent below, upper surface dark green, glabrous, lower surface pale green, rufously pubescent on the veins while young, then glabrescent when matured; petioles 3-6 cm. long, slender, rufously pubescent while young and becoming glabrous when matured. Flowers yellowish-green, andro-monoecious, in pendulous, sparsely yellow-pubescent racemes usually terminal on leafy branchlets, appearing while the developing of leaves; staminate flowers on pedicels 3-5 mm. long, usually 9 to 25 flowers in racemes 4-10 cm. in length; sepals 5, greenish-yellow, glabrous, herbaceous, ovate, 3-4 mm. long; petals 6, yellowish or yellowish-white, membranaceous, obovate, 3-4 mm. long, 2 mm. broad; stamens 8, about 3 mm. long, filaments slender, glabrous, anthers yellow, ellipsoid, 2-celled, disk intrastaminal, glabrous, slightly lobed, ovary absent or rudimentary; perfect flowers on pedicels 1-1.5 cm. long, usually 15 to 30 flowers in racemes 7 to 12 cm in length; sepals and petals are the same as in the staminate flower, stamens 1-1.5 mm. long, ovary compressed, rufous-pubescent, style glabrous, stigmas slender and revolute. Fruits brownish-green or brownish-yellow samaras, in pendulous fruiting racemes; nutlets flat, glabrous, 6-8 mm. long, 5 mm. broad; wings included nutlets 2.6-2.8 cm. long, 2 mm. broad, usually spreading at obtuse angles or horizontally; pedicels 1-1.5 cm. long, slender, glabrous.

MOUNT OMEI: near Ta-o-ssu, alt. 1103 m., in forests, tree 10 metres high, flowers green, *C. L. Sun*, No. 36, May 3, 1939; Ching-yin-ko, alt. 950 m., tree 8 metres high, *W. P. Fang*, No. 15948, March 21, 1941; Hei-lung-kiang, alt. 900 m., small tree 8 metres high, flowers green, *C. L. Sun*, No. 1429, March 19, 1940; Niu-hsin-ssu, alt. 860 m., small tree 8 metres high, *W. P. Fang*, No. 18588, April 16, 1942; near Wan-nien-ssu, alt. 1041 m., at roadside, small tree 10 metres high, flowers green, *C. L. Sun*, No. 1479, April 11, 1940; Hou-tzu-po, alt. 1000 m., in woods, tree 8 metres high, *C. L. Sun*, No. 1729, April 26, 1940; same locality, on slopes, small tree 7 metres high, samaras green with purple wings, rare, *C. L. Sun*, No. 2797, July 12, 1940; Ta-ping, alt. 1400 m., in thickets, tree 10 metres high, rare, *W. P. Fang*, No. 14659, May 20, 1941; same locality, small tree 5 metres high, flowers green, *W. P. Fang*, No. 18469, April 20, 1942; Hsin-kai-ssu, alt. 1600 m., small tree 7 metres high, samara green, *C. L. Sun*, No. 6156, May 21, 1943; Pao-ku, small tree 5 metres high, flowers greenish, *W. P. Fang*, No. 18276, April 1, 1943; Hsi-hsin-so, alt. 1400 m., in forests, small tree 9 metres high, samaras green, *C. L. Sun*, No. 22561, May 31, 1940; Pien-tan-ai, alt. 1400 m., small tree 7 metres high, flowers greenish, *W. P. Fang*, No. 16318, April 26, 1941;

Chiu-lao-tung, alt. 1800 m., in thickets, small tree 4 metres high, flowers green, rare, *C. L. Sun*, no. 195, May 12, 1939; Yu-hsien-ssu, alt. 1771 m., in forests, small tree 7 metres high, samaras purplish rare, *W. P. Fang*, No. 12860, August 1, 1938; Hua-yen-ting, alt. 1950 m., under forests, small tree 1 metres high, flowers purple, *W. P. Fang*, No. 12860, February 29, 1940; southwest of Mount Omei, Opfen-hsien, Yen-ching-chi, *W. C. Cheng*, 6279, in 1938; without precise locality, *T. H. T. Tsu*, No. 79, in 1938; without precise locality, *S. N. Hsu*, No. 568, in 1938; without precise locality, *C. W. Yao*, No. 4050, in 1939.

SZECHUAN: northeastern corner of Szechuan, *K. L. Chu*, No. 1372, in 1935; Nanchuan-hsien, *K. L. Chu*, No. 899, in 1938; same locality, *Y. C. Yang*, Nos. 3010, 3046, 3047 & 3147, in 1939 Kuan-hsien, Mount Tsing-cheng, in forests, small tree 8 metres high, flowers green, in racemes 16 cm. in length, common, *W. P. Fang*, No. 12138, April 10, 1938.

SIKANG: Tien-chuan-shien, on slopes, small tree 8-10 meter high, samaras green, *F. C. Tai & C. M. Teng*, No. 5172, & 5301, September to October 1939.

KWANGSI: without precise locality, *C. Wang*, No. 39377, without date.

Distribution: Hopei, Shansi, Shensi, Kansu, Kiangsu, Chekiang, Anhwei, Kiangsi, Hpelei, Szechuan, Sikang, Hunan, Kweichow, Yunnan, Kwangtung, Kwangsi.

This species is widely distributed in China having been found in various provinces. It occurs commonly on the lower slopes of Mount Omei from 800 to 2000 metres above sea level. The pubescence on the veins of the lower surface of leaves is very variable, but the veins are usually densely pubescent while the leaves are young and glabrescent when they are matured. The only character which distinguished this species from the others is the dentate-serrate margin of the leaves, other species usually having serrulate-teeth on the margin..... *W. P. Fang*.

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

Acer Davidi Franchet var. **acuminifolium** Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. XI (1939), 177 (Monog. Chin. Acer.).

MOUNT OMEI: Yu-hsien-ssu, alt. 1771 m., *T. T. Yu*, No. 462, April 20, 1932; Chiu-lao-tung, alt. 1800 m., in thickets, small tree 8 metres high, flowers dark purple, *C. L. Sun*, No. 1589, April 18, 1939; Tsuan-tien-po, alt. 2000 m., in thickets, small tree 8 metres high, *C. L. Sun*, No. 282, May 29, 1939; southwest of Mount Omei, *T. G. Chiao*, Nos. 16 & 30, in 1938.

SIKANG: Tien-chuan-hsien, *F. C. Tai & C. M. Teng*, No. 4238, July 22, 1938.

Distribution: Szechuan and Sikang.

This variety differs from the species in having the ovate-oblong leaves which are sharply serrulate with appressed teeth on the margin, caudate-acuminate on the apex and with persistent yellow pubescence on the veins on the lower surface of the leaves. This variety is limited in distribution to southwestern Szechuan and Eastern Sikang..... *W. P. Fang*.

Fig. 8, a leaf (natural size).

圖版一百三十八

大衛槭

別名：青皮槭。

槭樹科

小喬木高十公尺，稀達十五公尺；樹皮平滑，綠色或暗綠色；小枝纖細而無毛，當年生枝為綠色或紫綠色，多年生枝淡黃色或暗褐色。冬芽腋生，小而呈圓錐狀，無毛；開花後發育之鱗片披針形或圓披針形，長三至三公分半，裏面無毛，表面被濃密之淡黃色絨毛。葉對生，冬季凋落，紙質，卵形或長圓卵形，長八至十二公分，寬五至八公分，先端漸尖，稀為尾狀，稀為尾狀，基部亞心臟形或圓形，葉緣具卵形或長圓形之鋸齒，中脈及七至十三對之側脈在葉表面微隆，在葉背面則顯著，葉表面深綠色，無毛，背面淡綠色，幼嫩時被紅褐色之絨毛，成熟時則毛脫落而成光滑狀；葉柄長三至六公分，纖細，幼嫩時被紅褐色絨毛，成熟後毛即脫落而成光滑狀。花黃綠色，小蕊花與兩性花同株，着生於下垂而被繖形黃綠色花之總狀花序上，花序常頂生於着葉之枝上，與葉同時開放；小蕊花具長三至五公厘之小花梗，常九至二十五枚成一長四至十公分之總狀花序；萼片五枚，黃綠色，無毛，草質，卵形，長三至四公厘，花瓣五枚，淡黃色或黃白色，膜質，倒卵形，長三至四公厘，寬二公厘；小蕊八本，長約三公分，花絲纖細，無毛，花藥黃色，橢圓形，二室，花盤生於小蕊之內，無毛，微從；子房球形或不發育；兩性花具長一分至二公分半之小花梗，常長七至十二公分之總狀花序；萼片及花瓣與小蕊花中著生同，小蕊具短花絲，子房圓錐，被紅色之絨毛，花柱無毛，柱頭細而互生。果為繖形或繖形黃綠色之翅果，生於下垂之總狀果序上，小堅果扁而無毛，長六至八公厘，寬五公厘；翅連同小堅果長三公分半至五公分八公厘，寬八公厘，常帶深淺綠色或成平面；果體長一分至一分半，纖細，無毛。

此種產於峨眉之大峨寺，清音閣，黑龍江，牛心寺，新開寺，息心所，九老洞，遇仙寺及華嚴頂等處之森林中或路旁。三四開花，八月果可成熟。

此種分佈於河北，山西，陝西，甘肅，江蘇，浙江，安徽，江西，湖北，四川，西康，湖南，貴州，雲南，廣東及廣西等省。

此種遍佈於中國各省，峨眉山自海拔五百公尺至二千公尺之地，均甚普通。其葉背面脈上所具之絨毛之變異極大，但在嫩時常顯著，成熟時則多變為光滑；異於別種之重要特徵，為其葉緣具鈍形齒狀之鋸齒。至於相葉諸種之變異，均較生疏也。

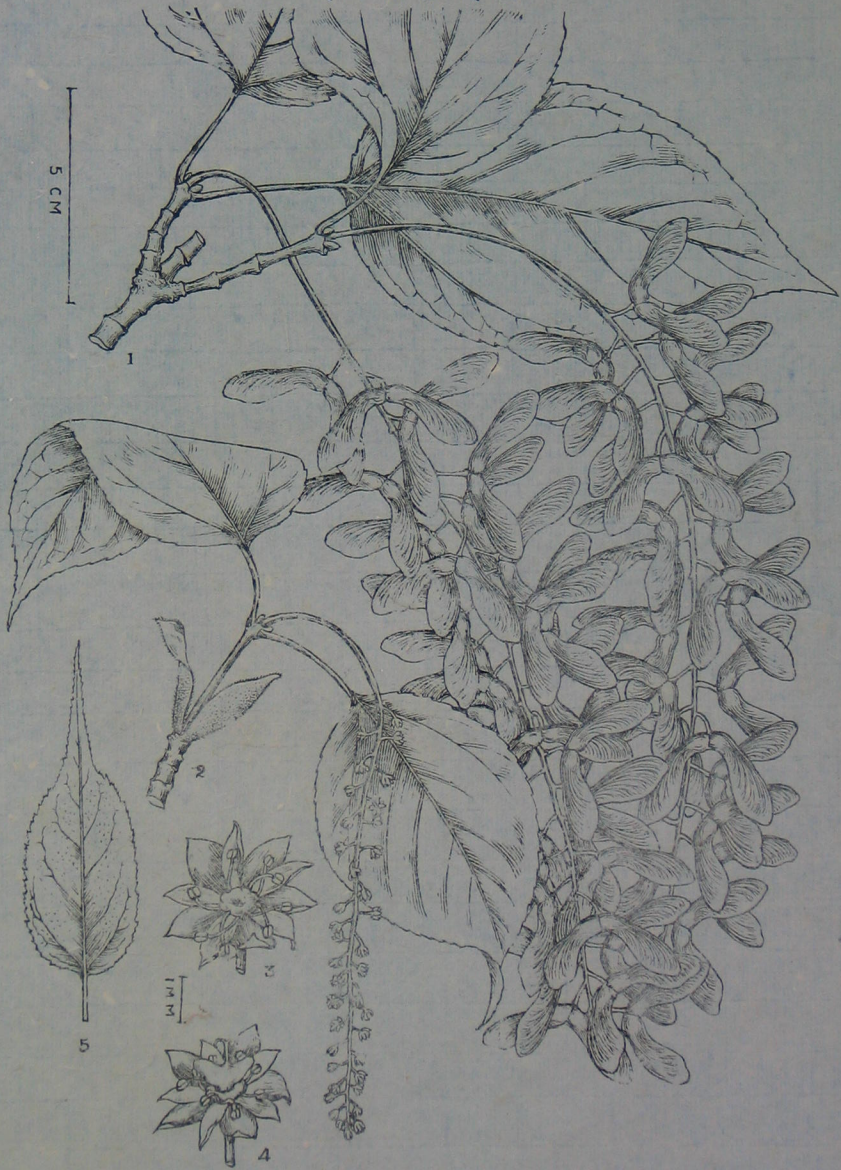
圖解：1. 果枝（原大）；2. 花枝（原大）；3. 小蕊花（放大十倍）；4. 兩性花（放大十倍）。

尖葉大衛槭

此種產於峨眉山之遇仙寺，九老洞，續天坡等處，海拔二千公尺左右之森林中。此種不同於原種者，以其卵狀長圓形之葉，葉緣具深尖銳鋸齒，先端成尾狀漸尖形，且葉背面之脈上，被宿存之黃色絨毛。

此種之分佈限於四川西南部與西康之東部。

圖解：5. 葉（原大）。



138. *Acer Davidi* Franch

Plate 139.

ACER LAXIFLORUM Pax.

Aceraceae.

Acer laxiflorum Pax in Engler, Pflanzenreich, Heft 8 (IV. 163), (1902), 36, fig. 7, c. d.—Henry in Gard. Chron. ser. 3, XXXIII (1903), 63 (Chin. Maples).—Hemsley in Journ. Linn. Soc. Bot. XXXVI (1905), 482.—Rehder in Sargent, Trees & Shrubs, I (1905), 180; II (1907), 26; in Sargent, Fl. Wilson. I (1911), 83, in part, syn. *Acer Pavolinii*, excl.; III (1917), 426, excl.; Manual Cult. Trees & Shrubs (1927), 513; in Journ. Arn. Arb. XIV (1933), 214, fig. 2.—Schneider, Handb. Laubb. II (1907), 218, figs. 143 i & 144 b.—Leveille, Cat. Illustr. Pl. Seutchouen. (1918), 179, mss.—Pax & Hoffmann in Fedde, Repert. beih. XII (1922), 438 (Bot. Keiz. Hochg. Chinas & Osttibets).—Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China), in part, syn. *Acer Forrestii*, excl.—Notes Roy. Bot. Gard. Edinb., XIV (1924), 353, excl.—Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 178, in part, specimen cited Chun's 430 & 4220 from Hupei, Forrest's 8602 from Yunnan excl.; VIII (1933), 178; XI (1939), 191.

Acer laxiflorum, var. *genium* Pax in Engler, Pflanzenreich, Heft 8 (IV. 162), (1902), 36.

Small tree, usually 6 to 10 metres high, rarely up to 15 metres high; branchlets slender, glabrous, those of the present year greenish purple, those more than one year old yellowish or darkish brown. Winter-buds axillary, ellipsoid, brown, glabrous; accrescent scales oblong-ovate, white-pubescent on the margin. Leaves opposite, deciduous, chartaceous, triangular-ovate, 7-12 cm. long, 5-8 cm. broad, doubly serrulate with appressed sharp teeth on the margin, cordate or subcordate at base, 3-lobed rarely with 2 additional obsolete basal lobes; middle lobe slender, caudate-acuminate; lateral lobes small, acute; upper surface deep green, glabrous; lower surface yellowish-green or pale green, rufous-pubescent on the veins while young, less pubescent when matured, midrib and 9-11 pairs of lateral nerves just showing above, prominent below; petioles 4-7 cm. long, slender, slightly reflexed-pubescent while young, becoming glabrescent afterwards. Flowers greenish-purple, andro-dioecious, loosely in glabrous, pendulous racemes, 4 cm. long, with peduncles 2 cm. in length, terminal on leafy branchlets, appearing after developing of leaves; sepals 5, green or purplish, ovate, 4 mm. long, 2 mm. broad, glabrous; petals 5, obovate, 4 mm. long, 2 mm. broad; disk glabrous, slightly lobed, intrastaminal; stamens 8, glabrous, about 3 mm. long, included in the corolla, usually shorter in perfect flower, anthers yellow, 2-celled; ovary superior, glabrous, style slender, glabrous. Fruits, samaras, purple while young, greenish-yellow or brownish-yellow when matured; nutlets flat, 5-8 mm. in diameter; nutlets including wings 2.5-2.7 cm. long, 8-10 mm. broad, spreading at obtuse angles or nearly horizontally; pedicels 3-5 mm. long, slender, glabrous.

MOUNT OMEI: Chiu-lao-tung, alt. 1900 m., *T. H. Tu*, No. 129, in 1935; same locality, *S. S. Chien*, No. 6084, July, 12, 1937; same locality, small tree 6 metres high, bark blackish brown, leaves oblong-ovate, caudate, its lower surface glaucous, petioles reddish, up to 6 cm. long, *C. L. Sun*, No. 483, June 13, 1939; without precise locality, *C. W. Yao*, Nos. 2351, 2747, #005, #216, #278 #310, & #423, in 1939.

SIKANG: Tien-chuan-hsien, *F. C. Tai* & *C. M. Teng*, Nos. 4337, 5001 & 5218, July to September 1939.

Distribution: Szechuan and Sikang

This species was discovered by Dr. Faber at Mount Omei and by Mr. Pratt, at Kanglin-hsien in eastern Sikang, so far it has been found only in Szechuan and eastern Sikang. On Mount Omei we have found it not uncommonly about half way up the mountain. It is easily recognized by its 3-lobed leaves which are sharply serrulate on the margin, and have a rufous-pubescence on the lower surfaces and caudate acuminate middle lobes.....W. P. Fang,

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a staminate flower (enlarged 8 times); 4, a perianth (enlarged 8 times); 5, the lower surface of leaf showing the pubescence (enlarged 2 times).

圖版一百三十九

疎花槭

槭樹科

小喬木常高六至十公尺，稀達十五公尺；小枝細而無毛，當年生枝棕紫色，多年生枝淡黃色或暗褐色。冬芽腋生，橢圓形，褐色而無毛；開花後始長大之鱗片長圓倒卵形，邊緣具白色纖毛。葉對生，冬季凋落，紙質，三角狀卵形，長七至十二公分，寬五至八公分，邊緣為雙鋸齒狀，具密揉而尖銳之鋸齒，基部心臟形或亞心臟形，三裂，基部稀具二不顯明之裂片；中央裂片細長，尾狀漸尖；二側裂片更小，銳尖；表面深綠色，無毛；背面黃綠色或淡綠色，幼嫩時葉脈上被紅褐色之絨毛，成熟時則稀少，中脈及九至十一對側脈在葉表面剛顯露，在葉背面則突出；葉柄長四至七公分，幼嫩時微被紅褐色絨毛，長成後即脫落。花線紫色，大小蕊花與兩性花異株，疏生於長四公分下垂而無毛之總狀花序上，具長二公分之花梗；頂生於青葉之枝上，發葉後始開放；萼片五枚，綠色或淡紫色，卵形，長四公厘，寬二公厘，無毛；花瓣五枚，倒卵形，長四公厘，寬二公厘；花盤無毛；微裂，位於小蕊之內，小蕊八本，無毛，長約三公厘，包藏於花瓣之內，在兩性花中則較短，花藥黃色，二室；子房上位，無毛，花柱細而無毛。果為翅果，幼嫩時紫色，成熟時為綠黃色或褐黃色；小堅果扁平，直徑五至八公厘，小堅果連翅長二公半至二公七公厘，寬八至十公厘，張開成鈍角，或幾成平面；果梗長三至五公厘，細而無毛。

此種產於峨眉山之九老洞，海拔一千八百公尺之森林中。五月開花，九月果可成熟。

此種分佈於四川及西康兩省。

此種係賈伯氏發見於峨眉山及巴特氏發現於西康東部之康定縣。且其產地僅限於四川及西康東部。在峨眉山亦僅山之中部產之。其葉三裂，葉緣有鋸齒，葉背面被紅褐色絨毛及其中央裂片具尾狀先端，故易辨別。

圖解：1.花枝（原大）；2.果枝（原大）；3.小蕊花（放大五倍）；4.兩性花（放大五倍）；5.葉之背面示其毛（放大二倍）。

峨眉植物圖志



139. *Acer laxiflora* Pax

Plate 140.

ACER MAXIMOWICZII Pax.

Aceraceae.

Acer Maximowiczii Pax in Hooker Icon. Pl. XIX (October 1889), under t. 1697; in Engler & Prant, Pflanzenfamilien, III, pt. 5 (1896), 272; ex Diels in Engler, Bot. Jahrb. XXIX (1900), 450 (Fl. Centralchina); in Engler, Pflanzenreich Heft 8 (IV. 163), (1902), 70; in Engler, Bot. Jahrb. XXXVI, beibl. LXXXII (1908), 74.— Graf von Schwerin in Gartenfl. XLII (1893), 453.— Bretschneider, Hist. Europ. Bot. Discov. China, (1898), 761.— Henry in Gard. Chron. ser. 3, XXXIII (1903), 100 (Chin. Maples).— Hemsley in Journ. Linn. Soc. Bot. XXXVI (1905), 452.— Schneider, Illustr. Handb. Lanbh. II (1907), 239, figs. 164 k & 165 e-f.— Matsumura in Icon. Pl. Koishikawa. I (1911), 19 t. 10.— Rehder in Sargent, Pl. Willson. I (1911), 94; in Journ. Arn. Arb. VII (1926), 1223; IX (1928), 90; XIV (1933), 217, fig. 6; Manual Cult. Trees & Shrubs, (1927), 574.— Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China).— Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 180, in part, specimens cited Tso's 20570 from Kwangtung excl.; VIII (1932), 178; XI (1933), 204 (Monogr. Chin. Aceraceae).— Handel-Mazzetti, Symb. Sin. VII (1933), 640, excl.

Acer urophyllum Maximowicz in Act. Hort. Petrop. XI (November 1889), 105.

Small tree, usually 5 metres high, rarely up to 12 metres high; bark dark brown, smooth; branchlets slender, glabrous, those of the current year green or purplish-green, those of more than one year old dark brown or brownish-grey. Winter-buds axillary, glabrous, oblong-ellipsoid; scales imbricate, whitish ciliate on the margin. Leaves opposite, deciduous, chartaceous, ovate or triangular-ovate in outline, 8-11 cm. long, 8-9 cm. broad, doubly serrulate and lobulate on the margin, with appressed apiculate teeth, subcordate or cordate rarely truncate at base, distinctly 5-lobed; middle lobe triangular-ovate, caudate-acuminate; lateral lobes ovate, acuminate or acute; basal lobes small, ovate, acute; upper surface deep green, glabrous; lower surface pale green or yellowish-green, rufous-pubescent on the veins, midrib and 9-12 pairs of primary nerves just showing above, distinctly below; petioles 5-7 rarely to 10 cm. long, purplish-green, slender, glabrous. Flowers yellowish-green, dioecious, in pendulous racemes 4-8 cm. long, on glabrous peduncles 1-1.5 cm. long, terminal on leafy branchlets, appearing after the leaves; in staminate flowers, sepals 5, ovate-oblong, obtuse, 3 mm. long, 1 mm. broad, petals 8, obovate, as long as the sepals, stamens 8, slender, slightly shorter than petals, disk intrastaminal, slightly lobed, ovary absent or rudimentary, pedicels 3-4 mm. long, slender, glabrous; in pistillate flowers, sepals 5, ovate-oblong, 3 mm. long, petals 8, obovate, slightly longer than the sepals, stamens 8, very short, disk glabrous, intrastaminal; ovary superior, purple, glabrous, style short, stigmas recurved, pedicels 5 mm. long, slender. Fruits, samaras, purple white young, brownish-yellow when matured; nutlets flat, 6 mm. in diameter; wings with nutlets 2.3-2.8 cm. long, 8 mm. broad, spreading at obtuse angles; pedicels 8-10 mm. long, slender.

MOUNT OMEI: Ta-cheng-ssu, alt. 2300 m., *T. H. Tu*, No. 657, in 1936; same locality, in thicket, shrub 3 metres high, bark green, flowers green, *C. L. Sun*, No. 227, May 19, 1939; Lei-tung-ping, alt. 2880 m., small tree 2 metres high, *W. P. Fang*, No. 18805, May 16, 1942; same locality, small tree 6 metres high, branchlets dark green, leaves 5-lobed and irregularly serrulate on the margin, pubescent on the veins of the lower surface, flowers light green, in racemes, *W. C. Cheng*, No. 16336, May 13, 1940; without precise locality, *C. W. Yao*, No. 4719, in 1939.

SZECHUAN: northeastern corner of Szechuan, without precise locality, *K. L. Chu*, 1290, in 1935.

Distribution: Shensi, Kansu, Hupeh, Szechuan, Hunan.

This species was discovered by Dr. A. Henry at Fang-hsien of western Hupeh. On Mount Omei it grows on the upper slopes, from 2300 to 2600 metres above sea level, where other species of *Acer* are very rare. It is characterized by its 5-lobed leaves, the middle lobe caudate-acuminate, the lateral as well as the basal lobes usually acute.

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

圖版一百四十

馬氏槭

槭樹科

小喬木常高五公尺，稀達十二公尺；樹皮暗褐色，平滑；小枝細而無毛，當年生枝綠色或紫綠色，多年生枝暗褐色或褐灰色。冬芽腋生，無毛，長圓錐形；鱗片覆瓦狀排列，邊緣具淡白色纖毛。葉對生，冬季凋落，紙質，卵形或三角狀卵形，長八至十一公分，寬六至九公分，葉緣裂為雙鋸齒或小裂片狀，具密接而短銳之鋸齒，基部為亞心臟形或心臟形，稀為楔形，具顯明之五裂片；中央裂片三角狀卵形，具尖尾形之先端，二側裂片卵形，漸尖或銳尖；基部二裂片較小，卵形，銳尖；表面深綠色，無毛；背面淡綠色或黃綠色，脈上有紅褐色絨毛，中脈及九至十二對側脈在葉表面剛露出，在葉背則顯明；葉柄長五至七分，稀達十分，紫綠色，細而無毛。花黃綠色，大小蕊花異株，着生於長四至五公分無毛而下垂之總狀花序上，具長一至一公分半而無毛之大花梗，頂生於着葉之枝上，發葉後花始開放；小蕊花具萼片五枚。卵狀長圓形且其先端鈍形，長三公厘，寬一公厘，花瓣五枚，倒卵形，與萼片等長，小蕊八本，纖細，微短於花瓣；花盤位於小蕊之內，微裂，子房缺如或不發育，小花梗長三至四公厘，細而無毛；大蕊花具萼片五枚，卵狀長圓形，長三公厘，花瓣五枚，倒卵形，微長於萼片，小蕊八本，極短；花盤無毛，位於小蕊之內；子房上位，紫色，無毛，花柱短，柱頭反捲，小花梗長五公厘，纖細。果為繖果，幼嫩時為紫色，成熟時為褐黃色；小堅果扁平，直徑六公厘；翅連小堅果長二十三至二十五公厘，寬八公厘，張開成鈍角；果梗長五至十公厘。

此種產於峨眉山之大乘寺及雷洞坪，海拔二千三百至二千六百公尺之叢林中。五月開花，九月果可成熟。

此種分佈於陝西，甘肅，湖北，湖南及四川等省。

此種為亨利氏先首發見於鄂西之房縣。在峨眉山則生於海拔二千三百至二千六百公尺，他種槭樹不易生長之高山地帶，特徵為其五裂之葉，中央裂片為尖尾狀，二側裂片及基部二裂片皆為銳尖形。

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

峨眉植物圖志



140. *Acer Maximowiczii* Pax

ACER FRANCHETI Pax.

Aceraceae.

Acer Francheti Pax in Hooker Icon. Pl. XIX (1889), under t. 1897; in Engler & Prantl, Pflanzenfamilien, III, pt. 5 (1896), 272; ex Diels in Engler, Bot. Jahrb. XXIX (1900), 450 (Fl. Centralchina); in Engler, Pflanzenreich, Heft 8 (IV. 163), (1902), 71.- Graf von Schwerin in Gartenfl. XLII (1893), 325.- Bretschneider, Hist. Europ. Bot. Discov. China (1896), 781.- Henry in Gard. Chron. ser. 3, XXXIII (1903), 100 (Chin. Maples).- Veitch in Journ. Roy. Hort. Soc. XXIX. pt. 3 (1904), 353, 360, fig. 88.- Hemsley in Journ. Linn. Soc. Bot. XXXVI (1905), 452.- Rehder in Sargent, Trees & Shrubs, I (1905), 178, t. 87; in Sargent, Pl. Wilson. I (1911), 97; in Journ. Arn. Arb. VII (1927), 224; Manual Cult. Trees & Shrubs (1927), 675.- Schneider, Illustr. Handb. Laubb. II (1907), 240, figs. 166 c-e & 167 d.- Leveille, Cat. Illustr. Fl. Soutcheouen, (1918), 178, mss.- Hers in Journ. N. China Branch. Roy. As. Soc. LIII (1922), 106; Liste Ess. Lign. Honan Sept. (1922), 1.- Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China).- Notes Roy. Bot. Gard. Edinb., XIV (1924), 258 & 367; XVII (1929), 26 (1930), 198 & 201.- Handel-Mazzetti, in Anz. Akad. Wiss.-Wien. Math.-Nat. LXI (1924), 85; (Pl. Nov. Sin. Forrester, 25, p. 5); Symb. Sin. VII (1933), 643.- Bean, Trees & Shrubs Hardy Brit. Isl. I (1929), 142.- Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 185; VIII (1932), 179; XI (1933), 225 (Monogr. Chin. Aceraceae).

Acer villosum Forbes & Hemsley (non Wallich), in Journ. Linn. Soc. Bot. XXIII (1886), 142 (Ind. Fl. Sin.).

Acer Schoenermarkiae Pax in Engler, Pflanzenreich, Heft 8 (IV. 163), (1902), 71, fig. 13.

Acer Schoenermarkiae Pax, var. *oxycolum* Handel-Mazzetti in Sitz. Akad. Wiss. Wien. Math.-Nat. LVII (1920), 269 (Pl. Nov. Sin. Forrester, 7, p. 4); LXI (1924), 85.

Tree, usually 10 to 15 metres high, bark dark brown; branchlets stout, those of the current year brownish-green or brownish-yellow, pubescent, those more than one year old reddish-brown or dark brown, glabrous. Winter-buds dark brown; scales numerous, imbricate, ciliate on the margin; accrescent scales lanceolate or oblanceolate, densely pilose outside. Leaves opposite, deciduous, chartaceous, 9-12 rarely 20 cm. long, 8-12 rarely 20 cm. broad, cordate or subcordate rarely rounded at base, usually 3-lobed, occasionally with 2 basal lobes, rarely lateral lobes obsolete, irregularly and remotely toothed; middle lobe ovate, acute; lateral lobes acute, forwardly directed; upper surface deep green, lower surface pale green, reticulate; pubescent on both surfaces, densely so on the nerves while young, then glabrescent, sometimes with tufts of hairs at the axils of nerves or rarely slightly pubescent below; petioles 8-10 cm. long, pubescent while young, glabrescent when matured. Flowers yellowish-green, dioecious, on pendulous, pubescent slender racemes or paniculate racemes from leafless lateral buds of 2 or 3 years old branchlets, appearing usually before or rarely with leaves; sepals 5, ovate-oblong, about 4.5 mm. long, 2 mm. broad, slightly pubescent outside; petals 5, obovate, as long as the sepals; disk glabrous, extrastaminal; stamens usually 8, rarely 10, about 6 mm. long, exerted, absent or rudimentary in pistillate flower, filaments glabrous, anthers yellow; ovary densely pubescent, rudimentary in staminate flower; pedicels 1-2 cm. long, pubescent. Fruits, stout samaras, 5 to 8 on pendulous fruiting inflorescence, yellowish green while young, changing to deep yellow when matured; nutlets 8-10 mm. in diameter, convex, globose, strongly reticulate, pilose; nutlets including wings 4.5-5 cm. long, 1.8-2 cm. broad, strongly veined, spreading at right angles or erectly; pedicels 2-3 cm. long, stout, more or less pubescent.

MOUNT OMEI: Hsi-hsiu-so, alt. 1400 m., in forests, tree 15 metres high, bark dark brown, flowers light green, *C. L. Sun*, No. 1496, April 11, 1940; Chang-lao-ping, alt. 1600 m., small tree 5 metres high, staminate flowers yellowish-green, *W. P. Fang*, No. 16441, May 6, 1941; Chiu-lao-tung, alt. 1800 m., in woods, small tree 7 metres high, bark brown, flowers yellowish-green, *C. L. Sun*, No. 1586, April 18, 1940; same locality, in woods, tree 8 metres high, bark dark green, flowers appearing while the developing of leaves, *C. L. Sun*, No. 1821, May 1, 1940; Hsi-hsiang-chih, alt. 2100 m., small tree 4 metres high, staminate flowers greenish-yellow, *W. P. Fang*, No. 18767, May 16, 1942; Ta-cheng-ssu, alt. 2300 m., *S. S. Chien*, No. 6088, July 12, 1937; same locality, in forests, small tree 5 metres high, flowers green, rare, *W. P. Fang*, 14740, May 20, 1940; same locality, in forests, small

tree 7 metres high, flowers yellowish green, occasionally, *W. P. Fang*, No. 16567, May 10, 1941.

Distribution: Shensi, Honan, Hupch, Hunan, Szechuan, Sikang, Yunnan.

This species is confined to western China. We have found it not uncommonly in forests or in woods about half way up Mount Omei. The stimulate inflorescence has more flowers than has the pistillate.

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

圖版一百四十一
樊氏槭
槭樹科

喬木常高十至十五公尺；樹皮暗褐色；小枝粗壯，當年生枝綠褐色或黃褐色，被絨毛，多年生枝紅褐色或暗褐色，無毛。冬芽暗褐色；鱗片多數，覆瓦狀排列，邊緣具纖毛；開花後長大之鱗片披針形或倒披針形，外被濃密之粗毛。葉對生，冬季凋落，紙質，長九至十二公分，稀達二十公分，寬八至十二公分，稀達二十公分，基部心臟形或亞心臟形，稀為圓形，常三裂，基部稀再具二裂片抑或二個裂片亦不發育，具不規則而稀疏之鋸齒；中央裂片卵形，銳尖；二側裂片鈍尖，且向前直伸；表面深綠色；背面淡綠色，網脈顯著；兩面被絨毛，幼嫩時在脈上之毛尤多，旋即脫落，在葉背面之脈腋間偶具腹生之毛或全背而均微被毛；葉柄長八至十公分，幼嫩時被毛，成熟時則毛脫落。花黃綠色，大小蕊花異株，着生於下垂具毛而細細之繖狀花序上抑或圓錐狀總狀花序上，花序由二三年生無葉幼枝之側芽發出，開花在發葉之前，稀與發葉同時開放；萼片五枚，卵狀長圓形，長約四公分半，寬二公厘，外面微被絨毛；花瓣五枚；倒卵形，與萼片等長；花盤無毛，位於小蕊之外圍；小蕊常為八本，稀為十本，長約六公厘；伸出花外，在大蕊花中則缺如或不發育，花絲無毛，花藥黃色；子房被濃密之絨毛，在小蕊花中不發育；小花梗長一至二公分，被毛。果實為粗壯翅果，五至八枚生於下垂之果序上，幼嫩時為黃綠色，成熟時變為深紫色；小堅果之直徑為八至十公厘，凸出成圓球形，有極顯著之網狀脈紋，被粗毛；小堅果連翅長四公分半至五公分，寬一公分八公厘至二公分，脈紋顯著，張開成直角或直立；果梗長二至三公

公分，粗壯，微被絨毛。
此種產於峨眉山之息心所，長老坪，九老洞，洗象池及大眾寺等處，海拔一千四百公尺至二千三百公尺之森林中。四月開花，九月果可成熟。

此種分佈於陝西，河南，湖北，湖南，四川，西康及雲南等省。

此種惟華西有之，在峨眉山中甚為普遍，其小蕊花序所有之花較多於大蕊花序之花。

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



141. *Acer Francheti* Pax

Shrubs China). - Cox in Gard. London, LXXXIX (1928), 449, fig. in p. 443. - Bean, Trees & Shrubs Hardy Brit. Isl. I (1929), 493. - Fang in Contr. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 144; XI (1933), 15 (Monogr. Chin. Aceraceae).

SOUTHWEST OF MOUNT OMEI: Opien-hsien, Lung-men-ku, W. C. Cheng, No. 6313, July 1936.

Distribution: Honan, Shensi, Hupeh, Szechuan, Sikkang and Kweichow.

Although this species has been well known from the provinces of Western China, it is very rare in occurrence. The recent discovery of it at southwest of Mount Omei proves how very rich is the flora of China in this region. W. P. Fang.

Fig. 7, a fruiting inflorescence (natural size); 8, a pinnate leaf (natural size).

圖版一百四十二

粉葉槭

槭樹科

小喬木高五至十公尺，稀達十五公尺；樹皮暗褐色或灰褐色，平滑，小枝細而無毛，當年生枝為紫綠色或灰綠色，多年生枝為灰綠色或褐綠色，無皮孔。冬芽小，橢圓形；表面一對鱗片紫紅色，無毛；裏面一對鱗片，開花後始特別長大，倒卵狀長圓形，淡黃色，除表面近先端處微被紫色絨毛外，餘皆無毛。葉冬季凋落，紙質，卵形，長八至十一公分，寬五至六公分，基部常為圓形或稀呈亞心臟形，先端尾狀漸尖形，邊緣具粗鋸齒，鋸齒密接鈍形或銳尖形；葉表面深綠色，無毛；背面淡綠色；基部具五主脈，稀不發育，側脈常四至五對，幼嫩時被濃密淡白色而細柔之毛，葉脈上更多，成熟時毛較稀少；葉柄長三至八公分，近先端處微被毛。大小蕊花異株，成總狀花序；小蕊花黃綠色，具長八至十五公厘之小花梗，常五至八枚成一長約一公分至一公分半且無毛之總狀花序，着生於一極短之大花梗上，由無葉之側芽發出，開放與葉同時，萼片四枚，倒卵狀長圓形，長三至四公厘，寬二公厘；花瓣四枚，較短於萼片，卵形，寬約一公厘，小蕊長四至五公厘，無毛，花藥黃色，卵形，花盤無毛，深裂，位於小蕊之外圍，無子房；大蕊花具萼片四枚，倒卵狀長圓形，長三至四公厘，寬二公厘，花瓣四枚，較短於萼片，卵形，無小蕊，花盤杯形，子房上位，扁形，無毛，花柱纖細，分枝而反捲，柱頭細小。果為翅果，幼嫩時紫色，成熟時變為黃褐色，着生於總狀果序上，長約十二至十五公分，具長三至四公分之果梗，頂生於着葉之枝上；小堅果長橢圓形，凸出，有極顯著之皺紋，長十三公厘，寬十公厘；翅連小堅果長四至五公分，寬一公分半稀達二公分，常直展，稀成鈍角；果梗長二公分至二公分半，細而無毛。

此種產於峨眉山之遇仙寺及蓮花石等處，海拔一千七百公尺至三千公尺之森林中。五月開花，八九月果可成熟。

此種分佈於湖北，四川，西康，雲南，西藏；喜馬拉雅山南部印度之哲孟雄等處。

此種之分佈，由哲孟雄東向經藏，滇，康，蜀諸省而至鄂西，在峨眉山則生於山中部深谷之林中，以其有不分裂之葉，葉緣有粗鋸齒，及葉背面被以白綠色而細柔之毛外觀似綠粉，故易辨別。

圖解：1. 果枝（原大）；2. 葉之一部，以示其葉背面之毛（放大二倍）；3. 小蕊花序（原大）；4. 小蕊花（放大五倍）；5. 大蕊花序（原大）；6. 大蕊花（放大五倍）。

金錢槭

此種產於峨眉山西南之峨邊縣。

此種前已熟知其分佈於河南，陝西，湖北，四川，西康及貴州等省。近於峨眉山之西南發現，適足以證明該地植物之豐富也。

圖解：7. 果序（原大）；8. 羽狀複葉（原大）。



142. *Acer stachyphyllum* Hiern. *Dipteronia sinensis* Oliver

Plate 143
JUGLANS REGIA Linnaeus.

Juglandaceae (Walnut)

Juglans regia Linnaeus, Spec. Pl. (1753), 997. - Loureiro, Fl. Coch. (1790), 573. - Bunge in Mem. Div. Sav. Acad. Sci. St.-Petersb. II (1833-35?), 136 (Enum. Pl. Chin. Bor. 62). - C. De Candolle in De Candolle, Prodr. XVI, pt. 2 (1864), 135. - Kurz in Journ. Bot. XI (1873), 193. - Hance in Journ. Bot. XIII (1875), 135. - Brandis, Forest Fl. Brit. Ind. (1874), 497; Ind. Trees (1906), 619. - Franchet in Mem. Soc. Sci. Nat. Cherbourg, XXIV (1884), 254. - Hooker, f. Fl. Brit. Ind. V (1838), 595. - Skan in Journ. Linn. Soc. Bot. XXVI (1899), 493. - Gilg in Engler, Bot. Jahrb. XXXIV, beibl. LXXV (1904), 28. - Rehder & Wilson in Sargent, Pl. Wilson. III (1916), 184. - Loesener in Bot. Centralbl., Beibl. XXXVII, abt. II (1919), 107. - Hers in Journ. N. China Branch R. As. Soc. LIII (1922), 111. - Rehder in Journ. Arn. Arb. IV (1923), 147. - Bean, Trees and Shrubs Hard. Brit. Isl. I (1914), 666. - Handel-Mazzetti, Symb. Sin. VII, Lieferung I (1929), 53.

Deciduous tree, usually 15, rarely up to 30, metres high; bark grey, smooth; branchlets stout, glabrous, green or deep green, with conspicuous leaf-scars and lenticels, pith lamellate. Winter-buds subglobose, several pairs of ovate scales yellowish-pubescent on both surfaces while young. Leaves alternate, odd-pinnate, 30-50 cm. long, consisting of 5-9 leaflets, subsessile, elliptical or oblong-ovate, 6-15 cm. long, 3-10 cm. broad, acute or acuminate on the apex, obliquely rounded at the base, entire on the margin, deep green and glabrous above, pale green below and with tufts of hairs at the axils of nerves while young, glabrous when matured, midrib conspicuous above, prominent below, primary veins 12-15 pairs just showing above, conspicuous below, leaf-rachis 18-25 cm. long, terete, at first puberulous, then glabrous. Flowers monoecious; staminate flowers numerous in pendulous catkins 8-12 cm. long, from lateral buds of branchlets, stamens 12-22, in the axils of bracts bearing 2 bractlets, perianth 4-lobed, anthers apiculate, sessile, 2-celled; pistillate flowers usually two on a stalk terminal on a branchlet, surrounded by a pubescent 3-lobed involucre consisting of a bract and 2 bractlets, perianth 4-lobed, ovary inferior, style divided into 2 plumose stigmas. Fruits green, glabrous, subglobose, drupe-like, 4-5 cm. in diameter; nuts usually ovoid or ellipsoid, pointed, slightly wrinkled, thick-walled.

MOUNT OMEI: Fu-hu-ssu, roadside, cultivated, tree 10 metres high, S. S. Chien, No. 5457, May 4, 1936; Lung-men-tung, alt. 546 m., at roadside, tree 15 metres high, staminate catkins greenish, W. P. Fang, No. 14187, April 20, 1940; same locality, tree 20 metres high, staminate catkins greenish, C. L. Chow, Nos. 5688 & 5688, March 31, 1942; Pao-chang-fung, alt. 1400 m., tree 8 metres high, flowers monoecious, staminate flowers greenish, in pendulous catkins, young fruits ovoid, W. P. Fang, No. 18009, April 16, 1942; without precise locality, H. C. Chow, No. 9661, April 1933; southwest of Mount Omei, Opien-hsien, W. C. Cheng, No. 5058, June 1936.

SZECHUAN: Nanchuan-hsien, K. L. Chu, No. 1165, in 1935; same locality, Y. C. Yang, No. 5055, April 1939; Kuan-hsien, cultivated near a house, tree about 12 metres high, staminate flowers purplish-yellow, in catkins, W. P. Fang, No. 12150, April 8, 1933; Chengtu, cultivated in the University, small tree 8 metres high, bark grey, smooth, pistillate flowers green, W. P. Fang, No. 12244, April 21, 1938; Chengtu, cultivated in the University, small tree 8 metres high, staminate flowers greenish, in catkins, W. P. Fang, No. 13367, April 22, 1939.

SIKANG: without precise locality C. P. Hwang, No. 504, April 7, 1930.

Distribution: Europe, Asia, China: Hopei, Shantung, Honan, Kweichow, Kiangsu, Anhwei, Kiangsi, Hupeh, Hunan, Szechuan, Sikang, Kweichow and Yunnan.

This is the common walnut in China. Its seeds are very rich in fats and have been commonly used as food with high-value. Its wood has been commonly used as good material for making gun-stalks and furniture. The glabrous and entire leaflets mark this species different from other species.....W. P. Fang.

Fig. 1, a fruiting and leafy branch (2/3 of natural size); 2, a pistillate flowering inflorescence (natural size); 3, a leafy and flowering branch with staminate flowering inflorescence (natural size); 4, a staminate flower (enlarged 10 times); 5, a stamen (enlarged 10 times); 6, a section of fruit (natural size); 7, a portion of leaf (enlarged 2 times).

圖版一百四十三

胡桃

俗名：核桃

胡桃科

落葉喬木高十五公尺，稀達三十公尺；樹皮灰色，平滑；小枝粗壯，無毛，綠色或深綠色，具顯明之葉痕及皮孔，髓白色，片狀。冬芽亞圓球形，具數對卵形鱗片，幼嫩時鱗片之兩面皆被淡黃色絨毛。葉互生，奇數羽狀複葉，長三十至五十公分，具小葉片五至九枚，近於無柄，橢圓形或長圓卵形，長六至十五公分，寬三至十公分，先端銳尖或漸尖，基部斜圓形，全緣，表面深綠色，無毛，背面片綠色，幼嫩時葉脈腋間具叢生之毛，成熟時則脫落，中肋在葉表面稍顯明，在葉背面則突出，側脈十二至十五對，在葉表面顯明，在葉背面尤較顯著，葉總軸長十八至二十五公分，圓形，初被絨毛，旋即脫落。大小蕊花同株；小蕊花多數，着生於長八至十二公分而下垂之葇荑花序上，由小枝側芽發出，小蕊十八至二十二本，生於大苞片及二小苞片之腋間，花被四裂，花藥先端短尖，無柄，二室；大蕊花每二枚生於一梗上，在小枝頂端，包圍於一被毛之總苞內，總苞由一大苞片及二小苞片所組成，花被四裂。子房下位，花柱分枝成二羽狀柱頭。果為綠色，無毛，亞圓球形，核果狀，直徑四至五公分；堅果常為卵圓形或橢圓形，先端尖形，微有皺紋，壁厚。

此種產於峨眉山之伏虎寺，龍門洞及寶掌峯等處。海拔五百餘公尺至一千四百公尺之路旁。三四月間開花，九月果可成熟。

此種分佈於河北，山東，河南，浙江，江蘇，安徽，江西，湖北，湖南，四川，西康，貴州及雲南等省。歐洲及亞洲各地均有栽培者。

此種為中國最普通之核桃。種子極富於脂肪，常用為極有價值之食品；木材常用以作楫托及傢俱。其葉全緣而無毛，堪為斯種之特徵，以別於他種。

圖說： 1. 果及葉枝（縮小三分之一）； 2. 大蕊花序（原大）； 3. 葉及具小蕊花之枝（原大）； 4. 小蕊花（放大十倍）； 5. 小蕊（放大十倍）； 6. 果之剖面（原大）； 7. 葉之一部（放大二倍）。



蕨屬植物圖志



143. *Juglans regia* Linnaeus

JUGLANS CATHAYENSIS Dode.

Juglandaceae.

Juglans cathayensis Dode in Bull. Soc. Dendr. France, (1909), 47, fig.; in Fedde, Repert. Spec. Nov. Reg. Veg. X, (1911), 296. - Wilson in Gard. Chron. ser. 3, L (1911), 189, fig. 88, t. - Bean, Trees & Shrubs Hardy Brit. Isl. I (1914), 664. - Rehder & Wilson in Sargent, Pl. Wilson. III (1916), 186. - Haudel-Mazzetti, Symb. sin. VII, Lieferung I (1929), 84.

Juglans mandshurica Skan (non Maximowicz) in Journ. Linn. Soc. Bot. XXVI (1899), 493, pro parte. - Pritzl in Engler, Bot. Jahrb. XXIX (1903), 274.

Juglans Sieboldiana Pritzl (non Maximowicz) in Engler, Bot. Jahrb. XXIX (1900), 274.

Juglans Draconis Dode in Bull. Soc. Dendr. France, (1909), 49, fig.; in Fedde, Repert. Spec. Nov. Reg. Veg. X (1911), 203.

Deciduous tree, usually 5 to 10, rarely to 20, metres high, bark grey then becoming brown or dark-brown, at first smooth, then becoming slightly fissured with age; branchlets stout, terete, with conspicuous leaf-scar and whitish lamellate pith, grey-pubescent mixed with glandular-hairs, lenticels conspicuous, ovate or linear. Winter-buds axillary, ellipsoid, scales several pairs, valvate, ovate, densely grey glandular-pubescent outside. Leaves alternate, exstipulate, oddpinnate, 30-50 cm. long, leaflets 9-15, sessile or subsessile, ovate-oblong or ovate, 8-17 cm. long, 3-7 cm. broad, acuminate or acute on the apex, obliquely rounded or subcordate at the base, serrulate on the margin, upper surface deep green and sparsely pubescent, lower surface pale green and densely greyish velvinous-pubescent mixed with glandular hairs while young, less so when matured, midrib conspicuous above, prominent below, 21-26 pairs of primary veins just showing above, prominent below, leaf-stalk terete, 20-30 cm. long, densely grey glandular-pubescent. Flowers monoecious; staminate flowers in pendulous catkins 10-20 cm. in length, from axillary buds lateral on branchlets, stamens 15-16 in the axils of oblanceolate bracts bearing 2 bractlets and 2, rarely 4, perianth-lobes, anthers sessile, yellow, oblong-ellipsoid, 2-celled; pistillate flowers usually 8 to 12 in a terminal raceme about 5 cm. in length, covered by a yellow-pubescent involucre consisting of a bract and 2 bractlets, perianth 4-lobed, style divided into 2 plumose stigmas. Fruits drupe-like, pubescent mixed with glandular-hairs, ovoid, 3-4.5 cm. long, usually 6-12 in a pendulous stout fruiting stalk; nuts thick walled.

MOUNT OMEI: near Ta-o-ssu, Lo-chia-chiao, alt. 1200 m., small tree 12 metres high, bark dark brown, young leaves green, pubescent, staminate flowers green, in pendulous catkins, pistillate flowers purple, in spikes, *C. L. Sun*, No. 47, May 3, 1939; Chu-tien, alt. 1800 m., small tree 5 metres high, bark brown, flowers green, *C. L. Sun*, No. 1544, April 16, 1940; same locality, in thickets, small tree 6 metres high, staminate flowers green in long pendulous catkins, *W. P. Fang*, No. 16603, May 12, 1941; without precise locality, *T. T. Yu*, No. 441, in 1932; without precise locality, *W. C. Cheng*, No. 6678, October 1936; without precise locality, *H. C. Chow*, No. 9871, in 1938; without precise locality, *C. W. Yao*, No. 3641, in 1939.

EZECHUAN: Kuan-hsien, Mt. Tsing-chang, *C. Y. Chiao*, sine no. May 1940.

Distribution: Chekiang, Kiangsu, Hupeh, Hunan, Szechuan and Yunnan.

This species is not uncommon in the forests near Chu-tien. It is easily recognized by the glandular-pubescent leaves, branchlets and fruits. The pistillate inflorescence consists usually 8 to 12 flowers and fruiting stalk consists also so many fruits that makes this species easily distinguished from other species of this genus..... *W. P. Fang*.

Fig. 1, a leafy and flowering branch (natural size); 2, a pistillate flower (enlarged 5 times); 3 & 4, staminate flowers (enlarged 5 times); 5, a stalk of fruits (natural size); 6, a portion of leaf to show the hairs (enlarged 10 times).

圖版一百四十四

華胡桃

俗名：野核桃

胡桃科

落葉喬木高五十公尺，稀達二十公尺，樹皮灰色，旋即變為褐色或暗褐色，幼嫩時平滑，漸老即變為片狀縱裂；小枝粗壯，圓形，具顯明之葉痕，及淡白色片狀之髓，被灰色絨毛及腺毛，皮孔顯著，卵形或線形。冬芽腋生，橢圓形，鱗片數對，鑷合狀排列，卵形，表面被濃密之灰色腺毛。葉互生，無托葉，多數羽狀複葉，長三十至五十公分，小葉九至十五枚，無柄或有短柄，卵狀長圓形或卵形，長八至十七公分，寬三至七公分，先端銳尖或漸尖，基部斜圓形或亞心臟形，葉緣具細鋸齒，葉表面深綠色並被稀疏之絨毛，背面淺綠色，幼嫩時被濃密之淡灰色細柔毛並具腺毛，成熟時則毛漸少，中肋在葉表面顯明，在葉背面突出，側脈二十一至二十五對在葉表面僅顯露，在葉背面則突起，葉柄圓形，長二十至三十公分，被濃密之灰色腺毛。大小蕊花同株，小蕊花着生於長十至二十公分而下垂之柔荑花序上，由腋生於小枝之側芽發出；小蕊十五至十六本，生於一倒披針形大苞片及二小苞片之腋，花被二裂稀為四裂。花萼黃色不具花絲，長圓狀橢圓形，二室；大蕊花常有八至十二枚生於長約五公分頂生之總狀花序上，蓋以披黃色絨毛之總苞，總苞具一大苞片及二小苞片，花被四裂，花柱分為二羽毛狀柱頭。果實核果狀，被絨毛及腺毛，卵圓形，長三至四公分半，常六至十二枚生於一下垂而粗壯之果梗上；堅果有厚壁。

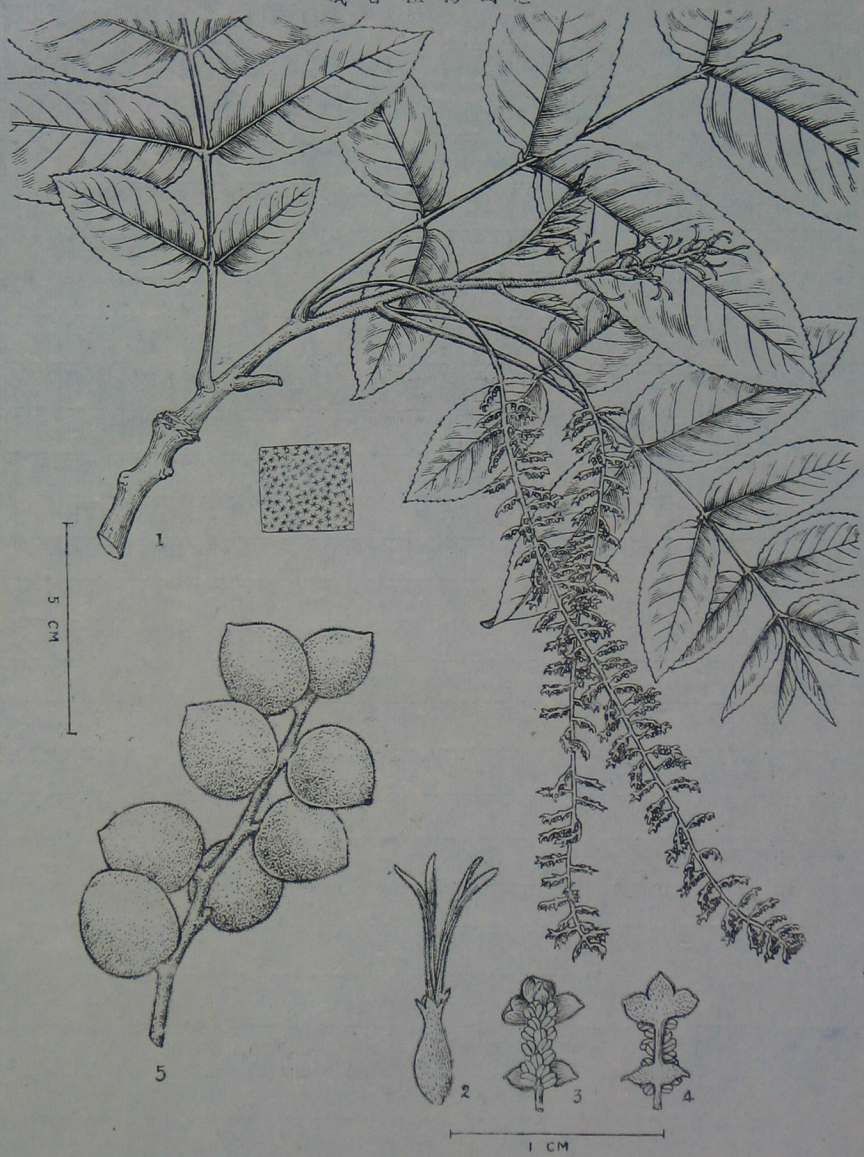
此種產於峨眉山大藏寺，初殿及長老坪等處，海拔一千二百至一八百公尺之草坡或森林中。四五月開花，九月果可成熟。

此種分佈於浙江，江西，湖北，湖南，四川及雲南等省。

此種在初殿附近甚普遍，其小枝與葉及果均具腺毛，大蕊花序常由八至十二花組成，而果梗上亦有多之果實，故易與此屬中其他各種辨別。

圖解：1. 着葉與花之枝（原大）；2. 大蕊花（放大五倍）；3及4. 小蕊花（放大五倍）；

5. 果序及所具之果實（原大）；6. 葉之一部，以示其毛（放大十倍）。



144. *Juglans cathayensis* Dode

Plate 145.

PTEROCARYA INSIGNIS Rehder et Wilson.

Juglandaceae.

Pterocarya insignis, Rehder et Wilson in Gargent, Pl. Wilson. III (1916), 183. Handel-Mazzetti, Symb. Sin. VII, Lieferung 1 (1929), 55.

Pterocarya Palurus, Franchet (non Batalin) in Journ. de Bot. XII (1898), 318, quoad descriptionem florum et specimen floribus masculis e Tchen-keon-tin.

Tree usually 15 metres, rarely up to 20 metres high, 50-70 cm. in diameter; bark grey or dark grey, slightly furrowed; branchlets stout, terete, brown or dark brown; glabrous, with conspicuous rounded or ovate lenticles; winter-buds elongate-conical, 2-3.5 cm. long, scales 3, brownish green, lanceolate or oblong-lanceolate, convolute, as long as the buds and covered the buds, yellow-scaly and sparsely pubescent on the outer surface, glabrous on the inner surface except puberulous at the middle part. Leaves odd-pinnate with 7-13 leaflets, 20-35 cm. long included, the petiole, lateral leaflets opposite or subopposite, the lower ones usually smaller than the upper ones, oblong or lanceolate-oblong, 7-15 cm. long, 2.5-4 cm. broad, acuminate on the apex, obliquely rounded at the base, shortly petiolulate or subsessile, terminal leaflets ovate or ovate-oblong, 10-12 cm. long, 5-6 cm. broad, acuminate on the apex; attenuate and broadly cuneate at the base, on petiolules 1.2-2 cm. long, all the leaflets serrulate on the margin with appressed sharp teeth, upper surface deep green, glabrescent except sparsely puberulous on the veins, lower surface pale green, at first floccose-tomentose and densely covered with small, pale scales, then glabrescent except yellow-tomentose on the midrib and lateral veins, midrib slightly depressed above, elevated below, primary veins 20-25 pairs, obsolete above, prominent below, rhachis terete, yellow-tomentose; petioles 5-6 cm. long, slightly grooved or flat above, rounded below, dilated at base, yellowish-tomentose. Flowers monoecious, staminate flowers subsessile, in pendulous catkins usually to 18 cm. long, bracts ovate, densely hirsute on the outer surface, stamens 15, sessile; pistillate flowers in an erect catkin up to 20 cm. long, on a peduncle 6 cm. long, with several sterile, elongated, pubescent bracts, fertile bracts subulate, perianth about 1.5 mm. long, slightly lobed, ovary inferior, styles 3-4 mm. long, hirsute and plumose at the apex. Fruit a sessile nut with persistent style and 2 orbicular-ovate wings 1.5-2 cm. long, 2-2.8 broad, in a sparsely glandular fruiting catkin up to 45 cm. in length, seeds yellow, shining.

MOUNT OMEI: Chiu-lao-tung, alt. 1800 m., *T. H. Tu*, No. 150, in 1935; same locality, *S. S. Chien*, No. 6153, July 15, 1937; same locality, in forests, tree 9 metres high, bark grey, *C. L. Sun*, No. 468, June 12, 1939; Hua-yen-ting, alt. 1950 m., in woods, tree 10 metres high, bark dark brown, flowers light green, *C. L. Sun*, No. 1838, May 6, 1940; Ta-cheng-ssu, alt. 2386 m., on open slopes tree 16 metres high, 70 cm. in diameter, *W. W. Ma*, No. 2531, June 23, 1940; same locality, tree 20 metres high, *T. C. Lee*, No. 3295, October 14, 1940; same locality, tree 10 metres high, *W. P. Fang*, No. 17159, July 5, 1941; southwest of Mount Omei, Opian-hsien, Yen-ching-chi, *W. C. Cheng*, No. 6453, July 1936.

SIKANG: Tien-chuan-hsien, *K. L. Chu*, No. 3528, July 27, 1936.

Distribution: Szechuan, Sikang and Yunnan.

This distinct species is of very beautiful tree and is easily recognized by its large winter-buds which are covered by three scales, by the large leaf with 7-13 leaflets on a tomentose rhachis and by its fruit with two orbicular-ovate insignia-like wings about 2 cm. in diameter. This species was discovered by the late Dr. E. H. Wilson at the base of Wa-shan, Opian-hsien. Through our extensive explorations it has been found on Mount Omei although is very rare. Its distribution is confined to Szechuan, Western Hupeh and Northeastern Yunnan.....W. P. Fang.

Fig. 1, a leafy and fruiting branch (natural size); 2, a flowering and young leafy branch (natural size); 3, a pistillate flowering inflorescence with flowers just over (natural size); 4, a pistillate flower (enlarged 10 times); 5, a staminate flower (enlarged 5 times); 6, a scale of the bud (enlarged 2 times).

圖版一百四十五

勳章楓楊

胡桃科

喬木高十五公尺，稀達二十公尺，直徑五至七公分；樹皮灰色或暗灰色，微現溝狀裂紋；小枝粗壯而圓形，褐色或暗褐色，無毛，具顯著之圓形或卵形皮孔；冬芽為長二至三分半之長圓錐形，鱗片三枚，褐綠色，披針形或長圓披針形，同旋狀，與芽等長而包被其外，外面有黃色鱗斑及稀疏之絨毛，內面除中部微有絨毛外餘皆無毛。葉為奇數羽狀複葉，具七至十三小葉，連同葉柄共長二十至三十五公分，兩側小葉對生或近於對生，愈近葉柄基之小葉形愈小，長圓形或披針狀長圓形，長七至十五公分，寬二公分半至四公分，先端漸尖，基部斜圓形，具短小葉柄或無柄，頂生小葉為卵形或卵狀長圓形，長十至十二公分，寬五至六公分，先端漸尖，基部漸尖或廣楔形，生於長一公分二至二公分之小葉柄上，小葉邊緣皆具密接而尖銳之鋸齒，葉表面深綠色，除脈上微有毛外餘皆光滑，葉背面深綠色，初被茸毛及濃密之小鱗斑，以後漸漸長大除中脈及側脈上有黃色絨毛外，餘皆光滑，中脈在葉表面微凹，在葉背則突起，側脈二十至二十五對，在葉表面不顯明，在葉背面則突出，葉軸圓形，被黃色絨毛；葉柄長五至六公分，上面微有溝或扁平，下面圓形，基部膨大，被淡黃色絨毛。大小葉花同株，小葉花近於無梗，着生於長十八公分而下垂之葉莖花序上，苞片卵形，表面密被粗毛，小蕊十五本，花藥卵形，不具花絲；大蕊花着生於長二十公分而直立之葉莖花序上，具長六公分之花梗，花外具數發育不全之長形苞片，表面被絨毛，發育良好之苞片或鑽形，花被長一公分半，先端微裂，子房下位，花柱長三至四公分，被粗毛，先端成羽狀。果為無柄之堅果，具宿存之花柱，及二枚長一公分半至二公分與寬二公分至二公分半之卵圓形之翅，着生於長達四十五公分被稀疏茸毛之葉莖果序上；種子黃色，光亮。

此種產於峨眉山之九老洞，非嚴頂及大壩寺，海拔一千八百公尺至二千四百公尺左右之森林中。五月開花；八月果可成熟。

此樹極美觀，冬芽大形且具三大鱗片，羽狀複葉具七至十三小葉生於被絨毛之總葉軸上，果有二圓形如勳章之翅，其直徑約二公分，故易識別。此種為歐爾遜氏首先發現於峨邊臨之瓦山，近年已於峨眉山發現，惟甚稀少。其分佈僅限於四川，湖北西部及雲南之東北端。此種之命名，係因其圓形之翅，狀似勳章，故名勳章楓楊。

圖解：1. 着葉與果之枝（原大）；2. 着花與嫩葉之枝（原大）；3. 大蕊花序，花已開過（原大）；4. 大蕊花（放大五倍）；5. 小蕊花（放大五倍）；6. 冬芽之鱗片（放大二倍）。

峨眉植物圖志



145. *Pterocarya insignis* Rehder et Wilson

PTEROCARYA STENOPTERA C. De Candolle.

翼果木，樹皮，肉質：堅硬
Juglandaceae.

Pterocarya stenoptera, C. De Candolle in Ann. Sci. Nat. ser. 4, XVIII (1862), 34; Prodr. XVI, pt. 2, (1864), 140; Hance in Journ. Bot. XI (1873), 376; Maximowicz in Bull. Acad. Sci. St.-Petersb. ser. 3, XVIII (1873), 64; Mel. Biol. VIII (1873), 639; Lavalley, Icon. Arb. Segrez. (1885), 65, t. 19. Skan in Journ. Linn. Soc. Bot. XXVI (1893), 494; Pritzl ex Diels in Engler, Bot. Jahrb. XXIX (1900), 274; Gilg in Engler, Bot. Jahrb. XXXIV, Beih. LXXV (1904), 28; Diels in Engler, Bot. Jahrb. XXXVI, Beih. LXXXII (1906), 33; Dunn et Tutcher in Kew Bull. Misc. Inform. add. ser. X (1912), 280 (Fl. Kwangtung & Hongk.); Rehder et Wilson in Sargent, Pl. Wilson, III (1916), 161; Hers in Journ. N. China Branch R. As. Soc. LIII (1922), 114; Rehder in Journ. Arn. Arb. IV (1923), 146; Handel-Mazzetti, Symb. Sin. VII, Lieferungs 1 (1928), 65. 具手翅的翅果木科，翅果木，色綠而表面有刺毛。
Pterocarya brevica Hort. ex Lavalley, Icon. Arb. Segrez. (1885), 65 (pro. synonym). 翅果木至葉背大
Pterocarya chinensis Hort. ex Lavalley, Icon. Arb. Segrez. (1885), 65 (pro. synonym). 翅果木至葉背大
Pterocarya japonica Hort. apud Dippel, Handb. Laubholz. II (1892), 329, fig. 161.
Pterocarya stenoptera var. *typica* Franchet in Journ. de Bot. XII (1898), 317; Pampanini in Nuov. Giorn. Bot. Ital. ser. XXVII (1899), 318; Loeben in Bot. Centralbl. Beih. XXXVII, abt. II (1919), 107 (Prodr. Fl. Tsingtauen).

Tree 15, rarely up to 25, metres high, 1-2 metres in diameter; bark brownish to dark grey, deeply furrowed; branchlets terete, green or greenish-grey, at first sparsely pilose, then glabrescent, with conspicuous ovate lenticels, pith lamellate; winter buds long stalked, naked. Leaves alternate, odd-pinnate, 20-40 cm. long, rachis more or less winged and the largest wing usually serrate, leaflets 11-25, sessile, opposite or those on the lower part of rachis opposite and those from the upper part of rachis subopposite or alternate; ovate-oblong or narrow-oblong 6-8 cm. long, 2 cm. broad, acute or obtuse at the apex, subrotund or obliquely obtuse rarely obliquely cuneate at the base, serrulate on the margin, upper surface deep green, glabrous, lower surface pale green, punctate, glabrous except slightly pubescent along the veins, midrib flat above, prominent below, lateral veins 13-15 pairs, obsolete above, conspicuous below; petioles 3-5 cm. long, enlarged at base, slightly pubescent. Flowers monoecious, in pendulous catkins, staminate catkins from the branchlets of last year, 6-10 cm. long, staminate flowers with an elongated ovate bract adnate with two bractlets, perianth entire or two-lobed, stamens 6 or more, anthers yellow, ellipsoid, sessile or with very short filaments, pistillate catkins 5 cm. long, from the upper part of branchlet, pistillate flowers solitary, in the axil of yellow-pubescent ovate bract and with two lateral lanceolate bractlets at its base, perianth tubular at base and adnate to ovary, 4-lobed above the middle, style short, divided into two purple stigmas, ovary 1-celled, 1-ovuled. Fruit a nutlet with two oblong wings 1.8-2 cm. long, in a fruiting raceme about 30 cm. long.

MOUNT OMEI: near Wan-hsing-chuang, alt. 470 m., at roadside, H. O. Chow, No. 9514, in 1933; same locality, tree 15 metres high, both staminate and pistillate flowers green, W. F. Fang, No. 13093, March 23, 1940; same locality, O. L. Chow, No. 5585, March 18, 1942; same locality, W. P. Fang, No. 14982, May 10, 1940; Pao-kuo-ssu, alt. 480 m., tree 12 metres high, staminate flowers and pistillate flowers greenish with 2-lobed rubby stigmas, W. P. Fang, No. 13998, March 19, 1940; Fu-hu-ssu, side of ravine, tree 18 metres high, S. S. Chin, No. 5458, May 4, 1939; same locality, tree 15 metres high, staminate flowers greenish in pendulous catkins, appearing before leaves, W. P. Fang, No. 13900, March 9, 1940.

Distribution: Shantung, Shensi, Kansu, Kiangsu, Chekiang, Kiangsi, Hupei, Szechuan, Sikang, Kweichow, Yunnan, Fokien, Kwangtung, Kwangsi.

This species is fairly common at the base of Mount Omei, especially at side of streams and in ravines. It may be cultivated as high-way-side tree..... W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a pistillate flower (enlarged 20 times); 4, staminate flowers (enlarged 10 times); 5, a fruit (enlarged 1.5 times).

圖版一百四十六

楓楊

別名：麻柳，溪楊，元寶楓。

胡桃科

喬木高十五公尺，稀達二十公尺，直徑一至二公尺；樹皮淡褐色或暗灰色，深縱裂；小枝圓形，綠色或綠灰色，初被稀疏之絲狀毛，旋即脫落，具顯明之卵形皮孔，髓空心，片狀；冬身裸露而具長柄。葉互生，奇數羽狀複葉，長二十至四十公分，總軸具翅，且最大之翅常有鋸齒，小葉十一至二十五枚，無柄，對生在總柄下部者為對生，在上部者近於對生或互生，卵狀長圓形或狹長圓形，長六至八公分，寬二公分，先端銳尖或鈍形，基部亞圓或斜錢形，稀為斜楔形，葉緣具鋸齒，葉表面深綠色，無毛，背面蒼綠色，具腺點，除沿脈微被絨毛外，餘皆無毛，中脈在葉表面扁平，在葉背面則突出，側脈十三至十五對，在葉表面不顯露，在葉背則顯明；葉柄長三至五公分，基部膨大，微被絨毛。大小蕊花同株，着生於下垂之柔荑花序上，小蕊花序由前年小枝上發出，長六至十公分，小蕊花具一長卵形之大苞片與二合生之小苞片，花被完整或二裂，小蕊六本或更多，花藥黃色，橢圓形，無花絲或花絲極短；大蕊花序長五公分，由小枝上部發出，大蕊花單生於被黃色絨毛之卵形苞片之腋間，基部有二側生披針形之小苞片；花被基部管狀而與子房合生，中部以上成四裂，花柱短，裂為二紫色柱頭，子房一室，一胚珠。果為小堅果，具二長圓形之翅長一分半至二公分，着生於長約三十公分之總狀果序上。

此種產於峨眉山山麓之萬行莊，報國寺及伏虎寺，海拔四百至七百公尺之溪旁及路側。三月開花，七月果可成熟。

此種分佈於山東，陝西，甘肅，江蘇，浙江，江西，湖北，四川，西康，貴州，雲南，福建，廣東及廣西等省。

此種在各省有極罕見，可大量栽培，作為行道樹。

圖解：1. 花枝（原大）；2. 果枝（原大）；3. 大蕊花（放大二十倍）；4. 小蕊花（放大

十倍）；5. 果實（放大倍半）。

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峨眉植物圖志



146. *Pterocarya stenopiera* C. De Candolle

Plate 147.

ENGELHARDTIA CHRYSOLEPIS Hance.

Juglandaceae.

Engelhardtia chrysolepis Hance in Ann. Sci. Nat. Ser. 4, XV (1861), 227; in Journ. Linn. Soc. Bot. XIII (1873), 124.— Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 186.— Handel-Mazzetti, Symb. Sinicae, VII, Lieferung I (1928), 55.

Engelhardtia Wallichiana Lindley in Wallich, Cat. No. 4942 (1830) (nomen nudum).— C. De Candolle, Prodr. XVI, pt. 2 (1864), 141.— J.D. Hooker in Hooker, f. Fl. Brit. India, V (1883), 596.— Skan in Journ. Linn. Soc. Bot. XXVI (1899), 496.— Dunn et Tutchter in Kew Bull. Misc. Inform. add. ser. X (1912), 261 (Fl. Kwangtung & Hongkong).

Engelhardtia pterococca Roxburgh, Fl. Ind. III (1832), 531 (pro parte).

Engelhardtia Wallichiana Lindley var. *chrysolepis* C. De Candolle, Prodr. XVI, pt. 2 (1864), 142.— Skan in Journ. Linn. Soc. Bot. XXVI (1899), 495.

Evergreen small tree 8 metres, rarely up to 15 metres, high; bark brown or yellowish-brown, smooth; branchlets slender, terete, glabrous, those of the current-year sparsely glandular, pith solid. Winter-buds axillary, ovoid or elongated, with 2 ovate scales yellow-glandular outside. Leaves coriaceous, 15-20 cm. long, pinnate, with 4-8 leaflets ovate-oblong or obovate-oblong, 8-10 cm. long, 2-3 cm. broad, shortly acuminate on the apex, obliquely cuneate or obliquely broad-cuneate at the base, entire and slightly revolute on the margin, upper surface deep green, glabrous or sparsely glandular, lower surface pale green or yellowish-green, densely yellow glandular, midrib conspicuous above, prominent below, primary veins 15-18 pairs obsolete above, slightly conspicuous below; rachis terete, 3-6 cm. long, sparsely glandular, on stout petioles 2.5-3.5 cm. long, petioles 6-7 mm. long, slightly grooved above, rounded below. Flowers minute, monoecious; staminate flowers in erect branched catkins, perianth usually consisting of 4 glandular scale-like lobes, stamens 8-12, subsessile, inserted on and included in the Perianth-lobes, anthers minute; pistillate flowers on pedicels 3 mm. long, solitary on a pendulous glandular catkin, 18-20 cm. long, bracts 3-lobed, densely golden-yellow glandular, perianth thick, obovate, glandular, 3-lobed, adnate to the inferior ovary, stigmas 4, sessile. Fruit a glandular globose nutlet crowned with the 4-lobed perianth, adnate to the base of scarious 3-lobed reticulately nerved bract, lobes oblanceolate, the middle lobe is the longest, 4.5 cm. in length, lateral lobes 1.5-2.3 cm. long; pedicels slender, glandular, 5 mm. long, in a pendulous fruiting spike 18-20 cm. long.

MOUNT OMEI: Pao-ning-ssu, alt. 450 m., tree 8 metres high, *T. C. Lee*, No. 3526, September 22, 1940; same locality, *T. C. Lee*, Nos. 4539 & 4781, October 1940; same locality, tree 14 metres high, flowers yellow, *C. L. Chow*, No. 6224, June 4, 1942; Pao-kno-ssu, alt. 500 m., tree 12 metres high, flowers yellow, *C. L. Chow*, No. 6096, May 12, 1942; Erh-ping, alt. 600 m., small tree 12 metres high, *W. P. Fang*, No. 17452, June 28, 1944; same locality, tree 14 metres high, *C. L. Chow*, No. 6288, June 22, 1942; Liang-fong-kang, tree 7 metres high, young fruits yellow, *T. C. Lee*, 3323, August 14, 1940; same locality, tree 15 metres high, flowers yellow, *C. L. Chow*, No. 6314, June 23, 1942; Hei-lung-kiang, alt. 600 m., at roadside, small tree 10 metres high, flowers yellow, rare, *T. C. Lee*, No. 2690, July 7, 1940; Pao-chang-fong, in woods, tree 8 metres high, pistillate flowers yellow, *T. C. Lee*, No. 3173, August 3, 1940; without precise locality, *T. H. Tu*, No. 975, in 1935; without precise locality, *S. N. Hsu*, No. 576, in 1938; without precise locality, *C. W. Yao*, No. 5032, in 1939.

Distribution: Szechuan, Sikiang, Hunan, Kweichow, Yunnan, Kwangtung, Kwangsi; Singapore, Penang.

We have found this species fairly common at the foot of Mount Omei. The species is near *Engelhardtia Colebrookiana* Lindley, but it differs easily by the glandular leaves not tomentose at the lower surface and by the glandular catkins as well as glandular fruits which are neither hispid nor hirsute..... W. P. Fang.

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

圖版一百四十七

黃 杞

胡 桃 科

常綠小喬木高八公尺，稀達十五公尺；樹皮褐色或黃褐色，平滑；小枝細圓而無毛，當年生枝被稀疏之腺毛，髓心堅實。冬芽腋生，卵圓形或長圓形，具二卵形鱗片，表面被黃色腺毛。葉革質，長十五至二十公分，羽狀，具四至八小葉，小葉卵狀長圓形或倒卵狀長圓形，長六至十公分，寬二至三公分，先端稍尖，基部斜楔形或斜廣楔形，全緣且微反捲，葉表面深綠色，無毛或被稀疏之腺毛，背面淺綠色或黃綠色，被濃密之黃色腺毛，中肋在葉表面顯明，在葉背面則突出，側脈十五至十八對，在葉表面不顯露，在葉背面微顯明；總葉軸圓形，長三至五公分，被稀疏之腺毛，着生於長二公分半至三公分半之粗壯葉柄上，小葉柄長五至七公厘，上面微有溝，下面圓形。花小，大小蕊花同株；小蕊花成直立分枝之柔荑花序，花被常由四被腺體之鱗片裂片所組成，小蕊八至十二本，具短花絲，着生於花被裂片之內，花藥極小；大蕊花生於長三公厘之花梗上，單生於下垂被腺毛之柔荑花序上，長十五至二十公分，苞片三裂，外被濃密之金黃色腺毛，花被甚厚，倒卵形，具腺毛，三裂，與下位子房合生，柱頭四，無柄。果為被腺毛之圓球形小堅果，先端具宿存而四裂之花被，基部與具網脈或三裂之薄膜質苞片合生，苞片倒披針形，中央苞片極長，長四公分半，兩側苞片長二公分半至二公分八公厘；果梗細而具腺毛，長五公厘，着生於長十八至二十公分而下垂之穗狀果序上。

此種產於峨眉山之保寧寺，報國寺，二坪，涼風崗，黑龍江及寶掌峯等處，海拔四百餘公尺至一千四百公尺之路旁或森林中。五月開花，九十月果可成熟。

此種分佈於四川，西康，湖南，貴州，雲南，廣東，廣西，新加坡及檳榔嶼等處。

此種在峨眉山山麓最普通，與短蕊黃杞極相近，所不同者，在其葉背面有腺狀毛而無絨毛，柔荑花序及果皆被腺毛，但絕無刺毛或粗毛。

圖解：1.着果及葉之枝（原大）；2.着花及葉之枝（原大）；3.小蕊花（放大五倍）；4.大蕊花（放大五倍）；5.幼嫩果序（原大）。



147. *Engelhardtia chrysolepis* Hance

PLATYCARYA STROBILACEA Siebold et Zuccarini.

Juglandaceae.

Platycarya strobilacea Siebold et Zuccarini in *Abh. Akad. Muench.* III (1843), 742, t. 6, fig. 1.— Maximowicz in *Bull. Acad. Sci. St.-Petersb.* ser. 3, XVIII (1873), 64; in *Mem. Biol.* VIII (1873), 640.— Franchet in *Nouv. Arch. Mus. Paris.* ser. 2, VII (1884), 92 (Pl. David. 1. 282).— Skan in *Journ. Linn. Soc. Bot.* XXVI (1899), 498.— Fritzel ex Diels in *Engler. Bot. Jahrb.* XXIX (1900), 273.— Pampalini in *Nouv. Giorn. Bot. Ital. n. ser.* XVII (1900), 31.— Dunn et Tutchet in *Kew Bull. Misc. Inform. add.* ser. X (1912), 261 (Pl. Kwangtung & Hongk.).— Leveille, *Fl. Kouy-Tcheou.* (1914), 203.— Rehder et Wilson in *Sargent, Pl. Wilson.* III (1916), 180.— Chun, *Chin. Econ. Trees* (1921), 57.— Hers in *Journ. N. China Branch. R. As. Soc.* LIII (1922), 113; *Liste Ess. Lign. Honan* (1922), 21.— Rehder in *Journ. Arn. Arb.* IV (1923), 146.— Handel-Mazzetti, *Symb. Sincae*, VII, *Lieferung I* (1929), 56.

Fortunaca chinensis Lindley in *Journ. Hort. Soc. London*, 1 (1846), 150.

Deciduous tree 10-15 metres, rarely up to 20 metres, high; bark brown or dark brown, smooth; branchlets terete, brown or purplish-brown, at first pubescent, then glabrous, with conspicuous lenticels and solid pith. Winter-buds axillary, ovoid, scales several pairs, obtuse, glabrous. Leaves alternate, odd-pinnate, 15-30 cm. long, leaflets 7-15, sessile, ovate-lanceolate to oblong-lanceolate, 4-12 cm. long, 2-3 cm. broad, acuminate on the apex, obliquely rounded at the base, doubly serrulate on the margin, sparingly pubescent while young, glabrous when matured, deep green above, pale green below, midrib conspicuous above, prominent below, primary veins 17-20 pairs, obsolete above; conspicuous below; rachis terete, purplish, glabrescent; petioles 4-6 cm. long, dilated at base. Flowers small, without perianth, monoecious; staminate flowers in erect pubescent catkins 6-10 cm. long, usually 8-18 terminal on branchlets but below pistillate catkins, stalk 6 mm. long, bracts lanceolate or ovate-lanceolate, 4 mm. long, usually incurved, whitish-pubescent on both sides, stamens 8-12, sessile, in the axils of bracts, anthers yellow, 2-celled; pistillate flowers in an erect ovoid or oblong catkins, 1.5-2 cm. long, above the staminate catkins, terminal on branchlets, rarely axillary, ovary adnate to the pubescent stiff acuminate bracts, 4 mm. in length, style 2-branched, short and thick, pubescent, occasionally the pistillate catkins terminal by a staminate catkin. Fruits compressed winged nutlets in the axils of purplish-brown, stiff, lanceolate bracts, forming an ovoid strobile 2-3 cm. long.

MOUNT OMEI: Pao-ning-ssu, alt. 450 m., *H. C. Chow*, No. 8892, October 17, 1936; same locality, at roadside, small tree 5 metres high, *W. P. Fang*, No. 18641, May 6, 1942; same locality, *C. L. Chow*, No. 6247, June 11, 1942; Liang-long-kang, alt. 800 m., small tree 7 metres high, *C. L. Chow*, Nos. 6069 & 6105, May 25, 1942; King-lung-ssu, small tree 8 metres high, *W. P. Fang*, No. 18907, August 8, 1940; Hung-chun-ping, alt. 1147 m., *H. C. Chow*, No. 7606, June 12, 1938; She-tao-tui, alt. 1300 m., in forests, small tree 16 metres high, leaves green, flowers yellowish-green, *W. W. Ma*, No. 2327, June 14, 1940; same locality, *T. C. Lee*, No. 3131, August 1, 1940; Ta-ping, alt. 1400 metres, in woods, tree 10 metres high, very common, *T. G. Lee*, No. 2772, July 12, 1940; Hsin-kai-ssu, alt. 1600 m., tree 14 metres high, flowers green, *C. L. Chow*, No. 6166, May 27, 1942; southwest of Mount Omei, Open-hsien, *W. C. Cheng*, No. 5978, June 16, 1936; without precise locality, *C. W. Yao*, No. 4858, in 1939.

SZECHUAN: Nanchuan-hsien, *K. L. Chu*, No. 1671, in 1936; Kuan-hsien, *S. S. Chien*, No. 5701, May, 25, 1936.

SIKANG: Tien-chuan-hsien, *K. L. Chu*, Nos. 2556 & 3661, in 1936.

Distribution: Honan, Shensi, Chekiang, Kiangsu, Anhwei, Kiangsi, Hupeh, Szechuan, Sikang, Hunan, Kwelchow, Yunnan, Kwangtung, Kwangsi, Corea, Japan.

This species is very common in forests or in ravines at the foot of Mount Omei. It is a monotypic species and is easily recognized by the perianthless flowers in catkins on the apex of the branchlets with a solitary pistillate catkin above the staminate ones and by the winged nutlets in the axils of stiff bracts forming a strobile which has been used as a good material for black dye.

..... W. P. Fang.
Fig. 1, a flowering and leafy branch (natural size); 2, a pistillate flower (enlarged 10 times); 3, a staminate flower (enlarged 10 times); 4, a strobile (natural size); 5, a fruit with a bract (enlarged 5 times).

圖版一百四十八

化香樹

胡桃科

落葉喬木高十至十五公尺，稀達二十公尺；樹皮褐色或暗褐色，平滑；小枝圓筒形，褐色或紫褐色，初被絨毛，旋即脫落，具顯明之皮孔及堅實之髓。冬芽腋生，卵圓形，具鱗片數對，鈍形，無毛。葉互生，奇數羽狀複葉，長十五至三十公分，小葉七至十五枚，均無小葉柄，卵狀披針形至長圓披針形，長四至十二公分，寬二至三分，先端漸尖，基部斜圓形，葉緣具雙鋸齒，幼嫩時被稀疏之絨毛，成熟時即脫落，葉表面深綠色，背面淺綠色，中肋在葉表面顯明，在葉背則突出，側脈十七至二十對，在葉表面而不顯露，在葉背面則顯著；葉軸圓形，紫色，光滑；葉柄長四至六公分，基部膨大。花小，無花被，大小蕊花同株；小蕊花生於長六至十公分直立而被絨毛之藥莖花序上，常為八至十八花序圍生於小枝之先端，但在大蕊花序之下，花梗長五公厘，苞片披針形或卵狀披針形，長四公厘，常向內反捲，內外兩面皆被淡白色絨毛，小蕊八至十二本，無花絲，着生於苞片之腋間，花藥黃色，二室；大蕊花生於直立卵圓形或長圓形之藥莖花序上，長一公分半至二公分，生於小枝先端而位於小蕊花序之上，稀為腋生，子房與被毛而堅硬之漸尖形苞片合生，長四公厘，花柱分為二枝，短而寬，被絨毛，偶亦有小蕊藥莖花序位在大蕊藥莖花序之上者。果為左右扁平且具翅之小堅果，生於紫褐色披針形且密集而堅硬苞片之腋間，全果序形成長二至三分之卵圓形球果狀。

此種產於峨眉山之報國寺，涼風崗，金龍寺，洪椿坪，蛇倒退，大坪，新開寺及息心所等處，海拔四百餘公尺至一千四百公尺之森林中。五月開花，十月果可成熟。

此種分佈於河南，陝西，江蘇，浙江，安徽，江西，湖北，四川，西康，湖南，貴州，雲南，廣東，廣西等省以及朝鮮，日本。

此種在峨眉山之山麓一帶極為習見。此種為一單種屬植物，極易辨別，因其生於小枝先端之無花被之花所成之藥莖花序，暨單生之大蕊藥莖花序位於叢生之小蕊花藥莖花序之上，且生於披針形堅硬苞片腋間之小堅果密集成一果叢，此果叢已用為黑色染料之絕好材料。

圖解：1. 着花與葉之枝（原大）； 2. 大蕊花（放大十倍）； 3. 小蕊花（放大十倍）； 4. 球果（原大）； 5. 小堅果及一苞片（放大五倍）。



148. *Platycarya strobilacea* Siebold et Zuccarini

Plate 149.

GINKGO BILOBA Linnaeus.

Ginkgoaceae.

Ginkgo biloba Linnaeus, Mant. Alt. (1771), 313.— Thunberg, Fl. Jap. (1784), 388.— Lamarck, Encycl. Meth. II (1786), 712.— Parlatore in De Candolle, Prodr. XVI. pt. II (1868), 607.— Miquel in Siebold & Zuccarini, Fl. Jap. II (1870), 73, t. 136.— Franchet & Savatier, Enum. Pl. Jap. I (1875), 474.— Debeaux in Act. Soc. Linn. Bordeaux, XXX (1875), 110 (Fl. Shangh. 68); LXXII (1879), 66 (Fl. Tien-tsin, 43).— Masters in Journ. Linn. Soc. Bot. XVIII (1881), 500; XXVI (1902), 146.— Sargent in Garden & Forest, VI (1893), 473; Forest Fl. Jap. (1894), 75.— Faber in Denkschr. Entwickel. Kautschou, (1898), 27.— Pritzels in Engler, Bot. Jahrb. XXIX (1900), 213.— Shirasawa, con. Ess. For. Jap. I (1900), 10, t. 8, fig. 1-14.— Gilg in Engler, Bot. Jahrb. XXXIV, beibl. LXXV (1904), 18.— Meyer in U.S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XIII (1908), 25, No. 19590.— Pampanini in Nuov. Giorn. Bot. Ital. n. Ser. XVIII (1911), 15.— Rehder & Wilson in Sargent, Pl. Wilson. II (1914), 1.— Loesener in Bot. Centralbl. Beibl. XXXVII, abt. II (1919), 83.— Chun, Chin. Econ. Trees (1921), 1, pl. t. 2.— Hers in Journ. N. China Branch. R. As. Soc. LIII (1922), 111; Liste Ess. Lign. Honan, (1922), 14.— Rehder in Journ. Arn. Arb. IV (1923), 117.— Handel-Mazzetti, Symb. Sin., VII, Lieferung I (1929) 1.— Bean, Trees & Shrubs Hard. Brit. Isl. I (1929), 592, pl., (5th Edit.).

Ginkgo Kaempfer, Amoen., (1712), 811, t.

Salisburia adiantifolia Smith in Trans. Linn Soc. III (1797), 330.— Bunge in Mem. Acad.

Sav. Etr. St. Petersb. II (1833), 139 (Enum. Pl. Chin. Bor. 62).— Maximowicz in Mem. Div. Sav. Acad. Sci. St. Petersb. IX (1859), 477 (Ind. Fl. Pekin.).— Siebold & Zuccarini in Abh. Akad. Munch. IV. pt. III (1846), 233 (Fl. Jap. Fam. Nat. II. 109).

Pterophyllus Salisburicensis Nelson, Pinacnae (1866), 163.

Deciduous tree usually 20, rarely up to 40, metres high, forming a pyramidal crown; bark grey or yellowish-grey, fissured, glabrous; branchlets consist of 2 kinds: long branchlets slender, terete, grey, glabrous, horizontally spreading or slightly pendulous; short branchlets spur-like, lateral on long branchlets, with conspicuous leaf-scars. Winter-buds conical, scales brown. Leaves deciduous, alternate and scattered on long branchlets, clustered on short branchlets, fan-shaped or broadly wedge-shaped, 6-8 cm. long, 5-8, rarely to 16 cm. broad, entire or wavy-margined usually cleft into two lobes, parallel veined, at first light green, then changed to deep green in the summer and yellowish green in the autumn; petiole 3-6 cm. long, slender, glabrous, without stipules. Flowers small, inconspicuous, unisexual, dioecious, developing with the unfolding of the leaves from the short lateral spurs; staminate flowers usually 2 on a peduncle and in pendulous catkins, without perianth, each stamen with two anthers on a short stalk, pollen-grains with spiral marks; pistillate flowers consisting of a pair of naked ovules on a stout stalk 2-3 cm. long, mostly one ovule developed into fruit and after fertilization becoming enveloped in a fleshy covering. Fruit an ovoid drupe, about 3 cm. long, orange-yellow when matured, with glaucous bloom, solitary or very rarely in pairs; skin thin, flesh soft, acrid, seeds white or cream-coloured, edible, covered by a angled thin shell; peduncle 3-4 cm. long, stout, glabrous.

MOUNT OMEI: Pao-kue-ssu, Fu-hu-ssu, Huang-wan and Wan-nien-ssu, *W. P. Fang*, without number, April to May, 1940; Ta-o-ssu, Lung-hseng-kang, at side of forests, tree 20 metres high, fruits green, ovoid, *T. C. Lee*, No. 3037, July 29, 1940; Hung-chun-ping, *H. C. Chow*, Nos. 7566, 9476, 9508 & 9511, April to June, 1938.

Hopel: Peiping, *T. N. Liou*, No. 7431, April 19, 1930.

KIANGSU: Pao-hua-shan, *W. C. Cheng*, No. 5904, April 12, 1938.

SZETCHUAN: Chengtu, tree 10-12 metres high, *S. S. Chien*, No. 5175, April 10, 1936; same locality, cultivated in the University, tree 20 metres high, young fruits green, *W. P. Fang*, No. 13621, March 6, 1939.

SIKANG: Tien-chuan-hsien, *K. L. Chu*, No. 2379, April 1936.

Distribution: Manchuria, Hopel, Shantung, Kiangsu, Chekiang Anhwei, Kiangai, Hupeh, Hunan, Szechuan, Sikang, Kweichow, Yunnan; Japan.

This tree has been found not uncommon at the foot and lower slopes of Mount Omei and other districts of Szechuan province, usually cultivated either near temples or at the side of houses. On account of its brownish, straight small grained wood, it has been used to make book-shelves and other fancy furniture *W. P. Fang*.

Fig. 1, a staminate flowering shoot (natural size); 2, a pistillate flowering shoot (natural size); 3, a long leafy shoot (natural size); 4, pistillate flowers (enlarged 4 times); 5, a stamen (enlarged 10 times); 6, a pollen-grain showing the spiral mark (enlarged 1,800 times); 7, a fruit (natural size); 8, a dissection of fruit (natural size); 9, a seed (natural size).

圖版一百四十九

銀杏 別名：公孫樹，白果樹。

銀杏科

落葉喬木常高二十公尺，稀達四十公尺，樹冠尖塔形；樹皮灰色或黃灰色，縱裂，無毛；枝分長短兩種；長枝細圓，灰色，無毛，平斜向伸展或略下垂；短枝距形，生於長枝之側，具顯著之葉苞。冬芽圓錐形，鱗片褐色。葉冬季凋落，在長枝上稀疏而互生，在短枝上叢生，扇形或闊楔形，長六至八公分，寬五至八公分，稀達十五公分，邊緣完整或成波狀，常自其中央分為裂片，具平行葉脈，初為淡綠色，俟於夏季變為深綠色，至冬季則變為黃綠色；葉柄長三至六公分，纖細，無毛，不具托葉。花小，不顯著，單性，大小蕊花異株，着生於短枝上，與葉同時開放；小蕊花着生於下垂之葇荑花序，每花梗均具二花，無花被，每小蕊具二花藥生於短柄上，花粉粒具螺旋狀花紋；大蕊花常僅兩枚裸露之胚珠，着生於長二至三公分之粗壯短梗上，胚珠均可發育為種子，並在受粉以後常發育一肉質厚殼，包圍於其外。果為卵圓形核果，長三公分，成熟時褐黃色，被白粉，單生或稀雙生；內殼薄而堅硬，外殼肉質，辛辣並有臭氣，種子白色或乳白色，被有稜之薄殼所包圍；果梗長三至四公分，粗壯，無毛。

此種產於峨眉山之報國寺，伏虎寺，黃灣，龍昇崗，萬年寺及洪梅坪等處之路旁或寺廟旁邊。四五月開花，八月果可成熟。

此種分佈於東三省，河北，山東，江蘇，浙江，安徽，江西，湖北，湖南，四川，西康，貴州，雲南；日本。

此種在峨眉山麓及四川各屬均極習見，常栽培於寺廟及住宅旁邊。因其木材褐色細紋，常用以製書架及其珍貴器具。

圖解：1. 小蕊花枝（原大）；2. 大蕊花枝（原大）；3. 葉枝（原大）；4. 大蕊花（放大四倍）；5. 小蕊（放大十倍）；6. 花粉粒示其螺旋狀花紋（放大一千五百倍）；7. 果實（原大）；8. 果之薄殼（原大）；9. 種子（原大）。

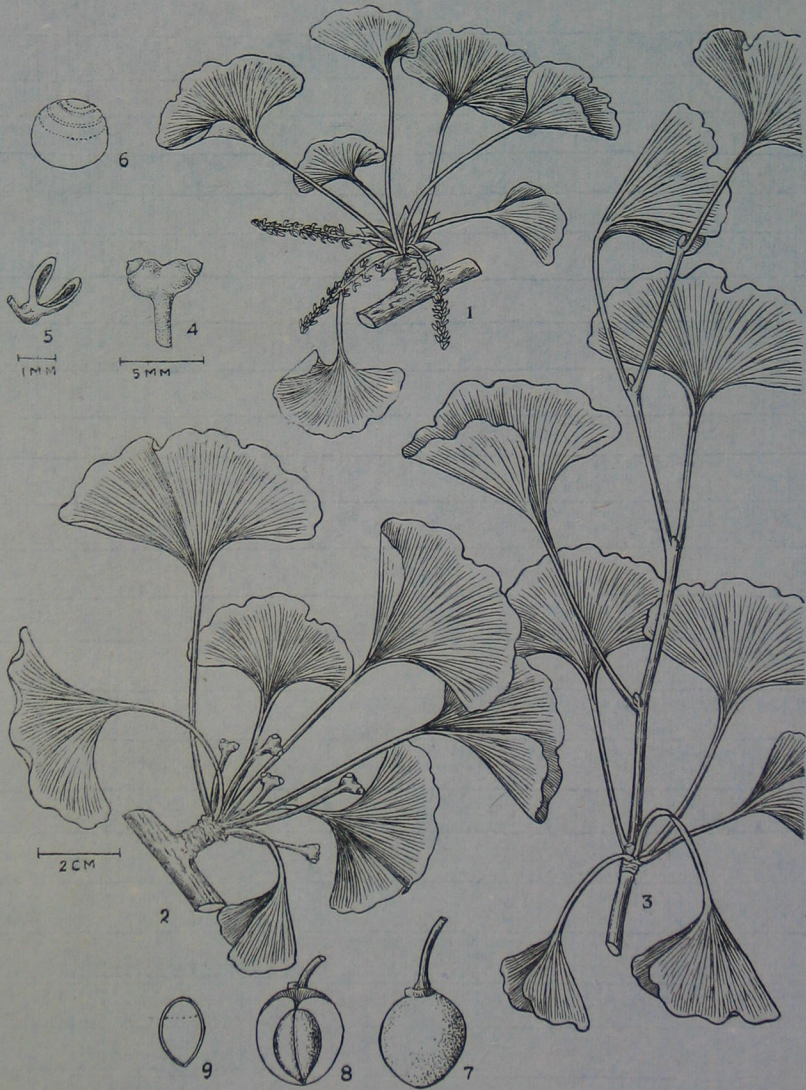


Plate 150.

CATALPA OVATA G. Don.

Bignoniaceae.

Catalpa ovata G. Don, Gen. Syst. IV (1837) 230.— Lavalee, Icon. Arb. Segrez. (1880) 33, t. 10.— Rehder in Sargent, Pl. Wilson. I (1913), 303.— Handel-mazzetti, Symb. Sin. VII. Lieferung 4 (1936). 689.

Bignonia Catalpa Thunberg (non Linnaeus), Fl. Jap. (1684), 251.

Catalpa bigonioides, B? *Kaempferi*, De Candolle, IX (1846), 226.

Catalpa Kaempferi, Siebold & Zuccarini in Abh. Acad. Muench, IV. 3 (1846), 142 (Fl. Jap. Fam. Nat. II. 18).— Lemaire in Ill. Hort. IX (1862), t. 310.— Hooker f. in Bot. Mag. CVIII (1862), t. 6611.

Catalpa Henryi, Dode in Bull. Soc. Dendr. France (1907), 199. fig. D. E.

Tree usually 10, rarely up to 15, metres high, bark grey or yellowish grey, smooth; branchlets stout, widely spreading, those of the current year green, sparingly hirsute, those of more than one year old grey or yellowish grey, glabrescent, with conspicuous lenticels and large conspicuous leaf-scars; winter-buds axillary with several pairs of outer scales. Leaves subopposite or subverticillate, chartaceous, broadly ovate or ovate, 10-25 cm. long, 7-18 cm broad, acuminate or abruptly acuminate on the apex, subcordate or subrotund at base, entire or shallowly 3-5-lobed on the margin, upper surface deep green, puberulous while young and with tufts of yellow hairs at the axils of veins, lower surface pale green, pubescent on the veins and veinlets, nerves prominent below, with 4 purple glandular spots at the axils of nerves; petioles 12-20 cm. long, cylindric, dilated at base, green, sparingly hirsute. Flowers fragrant, in terminal panicles 12-18 cm. long, sparingly hirsute; calyx campanulate, 7 mm. long, green, glabrous, deeply 2-lobed, lobes ovate or obovate, 5 mm. long, abruptly acuminate; corolla campanulate, 12-20 mm. long, 7 mm. in diameter, yellowish or yellowish-white, purple spotted inside, 2-lipped, upper lip 2-lobed, lower lip 3-lobed, with 2 orange nectary bands; stamens 2, inserted at the base of corolla and included in the corolla, anthers versatile. Ineare, yellow, 2-celled; ovary superior, cylindric, glabrous, style as long as the stamens, glabrous, stigma slightly 2-lobed. Fruits cylindric capsules, 30-38 cm. long, seeds oblong with a tuft of long white hairs at each side.

SOUTHWEST OF MOUNT OMEI: Opieh-hsien, *W. C. Cheng*, No. 5964, May 1936.

SZECHUAN: Chengtu, on the campus of National Szechuan University, cultivated tree 7 metres high, flowers yellowish with purple spots inside the corolla, *W. P. Fang*, No. 19263, May 15, 1943.

Distribution: Shantung, Hupeh, Szechuan, Kweichow, Yunnan.

This species is easily recognized by its small yellowish flowers and its large, usually glabrescent, leaves. It has been commonly cultivated on the Chengtu plain, but is rare in the wild state on Mount Omei and its vicinity *W. P. Fang*.

Fig. 1, a flowering branch (natural size); 2, a flower (enlarged 2 times); 3, a flower without corolla and stamens to show the pistil and calyx (enlarged 3 times); 4, the corolla dissected to show the stamens (enlarged 2 times); 5, a stamen (enlarged 3 times); 6, a portion of leaf to show the hairs on the lower surface (enlarged 20 times); 7, a portion of leaf to show hairs on the upper surface (enlarged 20 times); 8, a fruit (natural size); 9, a seed (enlarged 3 times).

圖版一百五十

梓 樹

紫葳科

喬木高十公尺，稀達十五公尺，樹皮灰色或黃灰色，平滑；枝粗壯，伸展極寬，當年生之枝綠色，疎被絨毛，多年生之枝灰色或黃灰色，無毛，其顯著之皮孔及大形之葉疤；冬芽腋生，具鱗片數對。葉近於對生或輪生，紙質，圓卵形或卵形，長十至二十五公分，寬七至十八公分，先端漸尖或突然漸尖，基部亞心臟形或亞圓形，全緣或三至五淺裂，表面深綠色，幼嫩時被柔毛並於葉脈之腋具覆生之柔毛，背面淡綠色，葉脈上被絨毛，主脈在葉背面突出，在脈腋具四紫色腺點；葉柄長十二至二十公分，圓柱形，基部膨大，綠色，疎被絨毛。花具芬香，生於頂生之圓錐花序上，長十二至十八公分，疎被絨毛；花萼鐘形，長七公厘，綠色，無毛，二裂甚深，裂片卵形或倒卵形，長五公厘，突然漸尖，花冠鐘形，長十二至二十公厘，直徑七公厘，淡黃色或黃白色，裏面具紫色斑點，先端裂為二唇形花之瓣，上唇二裂，下唇三裂，具二褐色之蜜腺帶，小蕊二本着生於花冠基部且全包藏於花冠之內，花藥線形，與花絲相交成丁字形，黃色，二室；子房上位，圓柱形，無毛，花柱與小蕊等長，無毛，柱頭微二裂。果為圓柱形蒴果，長三十至三十五公分，種子長圓形，兩端具覆生之白色長毛。

此種產於峨眉山西南之峨邊縣。

此種分佈於山東，湖北，四川，貴州及雲南等省。

此種具黃色小花及近於無毛之大葉，故易於辨別。在成都平原已普遍栽培，但在峨眉山及其附近則野生者甚稀少。

圖解：1.花枝（原大）；2.花（放大二倍）；3.一花折去其花冠及小蕊以示其大蕊及花萼（放大三倍）；4.花冠解剖以示小蕊（放大二倍）；5.小蕊（放大三倍）；6.葉背面之一部以示其毛（放大二十倍）；7.葉表面之一部以示其毛（放大二十倍）；8.果（原大）；9.種子（放大三倍）。



150. *Catalpa ovata* G. Don.

Plate 151.

BEGONIA PEDATIFIDA Leveille.

Begoniaceae.

Section *Platycentrum*.***Begonia pedatifida*** Leveille in Fedde, Repert. Spec. Nov. VII (1906), 21.

Perennial herb, 26-30 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, 13-16 cm. long, 16-18 cm. broad; petiole sparsely setulose, 12-20 cm. long; stipules scarious, ovate, obtuse, 10 mm. long, 8 mm. broad. Inflorescence corymbose, 5-8-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 5 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. 600 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. 13727, May 14, 1942; same locality, herbs 60-80 cm. high, leaves green above and purplish below, deeply lobed, flowers white, *C. L. Chow*, No. 600#, 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 30-60 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 80-80 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

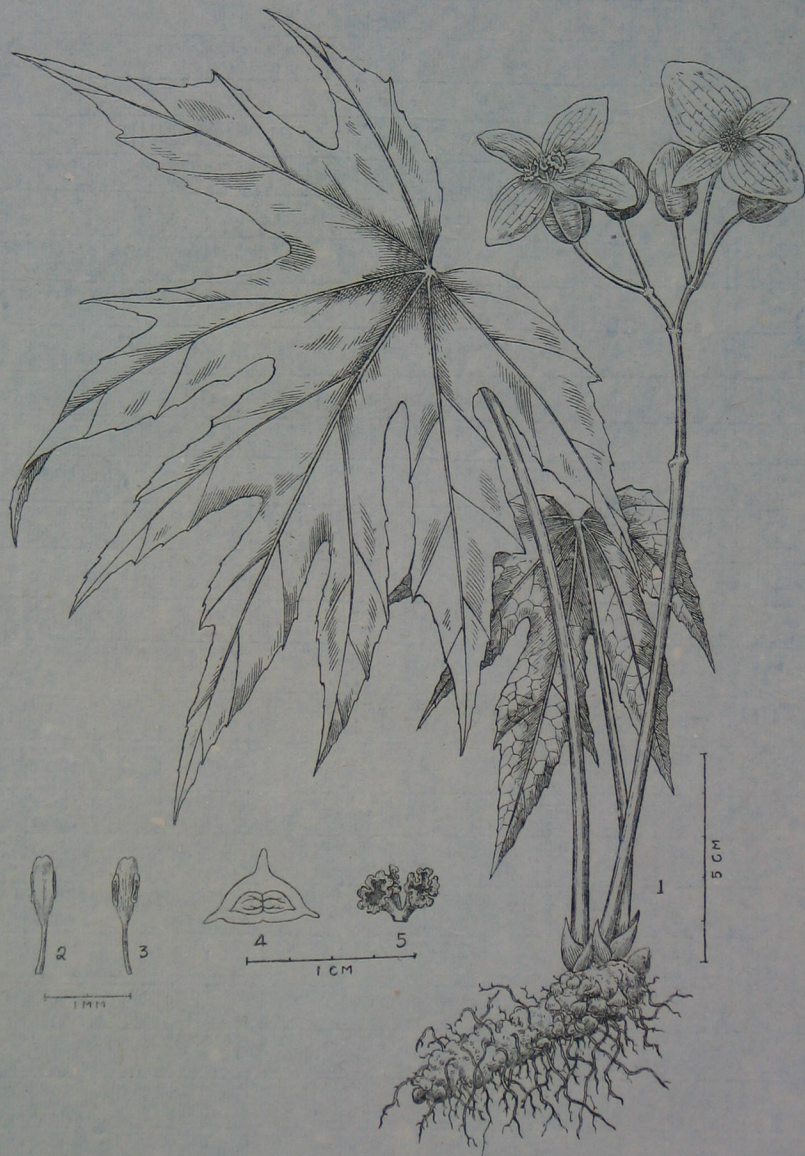
多年生草本，高二十五至三十公分，具肥厚多節之根莖，附以纖維狀根。葉根出，二至五枚。葉片全形近卵圓，而為深掌狀分裂，裂片五至七枚復呈羽狀分裂或深缺刻，上下兩面具稀疏短刺毛，先端漸尖，基部心臟形，邊緣具粗細不等的鋸齒，全長十三至十五公分，全寬十六至十八公分；葉柄長十二至二十公分，被稀疏短毛；托葉膜質，卵圓形，先端鈍尖，長約八公厘，寬約八公厘。花序繖房狀，着花五六朵；花軸長十八至二十公分，光滑無毛；花梗長一公分半至二公分半。小蕊花具花被四片，內外各二，外花被寬卵圓形，長十八至二十公厘，寬十二至十五公厘，先端平鈍，外面微具短毛；內花被長卵圓形，長十四至十六公厘，寬七至八公厘，先端平鈍，內外光滑；小蕊多數，離生，藥囊呈長橢圓形，先端鈍圓，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，清音閣及洪槍坪等處。

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。其親緣最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）。



151. *Begonia pedatifida* Leveille

Plate 152.

BEGONIA HOUTTUYNIOIDES Yu.

Begoniaceae.

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

Herba subcaulescens, 8-18 cm. lata. Caulis repentinus, dense ferrugineus, corpusculis crispulopilis, 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 palmatim dispositi. Petiolus dense ferrugineo-crispulo-pilosus, 3-8 cm. longus; stipulae triangulo-ovatae, acutae, glabrae, scariosae, caedae. 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 femini: 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 spiritaliter longe-papillose fissi; ovarium crispulo-pilosum, 2-loculamentum inequaliter teralata, ala maior polygonia et obtusa, 2-3 mm. longa, ceterae multo angustiores 0.5-1 mm. latae; laminae placentarii 2 in innoquoque 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, scarious, canducous. 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-szu, 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 28, 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 thickets, 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; Hong-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 20, 1942; without precise locality, C.W. Yao, No. 3921, in 1939.

This new species is closely related to *B. Limprichtii* Irmischer, but differs from that species in the glabrous inflorescence, the much smaller 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

秋海棠

新種

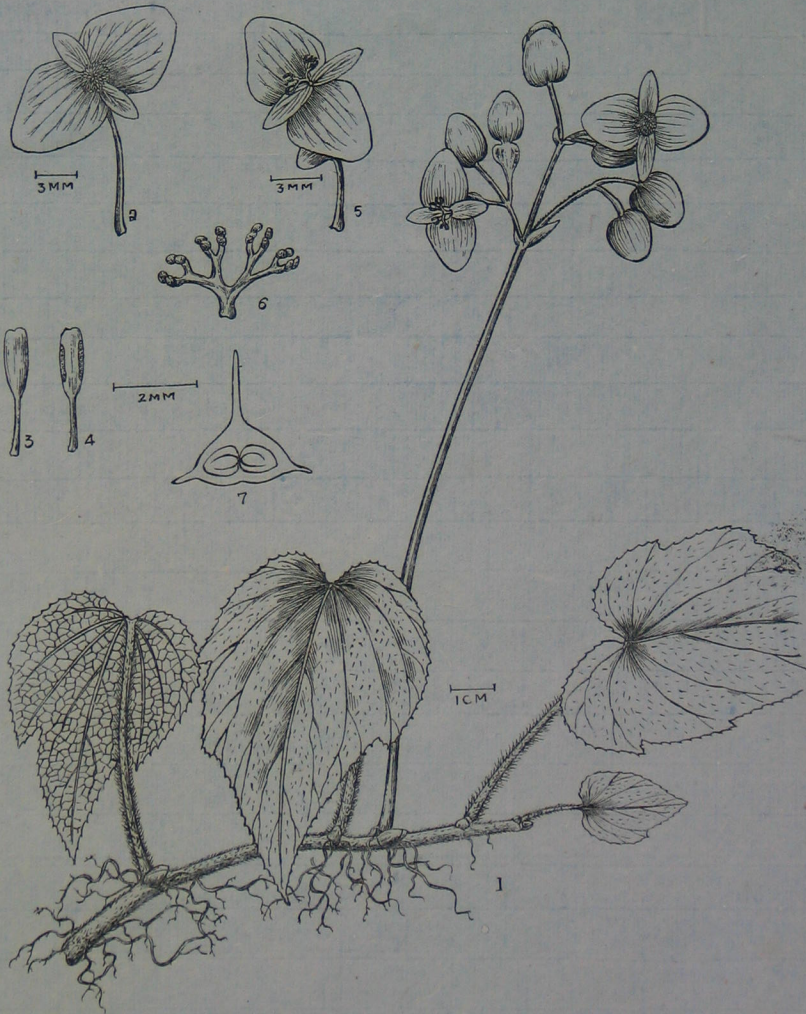
秋海棠科

匍匐草本高八至十五公分。葉平臥地上，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，表面深綠色具藍色刺毛，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。花序圓出，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。小蕊花具花瓣四片，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，藥蓋長橢圓形或倒卵形，先端微凹或平鈍，長約一公厘。大蕊花具花瓣四片，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，先端具直立繚旋狀多毛之柱頭；子房二室，外被軟毛，三瓣大小不等，大者近於方形具平鈍頭，寬二至三公厘，其餘二瓣窄細如鐮刀狀，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，黑龍江及洪溝等處。其葉之形狀與色澤俱以迥異於林氏秋海棠相類似，而其花序光滑，花葉遠為細小，大蕊花具花瓣四片，子房胎座兩裂，與前者之花序多毛，大蕊花具花瓣五片，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以迥異於林氏秋海棠(魚腥草)，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)。

峨眉植物圖志



152. *Begonia houttuynioides* Yü

Plate 153.

BEGONIA WILSONII Gagnepain.

Begoniaceae.

Section *negonlastrum*.**Begonia Wilsonii** Gagnepain in Bull. Mus. d'Hist. Natur. Nat. xxv (1919), 261.

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, 8-6 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. 4941, October 2, 1942; Lung-meng-tung, alt. 546 m., herbs 50 cm. high, leaves green above and pale green below, flowers pinkish-white, *C. L. Chow*, No. 4736, October 4, 1941; Hung-chung-ping, alt. 1147 m., *H. C. Chow*, No. 8154, August 16, 1938; same locality, *C. L. Chow*, No. 6637, September 14, 1942; Taping, alt. 1400 m., *C. L. Chow*, Nos. 6622 & 6632, September 5, 1942; Chiu-shih-chiu-tau-kual, alt. 1400-1600 m., herb 70 cm. high, *W. P. Fang*, No. 17822, September 29, 1941; Chiu-lau-tung, alt. 1800 m., *W. P. Fang*, No. 17486, August 8, 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, Kuuming.

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，外緣近菱方形，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；花梗長約六至十公厘。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。

本種產於藏加山之保寧寺，龍門洞，洪橋坪，尖坪，九十九洞，九老洞及白雲等等處。

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藏南山，野外採集記錄號數四九一二號，經法國植物學家甘紐木氏鑑定為新種，因以威氏之名名之，以資紀念。

圖解：1. 着花植物之全形（放大）；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）。

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. The specimens (E. H. Wilson no. 1004) were collected in 1904 from the same region. The genus *Yunnan Botanical Institute, Kunming.*
 Fig. 1. A flowering plant (natural size); 2. male flower (enlarged 6 times); 3. dorsal view of stamens (enlarged 20 times); 4. ventral view of stamens (enlarged 20 times); 5. female flower (enlarged 6 times); 6. style and stigma (enlarged 15 times); 7. cross section of ovary (enlarged 15 times).



153. *Begonia Wilsonii* Gagnepain

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 usque alternam in annum in ramulis remanentia, intersitiis 20-50 mm. longis dissita, stipulis deltoideis acutis, 0.75 mm. longis, persistentibus; petiols 2-3 mm. crassus, glabrus, supra medium longitudinally 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 prominentibus, subtus prominentibus, iuxta marginem cum nervis minoribus et multis intermixtis reticulo densissime conjunctis. Inflorescentiae in foliorum axillis et in basi ramorum crescentium fasciculatae, masculae bichotomae et etiam trichotomae, femineae subumbelliformes; bractae deltoideae, acutae, 2 mm. longae, 1.75 mm. latae, nigrescentes; prophylls in pediculorum basi inserta, deltoideae, 0.5 mm. longae, pediculus 2-3 cm. longus, in masculis, 15-17 mm. in femineis, pubescens; Pedicellis 6-8 mm. longis, hirtosis. 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 ellipsoideis; pistillum fl. masculi subgloboso-conicum, 1 mm. diam. i.e. 8-10 sulcatum. Drupa globosa, parva; stigma discoideum, obsolete 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 trigonis 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, 0.8 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 rotata, 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).

峨眉植物圖志



154. *Ilex omeiensis* S. Y. Hu

ILEX MICROCOCCA Maximowicz.

Aquifoliaceae.

Ilex micrococca Maximowicz in Bull. Acad. Sci., St. Petersburg. ser. 7, XXIX (3), (1881), 29, t. 1, fig. 6. Loesener in Nov. Act. Acad. Caes. Leop.-Carol. LXXVIII (1901), 61-92; Notes Roy. Bot. Gard. Edinb., XVII (1928), 116, (1930), 166, 268, 392, 367, 403. Merrill & Chun in Sunyatsenia, I (1) (1930), 68.

Ilex pseudo-Godajam Franchet in Journ. de Bot. XII (1893), 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 2.6-4 mm. thick, slightly angular. Leaves on elongated branchlets 1-2 cm. apart, exstipulate; petiole terete, longitudinally striate, 15-20 mm. long; lamina papery or submembranaceous, glabrous, oval, oval-elliptic or oval-oblong, 8-12 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, twice, thrice or often irregularly trichotomous 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 6-7 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-suboblong; 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, f. s. 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. 548 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-szu, alt. 1000 m., tree 8 metres high, fruits red, *W. P. Fang*, No. 15548, November 25, 1940; Ching-yin-ko, alt. 960 m., small tree 3 metres high, fruits red, globose, *W. P. Fang*, No. 15734, December 20, 1940; Niu-hsin-szu, alt. 960 m., tree 6 metres high, fruits red, *W. P. Fang*, No. 15576, November 30, 1940; Hui-fu-szu, alt. 1300 m., *W. P. Fang*, Nos. 18116 & 19184, December 1941; without precise locality, *S. N. Hsu*, No. 691, without date.

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

SEECHUAN: Nanchuan-hsien, tree 8 metres high, in thickets, *W. P. Fang*, No. 5056, October 28, 1928; same locality, in flower-buds, *K. L. Chu*, No. 1055, without date.

KWANGSI: without precise locality, *O. Wang*, Nos. 39316, 39983, & 40053.

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

This species may easily be distinguished by its small fruits and its twice or thrice trichotomous inflorescence or fruit-branches and its membranaceous leaves.

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，卵狀圓形或卵狀長圓形，長五至十二公分，寬二至六公分；基柄圓形，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，與中肋相成五十五至七十度之角，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，絨毛，邊緣具不規則之齒齒；花冠鐘輪狀；小蕊花之小蕊與花瓣等長，花瓣橢圓形，大蕊花之不孕小蕊較短於花冠，花藥心臟形，基部筒形；大蕊花之大蕊圓錐形，無花柱，柱頭圓狀，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，廣靈寺，清音閣，中心寺及會佛寺等處，海拔五百餘公尺至一千三百公尺之叢林中，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. 果殼其柱頭與宿萼（放大五倍）； 3. 核之背面（放大十倍）。

CHERRYING: H. H. Chen, in woods or in woods partly shaded, alt. 100 m., W. C. China, Yunnan, Mar. 20, 1934.

SECHUAN: Hanchuan-shan, tree 8 metres high, in thickets, N. P. Kiang, No. 1078, October 1934, without precise locality; W. L. Chou, No. 1078, without date.

KWANGSI: without precise locality, C. H. Yang, No. 1078, 1934, & 1935.

CHINA: Chekiang, Seochuan, Kwangtung, Kwangsi, Yunnan, Japan.

The species may easily be distinguished by its small fruits and the twice or three trichotomous influence on fruit-branches and the membrane leaves.

FIG. 1. A fruiting branch (natural size); 2. A cluster of fruits (enlarged 5 times); 3. A detail view of a nut (enlarged 10 times).

CHINA: Chekiang, Seochuan, Kwangtung, Kwangsi, Yunnan, Japan.

The species may easily be distinguished by its small fruits and the twice or three trichotomous influence on fruit-branches and the membrane leaves.

FIG. 1. A fruiting branch (natural size); 2. A cluster of fruits (enlarged 5 times); 3. A detail view of a nut (enlarged 10 times).



155. *Ilex micrococca* Maximowicz

Plate 188.

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), 233.
Ilex Oldhamii Miquel in Ann. Mus. Bot. Lugd. Bot. III (1867), 105. Hemslay in Journ. Linn. Soc. Bot. XXIII (1866), 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 Calaverit Leveille in Fedde Rep. Spec. Nov. IX (1911), 468; Fl. Kony-Tcheou. (1914), 439.

Embelia rubra-violacea Leveille in Fedde Rep. Spec. Nov. X (1912), 378; Fl. Kony-Tcheou. (1914), 266.

Gelastris 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, 5-15 sometimes up to 20 mm. apart; stipules minute, subulate-deltoid, 5 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, 8-10 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 axilla of leaves, glabrous or with few minute puberulent 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, prophylla minute, inserted at the base of pedicel, flowers 4-merous; calyx obconical-subcampanulate or patelliform, 1.75-2.75 mm. in diameter, glabrous, lobes rounded 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, staminoide 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 pistal 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. 600 m., small tree, 4 metres high, flowers small, purple, C. L. Chow, No. 6084, May 22, 1942; Lung-men-tung, alt. 646 m., small tree 5 metres high, fruits red, T. C. Lee, No. 4618, October 1940; same locality, small tree 6 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 8, 1943; Niu-hsin-ssu, small tree 5 metres high, W. P. Fang, No. 15753, 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. 1200 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-sau, alt. 1600 m., small tree 8 metres high, fruits scarlet-red, ovoid, W. P. Fang, No. 15700, December 6, 1940; same locality, at the side of forests,

C. L. Chou, No. 7172, October 16, 1942; Chang-lao-ping, alt. 1600 m., small tree 5 metres high, flowers reddish-purple, W. P. Fang, No. 12942, June 6, 1942; Yu-hsien-szu, alt. 1771 m., small tree 5 metres high, fruits red, W. F. 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 shuensis* 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 pycne (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，嫩葉嫩本之枝褐色有光澤，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；鮮葉二十公厘，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，嫩葉嫩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，線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；花冠輪輪狀，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，有四閉，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，顯心坡，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場最多之觀賞植物，其深綠之葉與紅色之果甚為靚麗。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 Chowii Hu shiu-ying, sp. nov.

Arbor; ramuli glaberrimi, tereti, longitudinaliter striato-angulati, brunneo-nigrescentes, sparsi lenticulis ellipticis, hornothni, 4 mm. crassi. Folia tantum annua 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 pallidior, elliptica, 9-13 cm. longa, 3-4.5 cm. lata; integerrima, basi acuta, apice abruptoacuminata, costa media supra et subtus elevata; nervis lateralibus utrinque circ. 8-9, sub angulo 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 pedicellibus insertis. Flores 5 meri; calyx subtus pelliformis, circ. 4 mm. diam., lobes obtusi, usculis ciliatis. Drupa ellipsoidea, 8 mm. crassa, stigmate discoido-coranata, nigrescens, 5-pyrenea. Pyrenis levis, 6 mm. longa, 2 mm. lata, subnigrescens, 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, pale 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. 8138, 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，枝箠形，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；托葉線形；葉柄長二十至二十五公厘，光滑無毛，有網紋，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；中肋在葉之兩端面凸起，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。果枝似線形，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，寬二公厘，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簡昌先生之姓。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; (1938), 178, 282, 391. Handel-Mazzetti, Symb. Sinicae, VII, Lieferung 3 (1933), 655. 中国高等植物志主编, 副主编, 第三卷, 主要类群, 副主编, 第二卷, 主要类群, 第三卷, 主要类群, 第四卷, 主要类群, 第五卷, 主要类群, 第六卷, 主要类群, 第七卷, 主要类群, 第八卷, 主要类群, 第九卷, 主要类群, 第十卷, 主要类群, 第十一卷, 主要类群, 第十二卷, 主要类群, 第十三卷, 主要类群, 第十四卷, 主要类群, 第十五卷, 主要类群, 第十六卷, 主要类群, 第十七卷, 主要类群, 第十八卷, 主要类群, 第十九卷, 主要类群, 第二十卷, 主要类群, 第二十一卷, 主要类群, 第二十二卷, 主要类群, 第二十三卷, 主要类群, 第二十四卷, 主要类群, 第二十五卷, 主要类群, 第二十六卷, 主要类群, 第二十七卷, 主要类群, 第二十八卷, 主要类群, 第二十九卷, 主要类群, 第三十卷, 主要类群, 第三十一卷, 主要类群, 第三十二卷, 主要类群, 第三十三卷, 主要类群, 第三十四卷, 主要类群, 第三十五卷, 主要类群, 第三十六卷, 主要类群, 第三十七卷, 主要类群, 第三十八卷, 主要类群, 第三十九卷, 主要类群, 第四十卷, 主要类群, 第四十一卷, 主要类群, 第四十二卷, 主要类群, 第四十三卷, 主要类群, 第四十四卷, 主要类群, 第四十五卷, 主要类群, 第四十六卷, 主要类群, 第四十七卷, 主要类群, 第四十八卷, 主要类群, 第四十九卷, 主要类群, 第五十卷, 主要类群, 第五十一卷, 主要类群, 第五十二卷, 主要类群, 第五十三卷, 主要类群, 第五十四卷, 主要类群, 第五十五卷, 主要类群, 第五十六卷, 主要类群, 第五十七卷, 主要类群, 第五十八卷, 主要类群, 第五十九卷, 主要类群, 第六十卷, 主要类群, 第六十一卷, 主要类群, 第六十二卷, 主要类群, 第六十三卷, 主要类群, 第六十四卷, 主要类群, 第六十五卷, 主要类群, 第六十六卷, 主要类群, 第六十七卷, 主要类群, 第六十八卷, 主要类群, 第六十九卷, 主要类群, 第七十卷, 主要类群, 第七十一卷, 主要类群, 第七十二卷, 主要类群, 第七十三卷, 主要类群, 第七十四卷, 主要类群, 第七十五卷, 主要类群, 第七十六卷, 主要类群, 第七十七卷, 主要类群, 第七十八卷, 主要类群, 第七十九卷, 主要类群, 第八十卷, 主要类群, 第八十一卷, 主要类群, 第八十二卷, 主要类群, 第八十三卷, 主要类群, 第八十四卷, 主要类群, 第八十五卷, 主要类群, 第八十六卷, 主要类群, 第八十七卷, 主要类群, 第八十八卷, 主要类群, 第八十九卷, 主要类群, 第九十卷, 主要类群, 第九十一卷, 主要类群, 第九十二卷, 主要类群, 第九十三卷, 主要类群, 第九十四卷, 主要类群, 第九十五卷, 主要类群, 第九十六卷, 主要类群, 第九十七卷, 主要类群, 第九十八卷, 主要类群, 第九十九卷, 主要类群, 第一百卷, 主要类群.

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 submamiform discoid. Pyrenes, 4, usually 5 mm. long, dorsal width 3 mm. across, smooth. 中国高等植物志主编, 副主编, 第三卷, 主要类群, 副主编, 第二卷, 主要类群, 第三卷, 主要类群, 第四卷, 主要类群, 第五卷, 主要类群, 第六卷, 主要类群, 第七卷, 主要类群, 第八卷, 主要类群, 第九卷, 主要类群, 第十卷, 主要类群, 第十一卷, 主要类群, 第十二卷, 主要类群, 第十三卷, 主要类群, 第十四卷, 主要类群, 第十五卷, 主要类群, 第十六卷, 主要类群, 第十七卷, 主要类群, 第十八卷, 主要类群, 第十九卷, 主要类群, 第二十卷, 主要类群, 第二十一卷, 主要类群, 第二十二卷, 主要类群, 第二十三卷, 主要类群, 第二十四卷, 主要类群, 第二十五卷, 主要类群, 第二十六卷, 主要类群, 第二十七卷, 主要类群, 第二十八卷, 主要类群, 第二十九卷, 主要类群, 第三十卷, 主要类群, 第三十一卷, 主要类群, 第三十二卷, 主要类群, 第三十三卷, 主要类群, 第三十四卷, 主要类群, 第三十五卷, 主要类群, 第三十六卷, 主要类群, 第三十七卷, 主要类群, 第三十八卷, 主要类群, 第三十九卷, 主要类群, 第四十卷, 主要类群, 第四十一卷, 主要类群, 第四十二卷, 主要类群, 第四十三卷, 主要类群, 第四十四卷, 主要类群, 第四十五卷, 主要类群, 第四十六卷, 主要类群, 第四十七卷, 主要类群, 第四十八卷, 主要类群, 第四十九卷, 主要类群, 第五十卷, 主要类群, 第五十一卷, 主要类群, 第五十二卷, 主要类群, 第五十三卷, 主要类群, 第五十四卷, 主要类群, 第五十五卷, 主要类群, 第五十六卷, 主要类群, 第五十七卷, 主要类群, 第五十八卷, 主要类群, 第五十九卷, 主要类群, 第六十卷, 主要类群, 第六十一卷, 主要类群, 第六十二卷, 主要类群, 第六十三卷, 主要类群, 第六十四卷, 主要类群, 第六十五卷, 主要类群, 第六十六卷, 主要类群, 第六十七卷, 主要类群, 第六十八卷, 主要类群, 第六十九卷, 主要类群, 第七十卷, 主要类群, 第七十一卷, 主要类群, 第七十二卷, 主要类群, 第七十三卷, 主要类群, 第七十四卷, 主要类群, 第七十五卷, 主要类群, 第七十六卷, 主要类群, 第七十七卷, 主要类群, 第七十八卷, 主要类群, 第七十九卷, 主要类群, 第八十卷, 主要类群, 第八十一卷, 主要类群, 第八十二卷, 主要类群, 第八十三卷, 主要类群, 第八十四卷, 主要类群, 第八十五卷, 主要类群, 第八十六卷, 主要类群, 第八十七卷, 主要类群, 第八十八卷, 主要类群, 第八十九卷, 主要类群, 第九十卷, 主要类群, 第九十一卷, 主要类群, 第九十二卷, 主要类群, 第九十三卷, 主要类群, 第九十四卷, 主要类群, 第九十五卷, 主要类群, 第九十六卷, 主要类群, 第九十七卷, 主要类群, 第九十八卷, 主要类群, 第九十九卷, 主要类群, 第一百卷, 主要类群.

MOUNT OMEI: Chieh-yin-tien, alt. 2839 m., small shrub 2 metres high, flowers in buds. *W. P. Fang*, No. 11609, June 27, 1940; same locality, shrub 3 metres high, flowers greenish, *W. P. Fang*, No. 16912, June 18, 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. 347, 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 fructus 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（放大）；2. 小蕊花（放大六十倍）；3. 大蕊花（放大十倍）；4. 果實（放大五倍）。

短梗雲南冬青新變種

葉短橢圓形或卵形或橢圓形，長二公分至三十四公厘，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（放大）。



158. *Ilex yunnanensis* Franchet

ILEX FARGESII Franchet.

Aquifoliaceae.

Ilex Fargesii Franchet in Journ. de Bot. XII (1898), 268; 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, subglabrescent. 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 l.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, l.s. reddish rugose, more or less longitudinally striate-sulcate; 4 pyrenes. Pyrene subtrigonous, 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

冬青屬

常綠灌木或小喬木。高五至七公尺，光滑無毛，小枝（標本）褐色，葉形，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；中肋頂面凹入，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，有四棱。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眉縣柳井溪。

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）。

我眉植物圖志



159. *Ilex fargesii* Franchet

Plate 160.

ILEX FRANCHETIANA Loesener.

Ilex Franchetiana Loesener in Sargent, Pl. Wilson, I (1913), 77. Rehd. et Wilson in Sargent, Pl. Wilson, III (1917), 426. Notes Roy. Bot. Gard. Edinb., XIV (1724), 662; Comber in Notes Roy. Bot. Gard. Edinb., XVIII (1933), 48.

Shrub or small tree 3-6 meters high, glabrous; branchlets brown-pubescent; this year's growth angular, smooth, 2-6 mm. thick. Leaves stipulate; petiole 5-12 mm. long, deeply grooved above; lamina 1-2 mm. thick, obovate-elliptic, oblong up to oblanceolate, rarely lanceolate-elliptic, 7-12.6 cm. long, 1.7-3.6 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, acumens up to 1.9 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 delicately ciliate; peduncle of male flower 1 mm. long, pedicel 2-4 mm. long; pedicel in female up to 4 mm. long, prophylla membranaceous, 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, delicately ciliate or entire; corolla rotate in male, erect in female, petals 4, oblong-ovate, 2 mm. long, 1.4 mm. wide; stamen subequal petal in length, anther oblong, 0.75 mm. long; staminode shorter than petal, sterile anther subcordiform; ovary subovoid, absolutely 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 subtrigonal, with 1 median 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, Opien-hsien, Yen-king-chi, C. C. Cheng 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 16-19, 1938, same locality, tree 6 meters high, C. W. Yao, No. 4331, August 20, 1939, Hung-wa-hsien, Wa-wu Mountain, way-side, in forest; tree 8 meters high, C. W. Yao, Nos. 2209, July 8, 1938, same locality, C. W. Yao, Nos. 3826, in June 25, 1939.

HUPÉH: Chang-yan-hsien, Wilson, No. 148.

SZÉCHUAN: Kuan-hsien, alt. 3000-3600 ft., in thickets, small tree, 6 meters high, fruits green, globose, W. P. Fang, No. 2222, July 14, 1928; Pan-lan Shan, woodland, alt. 3000 ft., Wilson, No. 4318; 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, 3 meters high, bark greenish black, fruit green, K. L. Chu, No. 3304, Ta-chienlu, Wilson, No. 1257.

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 ample of specimens, I have seen several intermediate cases such as C. W. Yao 2836 which specimen may well be considered as a narrow-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

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

Leaves uniformly small, 3-5, 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. 2324, August 21, 1938, (two specimens were seen); same locality, small tree, 3 meters high, *C. W. Yao*, No. 4306, 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 description for the species well except the leaves are uniformly smaller than *Ilex Franchetiana* Loes. Hu Shin-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，漸尖之部長十九公厘，中肋腹面凹入，背而凸出，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，小葉花一至三枚或聚繖小花序，大葉花單一，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，小葉花之總梗長一公厘，花梗長二至四公厘，大葉花之梗長四公厘；梗上苞膜質，小葉花者一片，大葉花者二片。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；小葉花之花冠輪狀，大葉花之花冠直立，花瓣四片，長橢圓狀卵形，長二公厘，寬一公厘半；小葉與花冠等長，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發轍瓦屋山及峨眉西南之峨邊鴨沙坪鹽井溪等處。

此種分佈於湖北，四川，西康等省。

當樊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較窄之葉，葉基無葉齒之邊緣等若有出入之處，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. 小葉花枝之一部（放大三倍）；3. 小葉花（放大三倍）；4. 大葉花與苞及柄上之苞（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漢雅瓦屋山及西南之峨邊鴨沙坪。

本變種與樊氏冬青之區別在其葉較小，約為樊氏冬青之半。

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，背面顯明，腹面之小脈網清晰。果球形，直徑三至五公厘，內有核四五粒，橫長二至四厘，有脊溝，木質化。

圖解：8. 變種之果枝（原大）。

峨眉植物圖志



160. *Ilex Franchetiana* Laesener

Plate 161.

ILEX CILIOSPINOSA Loesener.

Aquifoliaceae.

Ilex ciliospinosa Loesener in Sargent, Pl. Wilson. 1 (1913), 78.*Ilex bicristensis* Hayata var. *ciliospinosa* (Loesener) Comber. in Notes Roy. Bot. Gard. Edinburgh, 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, 1.5 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-scapulate, narrowed, coriaceous, midrib insculpt above, very slightly insculpt above, prominent 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; prophylls 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. Tse*, No. 720, in 1935; same locality, *W. C. Cheng*, No. 6591, October 1936; Southwest of Mount Omei, Opic-bai-en, *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 dipyrena* Wallich than to *Ilex bicristensis* Hayata. It differs from the former in having smaller leaves and ciliiform spines. It differs from the later 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 prophylls, (enlarged 5 times); 4. a mature fruit with prophylls, (enlarged 3 times); 5. dorsal view of pyrene, showing reticulation of ridges, (enlarged 3 times); 6. Ventral view of pyrene; (enlarged 3 times).

我眉植物圖志



161. *Ilex ciliospinosa* Loesener

Plate 162.

ILEX PEKNYI Franchet.

Aquifoliaceae.

Ilex Peryni Franchet in Nouv. Arch. Mus. Paris, Ser. 2. V. (1884) 221 (Pl. David. 1. 69).—
 Oliver in Hooker Icon. Pl. XVI. (1881), t. 1639. — Maximowicz in Act. Hort. Petrop. XI (1889), 96.—
 Loesener in Nov. Act. Acad. Leop.-Carol. LXXVIII (1901), 278; in Sargent, Pl. Wilson. 1 (1913), 78.—
 Hemsley in Journ. Linn. Soc. Bot. XXIII (1888), 117. — Rehder in Journ. Arn. Arb. VII (1926), 199;
 VIII (1927), 186. — Zombier in Notes Roy. Bot. Gard. Edinb. XVIII (1938), 57. 灌木—乔木。对生
 叶。Sub- or sometimes tree up to 10 metres high, bark grey, covered by small cracks; old branchlets
 subterete, this year's growth subangular, delimitately and shortly hexagonal, longitudinally striate or
 furrowed, densely foliately. Leaves remain on 4-year's growth, 0.10 mm. apart; stipules very
 minute, gibbiform, 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, venes 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-hsin-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, Hupch, Szechwan, Sikang, Kweichow, Yunnan.

Among the small leaf spiny hollies *Ilex Peryni* 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
 digramatic (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，枝柵形，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，多不見辨識；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，核圓三角形，背部具十縱紋，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

Plate 133.

ILEX DIPLOSPERMA Hu Shiu-ying.

Aquifoliaceae.

Ilex diplosperma Hu Shiu-ying, sp. nov.

Shrub or small tree up to 4 metres high; old branches terete, ash-grey to dirty brown, with minute longitudinal furrows; 3-year-old twig 3 mm. thick; last and this year's growth densely covered with short minute pulverulent papillae, subterete or longitudinally striate or seldom angular, densely leaved. Leaves remaining on 4-year's growth, 8-10 mm. apart; stipules minute, sometimes inconspicuous; petioles very short, 2-3 mm. long and thick, papillose when young becoming glabrous afterwards; lamina thick coriaceous, upper surface, in specimen, usually opaque, rugose, sometimes shining, olive-brown, lower surface opaque, pale-yellowish-brown, oblong, ovate or subquadrate, 2.3-4.8 cm. long, 1-2.6 cm. wide (excluding spines in both dimensions); margin thickened, in specimen, recurved, with 2-3 robust spines on each side, spines 1-3 mm. long, pointing outward; base round, sometimes cuneate or truncate; apex acuminate-deltoid; midrib grooved above, prominent underneath, lateral nerves 4-6 on each side, impressed above, slightly elevated and quite obsolete underneath, reticulate near the margin. Inflorescence axillary, after fruiting usually two in a fascicle; peduncles 1-1.25 mm. long, with 2 scaly, deltoid, prophylla; calyx cup-shaped, 2.5 mm. in diameter, sepals 4, deltoid, obtuse or round, 1 mm. long, sparsely ciliate, corolla of female flower erect, petals oval-obovate, 3 mm. long, 2 mm. wide; staminate slightly shorter than or subequal the petal, sterile anthers subcordate; pistil large, oblong-conical, 3-4 mm. long, stigma discoid. Drupe borne on a short pillose stalk, slightly less than 2 mm. long, usually two in an axillary pair, in specimen, ellipsoid-globose, 6-8 mm. long, 6-7 mm. wide; 2-pyrene, pyrene dorsally ventrally compressed, ovoid or suborbicular, dorsal surface palmately 8-10 striate-unicate, ventral side 5-striate, 5-6 mm. long, 4-5 mm. wide, 2½ mm. thick; wall thick, lignified.

Frutex 4 m. altus, glaber vel glaberrimus; Ramuli venustiores teretes, cortice cinereo-brunnescente, longitudinaliter aliquantulum ramosi; novelli paullisper pulverulento-papillose; hornotia subtereti, striato-subunicati, raro angulati. Folia usque in alterum et tertium annum in ramulis remanentia, interstitia 3-10 mm. longa dissita; stipulae minutae; saepe indistinctae; petiolus, brevis 3 mm. longus; lamina irigide coriacea, supra opaca et rugosa, vel interdum nitida, oblonga, ovata, vel subquadrangularia, 2.3-4.8 cm. longa, 1-2.5 cm. lata; margine incrassato, l.s., recurvato, utrinque 2-3 spinuloso-dentato, spino robusto, 1.5-3 mm. longo, basi rotundata, raro cuneata vel truncata; apice acuminato-deltoidico; costa media supra appressa, subtus prominente; nervis laterilibus utrinque 4-6, supra appressis, subtus obsolete, juxta marginem insensibiliter reticulatis. Inflorescentiae in foliorum axillis fasciculatae; pedunculus brevissimus, 1-1.25 mm. longus, prophyllis 2, supra medium insertis; calyx 2½ mm. diam.; sepala 1 mm. longa, incillata vel paulumellata, corolla floris masculi erecta, petalis obovatis, 3 mm. longis, 2 mm. latis; staminodia floris feminei petalo paululo breviora, antheris parvis, cordiformibus; ovarium mangnum, conicum, 3 mm. longum, stigmate discoidico. Drupe subsessilis, gemina ellipsoidea, 6-8 mm. longa, 5-7 mm. lata; 2-pyrenes, pyrenis dorso-ventre compressis, dorso palmato 8-10 stris-unicato, facie ventrali 5-striatis, 6-8 mm. longis, 4-5 mm. latis, 2½ mm. crassis, lingosis.

Mount Omei: Chu-tien, alt. 1800 m., in thickets, shrub 2 metres high, flowers greenish W. P. Fang, No. 16431, May 6, 1941; Hwa-yen-ting, alt. 1680 m., shrub 2 metres high, leaves coriaceous, shiny, W. P. Fang, No. 12897, August 3, 1938; Southwest of Mount Omei, Opleh-hsien, T. S. Chao, No. 604. (The spines of this specimen are less robust.)

• 全草藥用。根、枝、葉、果、實、皮、木、均入藥。根、枝、葉、果、實、皮、木、均入藥。
• (附正大堂) 藥用。根、枝、葉、果、實、皮、木、均入藥。
• (附正大堂) 藥用。根、枝、葉、果、實、皮、木、均入藥。

SZECHUAN: Nanchuan-hsien, Mt. Chiu-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. *weichii* 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 dipyrena* Wallich and *Ilex bioritensis* 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 ciliolom spines on each side. It differs from *Ilex dipyrena* Wallich in having small leaves, 2.8-4.8 cm. long, while the latter has 4.5-16 cm. long leaves with 6-7 spines on each side. It differs from *Ilex bioritensis* 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 6 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

冬青新種

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，二年與本年枝上發短毛，蒼狀，現縱溝，稍現稜角，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，嫩葉本之葉表面現皺紋，色常噴淡，稀有光澤，青褐色，背面暗淡，多皺紋，淡黃褐色；長橢圓形，卵形或亞菱形，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，每邊有四至六個側脈，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，密織花序，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，先端鈍尖或圓形，邊緣有稀疏之隱毛，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，柱頭鐘狀，核果橢圓狀球形，長六至八公厘，寬四至五公厘，果梗長約二公厘，有毛，核兩粒，背腹略扁，圓橢圓形，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級，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。

本種與糙刺冬青，單刺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，而糙刺冬青有多數隱毛狀棘刺，兩核冬青之葉甚大，每邊有六至七刺，單刺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. 枝之背面觀（放大三倍）；3. 枝之腹面觀（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

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 6 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. 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 950 m., in thickets, small tree 4 metres high, occasionally, *W. P. Fang*, No. 12579, July 21, 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. 135 & 149, May 8, 1939; same locality, on slopes, small tree 5 metres high, flowers yellow, *T. C. Lee*, No. 4439, 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. 15226, 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, young fruits green, *W. W. Ma*, Nos. 2762 & 2771, July 12, 1940; same locality, in woods, tree 7 metres high, young fruits green, *T. C. Lee*, No. 4710, 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 28, 1940, without precise locality, *T. H. Tu*, No. 357, in 1938; without precise locality, *C. W. Yao*, No. 3659, in 1938; without precise locality, *S. N. Hsu*, No. 678, in 1938.

Plate 164

Distribution: Hupei, Szechuan.

The large fasciculate fruits of this species resemble those of *H. 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 *H. cornuta* provides another difference to the cordate or subquadrangular lamina of *H. cornuta*.
Fig. 1, a fruiting branch (natural size); 2, a flowering branch (natural size); 3, a single male flower (enlarged 10 times); 4, a single view of a male flower (enlarged 10 times); 5, dorsal side of a pistil (enlarged 5 times); 6, ventral side of pistil (enlarged 5 times).

圖版 一百六十四

中 型 冬 青

冬 青 科

小喬木。大枝直立。較老之小枝葉形。葉披針形。葉葉標本之小枝深褐色。本年之枝具稀疏之短毛。葉老則光澤，呈深二公厘至三公厘，葉兩端三至七公厘，托葉小，三角形，漸尖，短至尖毛。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，基部卵狀長橢圓形或倒卵形，長六至十公分，寬二至四公分，邊緣略向基部微曲，具疏之短毛。葉尖銳或圓錐狀；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密生灰厚狀短毛外，其餘部份光滑，臟葉標本之葉片淡灰色，背面較淡，中肋上面扁平或微凹入，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。葉腋生小葉，小葉花常三花或一小枝，梗上被稀疏之短毛；苞片三角形，先端銳尖，表面光滑，邊緣具短毛，梗上小葉產生於梗之基部，具短毛；花梗長一公厘，小花梗長二公厘；花四裂，花瓣直徑六公厘，光澤無毛，花瓣與聯合部離短，裂片三角形，先端銳尖，邊緣具短毛，長半公厘，寬半公厘，花冠輪狀，花冠瓣卵狀橢圓形，長三公厘至三公厘半，寬一公厘，小蕊較花冠長，花藥卵形；不孕大蕊略呈球形；果長橢圓形，長中至十二公厘，花梗直徑八至十八公厘。臟葉標本之果深褐色，多皺紋，柱頭孔形，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，在中具縱脊二條，其兩邊各具較短之脊一二條，近紋質之端常漸變或相連成網狀，表面具溝，核側亦有脊溝；內果皮木質化或骨質甚硬。

此種產於藏州之溝谷間，洪雅等，屬雅砻，乾劍退，新開寺及通仙寺等處。三月開花，七月果可成熟。
此種分佈於雲南四川兩省。
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

Plate 165.

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 triate-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, suboblongate 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, 3 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, 1/3 mm. wide, slightly united at base; stamens subequal the petals in length or slightly longer than petal in staminate flower, anther oblong-ovate, staminate in female flower 1/3 times shorter than the pistil, sterile anther sagittate; pistil in female flower rather large, oblong-ovate, 2 mm. long, 1/3 mm. thick, stigma 4-lobed, coronate, sterile pistil of male flower globose, 0.75 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, lignescens.

MOUNT OMEI: Chia-dan-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. 7302, July 3, 1935; 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. 1006 & 1034, April 21, 1940; same locality, small tree 5 metres high, fruits light green, *T. C. 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-dau-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. 1296, 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. 3181, 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. 14315 & 14319, May 21, 1940; same locality, in forests, small tree 3 metres high, flowers yellow, *W. P. Fang*, No. 18339, April 18, 1942; Chu-tien, alt. 1800 m., in thickets, small tree 3 metres high, young fruits green, *C. L. Sun*, No. 438, 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. 18963, June 6, 1942; Hui-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-knail, alt. 1500 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. 18467, April 20, 1942; Chin-lao-tung, alt. 1000 m., in forests, small tree 5 metres high, *W. P. Fang*, Nos. 14669 & 14698, May 19, 1940. Ta-chang-sui, alt. 2300 m., *W. P. Fang*, No. 17193, July 5, 1946; northwest of Mount Omei, Hung-yeh-shien, 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. 3687 & 4112, July 11-18, 1939; southwest of Mount Omei, Oplen-hsien, Shaping, in forests, small tree 5 metres high, young fruits green, *C. L. Sun*, No. 6337, July 13, 1939; ? same locality, *C. L. Sun*, No. 900, 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 & 4381 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 gray, 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-yung. 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, an 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；小枝箭形，嫩枝有溝槽，本年之枝直徑二至三公厘半，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，背面有側溝；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，寬二至三公厘；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，小脈網在葉背明顯。大蕊花或略似總狀之密繖花序，小蕊花或繖狀花序，兩種花序皆無花梗，單生於葉腋，被篩紋之短絨毛；萼筒褐色，圓形或卵形，全緣，略有睫毛，長一至二公厘，寬二公厘；花瓣長二至三公厘，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；大蕊花之花萼筒形，小蕊花之花萼筒形，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；小蕊花之花冠輪狀，開花時直徑六公厘，大蕊花之花冠輪形，直徑三公厘，花瓣長橢圓形，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；小蕊花之小蕊花瓣略長或幾等於花瓣之長度，花瓣長橢圓形，大蕊花之不孕小蕊較長三分之一，花藥箭形，大蕊花之大蕊頭大，長橢圓形，長二公厘，直徑一公厘半，柱頭四裂，花冠形；小蕊花之不孕大蕊頭形，直徑百分之七十五公厘。核果球形或橢圓形，紅色，標本之果殼褐色，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坪坪，羅祖岩，猴子坡，地藏花，息心所，初殿，華嚴頂，九十九倒樹，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鐵邊之沙坪亦產之。

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具為特別，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

Plate 166
ILEX CHENIANA Hu Shiu-ying.

Aquifoliaceae.

Ilex Cheniana Hu Shiu-ying, sp. nov.

Frutex, 4 m. altus; ramuli recti, sparsi lenticulis nigris, vetustiores subteretes coriice longitudinaliter striata, subangulati, i. s. brunneo-nigrescentes vel ebereascenti, biennes 3-4 mm. crassi; floribus tui glabri, 2.5-3 cm. crassi, i. s. brunneocutes angulati, graciles. Folia usque alteram in partem in ramulis repaenanti, interstitiis. 6-20 mm. longis dissita; stipulae minutae triangulares, callosae, persistentes sed postea obliteratae; petiolatus, 7-12 mm. longus, glaberrimus, supra acute sulcatus, subtus teretis; lamina coriacea, saepius crassa vel rigida, supra inclinata, 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 8-13 mm. longo, obtuso, margine fere plano vel ad basim 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 laxe reticulatis, epidermidis subtus saepius plicato-rugulosa. Inflorescentiae e ligno hornotino nascentes, mascululae pseudo-paniculatae, femineae pseudoracemum brevem densum sessilem formantes, pulvereo-puberulae, singulae mascululae plerumque semel dichotomae 3-flores, breviter vel brevissime pedunculatae, femineae 1-florae (ex fr.); perulis inflorescentem fulcrantibus, nudo oculo manifestis mascululis, subscariosis, oblongo-ovalibus, rotundatis, margine tota alluantium 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 insertis, deltoideis, pediculus 1-2 mm. longus, in femineis (sub fructibus) 5-6 mm. longus, prophyllis basi insertis. Flores 4-meri; calyx explanato-patellus vel subcapuliformis; 2 mm. diam. glaber, lobis tubo subaequalis, deltoideis, apice obtusus vel acutus, 1 mm. longus, 1.5 mm. latus. Stamina fl. sub anthesi petali, subaequilonga, anthera ellipsoidea; Pistillodium fl. mascululorum subglobosum, apice 4-sulcatum, 0.75 mm. diam. Drupa globosa, stigmatate prominente, 4-loba coronata, i. s. brunnea, hinc inde impressa macularum laevium, 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 year's 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, i. 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, deltoide; pedicel 1-2 mm. long, after fruiting in pistillate 3-6 mm. long with the prophyllum inserted near the base; flower 4-merous; calyx disk-like or cup-shaped, 2 mm. in diameter, glabrous, lobes deltoide, apex obtuse or acute, 1 mm. long; corolla rotate, petal oblong-elliptic, slightly vaulted at base, 3 mm. long, 1.6 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 subtrigona, 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: Opieh-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, 1938; 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, 1938; 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，背面著生；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，腹面明顯，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，開花時葉鱗宿存，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，鱗葉標本之果褐色，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-brunescens, 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 f. 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 basin curvata, iuxta marginem reticulata, epidermide subtus saepius plicato-rugulosa. Inflorescentiae e ligno altero orientes, pseudoracemum brevem densum sellitem formantes, puberulae et glabrescentes, rachis 6-20 mm. longa, singulae uniflorae vel fl. masculinae 2-3-florae; pedunculus in fl. masculinis 2 mm. longus, pedicellis 4-5 mm. longis, in fructibus 4-3 mm. longis, 2-prophyllis sub-basi insertae, deltoideae; fl. 4-meri; calyx planus vel patelliformis, 2.5-3 mm. diam., glaber, lobulus et fistula subaequilongi, 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; atheris sterilibus apice instruis, sagittatis; ovarium ovoideum, stigma prominens, crassius, obsolete 4-lobulis coronatum; gynoecium sterile fl. masc. subglobosum, minutum. Drupa globosa, stigma discoidem applanatum prominens, 4-lobulis-coronatum, i. s. brunnea vel subatta, 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, ligna.

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, f. 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 flowers; peduncles in male flowers 2 mm. long, pedicels 4-5 mm. long, in fruit 4-3 mm. long, prophylla 2, sub-basi inserted, deltoid; flower 4-merous; calyx applanate or patelliform, 2.5-3 mm. (across) glabrous, lobes and tube subequal in length, rounded, deltoid, 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 subglobose-trigonous, striate sulcate, 2.5 mm. long, 1.75-2 mm. wide, lignified.

MOUNT OMEI: Kuan-hsiu-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. 3788, 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 lathyrate, 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.M. Hsu*, 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. 16823, 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-knai, alt. 1600 m., in woods, tree 10 metres high, flowers yellowish-green, *C.L. Sun*, No. 2764, May 25, 1940; Chiu-tien, alt. 1850 m., *H.G. Chow*, No. 7728, July 1, 1939; same locality, small tree 7 metres high, young fruits green, *C.L. Sun*, No. 2224, May 27, 1940; Hua-yeu-ting, alt. 1950 m., small tree 8 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. 18954, May 26, 1942; northwest of Mount Omei, Hang-ya-lshen, 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. Chihlu 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 pseudotermose inflorescence resembles that of *Ilex latifolia*. Its rigid and sometimes spinose leaves resemble those of *Ilex insignis*. Its glabrous branchlets resemble those of *Ilex chinensis*. It differs from *I. latifolia* in having smaller and narrower leaves. It differs from *I. insignis* in having separated pyrenes. It differs from *I. chinensis* in having larger leaves with spinose teeth.

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；較老之枝著形，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，相距四分之一至五公分；托葉甚小，質實，多不易辨別；葉柄長十至二十公厘，光滑無毛，上面現溝槽，下面則現褶皺，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，寬二至五公分半，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，邊緣向內捲褶，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，花枝初被短毛或長時漸變光滑，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；小蕊花之小蕊較花筒略短，花藥卵形，大蕊花之不孕小蕊僅花筒之半，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；胎座木本之果黑褐色，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，寬一又四分之一公厘至二公厘，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 CORALINA Franchet.

Aquifoliaceae.

Ilex coralina Franchet in Bull. Soc. Bot. France, XXXIII (1886), 482; 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. Sinicæ, VII, Licferung 3 (1933), 687.

Ilex Dunniana Leveillé 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 fuscescent, absoletely longitudinally subpicate angular; this year's growth 1-2 mm. thick. Leaves 7-20 mm. long, 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, 4.6-11 cm. long, 1.8-4 cm. wide; tender or adult quite coriaceous, very glabrous; base rounded to obtuse; apex acuminate, acumen 14 mm. long, mucronulate; margin, in specimen, narrowly recurvate, remotely serrulate to dense undulate-subdentifoliate-serrate, tooth with nigrescent apiculate; midrib slightly insculptured above, expressed and prominent below, lateral nerves 7-10 on each side, angle 40°-65°, plane, obsolete above, prominent underneath, reticulate near margin. Inflorescence axillary, fasciculate, fascicle with 8-10 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 6 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, 2-25 mm. long, shorter in female flower, 1.5-1.7 mm. wide; stamens of male $\frac{1}{2}$ times longer than petals, filaments terete, anther ellipsoid; stamnode of female flower very short, $\frac{1}{4}$ 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, absoletely lobed, coronate, in specimen, nigrescent, 3-4 mm. in diameter, in vivo, coralline-red; pyrenes 4, subtrigonous, 2.8 mm. long, 1.5 mm. dorsal width; dorsal 3-riolate-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 6 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 6 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. 6768, July 8, 1942; Ching-yin-ko, alt. 980 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. 2053, May 18, 1940; Fang-fang-dien, *C. L. Chow*, No. 7077, October 15, 1942; Niu-hsin-ssu, alt. 9600 m., small tree 6 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. 15801, October 7, 1940; same locality, small tree 4 metres high, fruits red, *W. P. Fang*, Nos. 15278 & 15363, November 18, 1940; same locality, November 18, 1940; same locality, shrub 8 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. 15244, 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; Phe-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; Chia-lao-tung, alt. 1800 m., shrub 5 metres high, young fruits green, ovoid, *W. P. Fang*, No. 16939, June 13, 1941; same locality, shrub 6 metres high, fruits red, *C. L. Chow*, No. 5457, November 23, 1941; Hua-yen-ting, alt. 1980 m., shrub 3 metres high, fruits red, globose, *W. P. Fang*, No. 15745, December 20, 1940; same locality, shrub 3 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, 1936.

Distribution: Hupeh, 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 Shin-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，較老之部著形，樹皮滿被縱裂或皮孔；嫩葉極本之幼枝暗紫或淡紫褐色以至銀黑色，具縱綫角，本年之枝直徑一至二公厘。葉互生，有距七至二十公厘；托葉極小或模糊；葉柄頗短，長四至八公厘，斜達一公分者，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，寬一公分至四公分，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，嫩葉極本之邊緣微向背面反捲，具稀疏之小鋸齒以至於波狀以圓齒形之齒，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四十五至五十五度，平直，在葉表面不顯，在背面易見，近邊緣處則接合成網狀。叢生之密繖花序腋生，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，先端圓鈍，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半，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，花藥筒形；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，嫩葉極本之果黑色，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，大鐵寺，石音溝，清音閣，牛心寺，白龍寺，洪椿坪，寶掌峯，會佛寺，蛇倒退，獼猴坡，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

ILEX SZECHWANENSIS Loesener.

Aquifoliaceae.

Ilex szechwanensis Loesener in Nov. Act. Leop.-Carol. LXXVIII (1901), 347; in Sargent, Pl. Wilson, 1 (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 manifestly 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 3-7 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; stamens 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: Opien-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. 4436, 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, 1936. (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，較老部份略現拐角，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，背面其透明之腺體及絨毛，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，其淺而且密之鋸齒；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。花單生或呈密繖花序，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；梗上齒鱗形，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，散枝小蕊花之梗長二至五公厘，大蕊花之梗長七至八公厘，近花托處漸粗大，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；小蕊花四至六枚，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，頂有之柱頭乳頭狀，也凸出，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，具三縱紋，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，其區別為四川各青之枝具絨毛，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，其花瓣之一部已摺開(放大三倍)；4. 小蕊花(放大三倍)；5. 小蕊花之花冠(放大三倍)。

SOUTHWEST OF MOUNT OMEI: Qian-hsien, Shuang-shan, C. N. No. 4738, August 10, 1947; same locality, same date. (The description of the female flower is based upon the specimen 2, Y. H.) C. N. No. 4738, August 1, 1938; same locality. T. S. Chan, No. 387, without precise date; south of Mount Omei, Hung-shan, W. W. Chan, C. N. No. 4738, July 18, 1938; same locality. C. N. No. 4706, June 30, 1938. (Both of these specimens are in male flowers.)

Szechuan, Chungking, Chia-shan-shan, in bamboo thickets, low shrub up to 18 metres high. Y. H. No. 3064, August, 1947.

Distribution: Hubei, Szechuan. This species is closely related with *Illex villosa* Hance, var. *reticulata* (Chun) Loesener of South China from which it differs in having apic-lobed (compared to be cuneate) fruits, mammillate and prostrate stems, 4-merous flowers and pubescent branches. The latter *Illex villosa* var. *reticulata* Loesener fruits 4-merous flowers with epiphanic stems, and glabrous branches. In *Illex villosa* var. *reticulata* Loesener a flowering branch with male inflorescence (natural size), a female flower with petals partially removed (enlarged 3 times), a single male flowering branch (enlarged 3 times), a corolla of a male flower (enlarged 3 times).



169. *Ilex szechuanensis* Loesener

Plate 170.

ILEX WILSONII Loesener.

Aquifoliaceae.

Ilex Wilsonii Loesener in Nov. Act. Acad. Ctes. Leop.-Carol. LXXVIII (1901), 237; in Sargent, Pl. Wilson. I (1911), 80.-Handel-Mazetti, Symb. Sinicae, VII, Lieferung 3 (1933), 659.

Small tree or shrub 10 metres high; bark cinerous, covered with manifestly gibbous lenticles 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, 0.6 mm. long; petioles 5-10 mm. long, slightly impressed or sulcate above, with decurrent cupped 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 6-18 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, 4.8 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 pistil 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. fustolus, 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；較老之枝葉形，本年之枝具縱槽，直徑一公厘半至二公厘，光滑無毛。葉生於本年之枝上，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，上面較糊，下面較糊以至頭然，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；柄上苞片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，幅輪狀，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。果球形，宿存之柱頭鈍形，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，湖北，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

Plate 171.

LEX MACROCARPA Oliver.

Aquifoliaceae.

Lex macrocarpa Oliver in Hooker Icon. Pl. XVIII (1886), t. 1767; Loesener in Nov. Act. Acad. Caes. Leop.-Carol. LXXVIII (1891), 469; Rehder in Journ. Arn. Arb. XIV (1933), 242; Camber in Notes Roy. Bot. Gard. Edinb. XVIII (1933), 64; Handel-Mazzetti, Symb. Sinicae, VII, Lieferung 3 (1933), 669; Merrill in Journ. Arn. Arb. XIX (1936), 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 excrescence. Leaves deciduous, on elongated branchlets 10-60 mm. apart, 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 membranaceous, opaque above, glabrous, oval or ovate or broadly elliptic, 6-14 cm. long, 4-5.5 cm. wide; base subobtusely or acute, rarely rounded, decurrent; apex abruptly narrow acuminate, rarely acute or obtuse, acumens 6-8 cm. long; margin i.s. subplane, densely and obsoletely 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 reticulate. Inflorescence usually fasciculated on abbreviated branchlets in male, female solitary, axillary, on elongated or shortened branchlets; male unflowered or 2-6 flowers on very short peduncle, female unflowered; peduncle in multiflower cluster 6 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 obsolete and basal in male, often obsolete; flower 5-7-merous, fragrant, large, white; calyx patelliform, 2.5-4.5 mm. after fruiting 6 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, 0.6 mm. long, 1 mm. thick. Drupe large, globose, stigma very prominent, obtuse, pyramidal-subcolumnar, striate, up to 2 mm. long, coronate, i.s. brownish, obsoletely rugose, estriate, 10 mm. in diameter, 6-7 pyrenes, pyrene laterally cinerised, 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. Chou*, No. 5519, April 10, 1942; Pao-ning-ssu, small tree 5 metres high, pistillate flowers white, *W. P. Fang*, No. 14185, 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-lung-miao, small tree 3 metres high, young fruits green, *W. P. Fang*, No. 17831, May 14, 1941; same locality, *W. P. Fang*, No. 17470, August 8, 1942; Pao-kno-ssu, small tree 5 metres high, *T. C. Lee*, No. 5388, August 11, 1940; same locality, in forests, small tree 3 metres high, young fruits green, globose, *W. P. Fang*, Nos. 18824 & 18826, May to June, 1942; Hwang-wan, small tree 7 metres high, pistillate flowers whitish-green, *C. L. Chou*, Nos. 5832 & 5835, 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. Chou*, No. 5867, April 8, 1942; same locality, *C. L. Chou*, No. 5892, June 27, 1939; Tai-ssu, alt. 800 m., in thickets, small tree 3 metres high, *W. P. Fang*, No. 12576, June 27, 1939; Tai-ssu, alt. 1103 m., tree 10 metres high, *S. S. Chien*, No. 5476, May 4, 1936; near and above Nin-hsin-ssu, small tree 3 metres high, staminate flowers white, *C. L. Chou*, Nos. 1898 & 2067, May 16, 1940; same locality, small tree 8 metres high, flowers white, *C. L. Chou*, No. 1989, May 15, 1940; Hung-chun-ping, alt. 1147 m., *H. C. Chou*, Nos. 7020, 7311, 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 5 metres high, *T. C. Lee*, No. 3137, August 1, 1940; Taping, alt. 1400 m., small tree 3 metres high, flowers greenish white, *W. P. Fang*, No. 16665, May 20, 1941; Pao-chung-feng, alt. 1400 m., small tree 6 metres high, young fruits greenish, globose, *W. P. Fang*, No. 17075, June 23, 1941; San-mo-ho, alt. 1600 m., *W. P. Fang*, No. 17251, July 10, 1941; Lien-hua-shih, small tree 3 metres high, flowers greenish-white, *W. P. Fang*, No. 18767, May 18, 1942; southwest of Mount Omei, Opien-hsien, *S. N. Hsu*, No. 30 in 1937; without precise locality, *W. C. Cheng*, No. 6951, June 14, 1933; without precise locality, *H. C. Chou*, No. 9728, in 1938.

SZECHUAN: Chien-yang-hsien, *S. S. Chien*, No. 5249 & 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. 12224, 12226 & 13385, April 7, 1939; Sha-ho-pu, *C. Y. Wang*, No. 7293, June 6, 1944; Tsing-yang-kon, *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, Kwetchow, Yunnan, Kwangtung; Kwangsi; Indo-China.

This species is deciduous. Its large fruit, brown at maturity, is very peculiar. It is closely related to *Lex Reccusae* Hu Shih-ying. It differs from the latter in having glabrous branchlets and leaves. A normal *Lex macrocarpa* Oliver has a fruit-stalk subequal 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 Shih-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. 1973, 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，多楞頂且有疣狀突起。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，易脫落；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，側脈每邊八至十脈，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叢集於短枝上，大蕊花亦有單生於長枝之葉腋者；小蕊花單生或二三至五朵集成聚繖花序，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；花冠細筒狀，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，寬又十分之三公厘至三公厘；小蕊之花瓣等長或略長於花瓣，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；核六粒，參扁，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，大藏寺，洪清坪，猴王坡，大坪，寶寧峯，三壩河及蓮花石等處。峨眉山西南峨邊縣亦產之。

本種特點與大果冬青，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.

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, prophylla 1-2, medium; pedicels of female flowers 6-8 mm. long, gradually enlarging toward the apex, prophylla 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 $\frac{1}{2}$ 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 (菁春島), 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 (清羊宮), 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 REVESSAE H. Shing-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，兩年之枝略現拐角，直徑二至三公厘半，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，突銳；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；葉部圓形或鈍形；先端銳尖或漸尖，漸尖之處長四至十公厘；邊緣具圓齒，齒尖具角形黑點；中肋上面扁平，頂面凸起，每邊有側脈八至十條，脈網上面較細，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；小蕊花二花成枝，為藥筒花序，大蕊花單一，小蕊花之總花梗長一至三公厘。苞片甚小，梗生小苞兩片，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；花萼綠色，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，輪輪狀，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，花瓣較裂片短四分之三，花瓣卵狀長橢圓形，長二公厘半至三公厘，寬二公厘，小蕊花四至七亦着生花冠筒喉部，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，成熟後花開之前，大蕊花之不孕小蕊七至九枚，較花冠短，全白色，花藥橢圓形；子房綠色多毛，絲形。直徑五分之二至三分之一至三公厘，柱頭甚大，略呈柱狀，乳頭狀短形。小蕊花之不孕大蕊球形，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；未嘗堅硬。

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，八至八月果可成熟。本種與大果冬青親緣最近，與前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(放大五倍)；6. 小蕊花(放大七倍)；7. 果實(放大二倍)。

Distribution: Hubei, Szechuan, Yunnan, etc. This species is closely related to *W. waxes* Christ. from which it differs in having... (The following text is a detailed botanical description and distribution information, including references to specimens and collection dates, which is partially obscured and difficult to transcribe accurately due to the image quality and orientation. It includes details about the type of fruit, leaf characteristics, and specific collection records from various locations in China.)

我 國 植 物 圖 志



172. *Ilex Racevesae* S. Y. Hu

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 olivéo-brunnescente, striato-sulcato et lenticellis albis prominentibus obtecto. Rami vntustiores elongati, subrecti; ramuli triennes usque ad 3 mm. crassi; hornotini glabri, olivéi vel fusci, 2-2.8 mm. crassi; juniores valde rugosi et gibberos, 8-16 mm. longi. Folia decidua, in ramulis elongatis intersitis 8-20 mm. longis dissita, in ramulis, parvis, floribus fasciculatis congesta; stipulae minutae, obliteratae vel callosae; petiolus 10-17 mm. longus, glabrus, surpa sulcatus utrimque laminis 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 5-8, nonnumquam 12 mm. longa; margine plana, serrata et aliquando dupliciter serrata; angulo 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 anastomatici. 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; stamine fl. femineae petalis $\frac{1}{2}$ breviora, antheris cordiformis; ovarium ovoideum, 6-loculis, locus 1-ovulatus; effectum 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, l. 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, anastomatic near margin. Inflorescence solitary on elongated new branches or on all sides at its base, fasciculate 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, staminate 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, obsoletely 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, 1936; same locality, small tree 8 metres high, fruits red, *C. W. Yao*, No. 2803, August 20, 1936; same locality, small tree 10 metres high, *C. W. Yao*, No. 4720 (type of female flower), July 29, 1936; 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. 2706, 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. 271A, June 9, 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.

Ha Shu-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

峨眉冬青

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，具溝，且有白色顯著之皮孔；較老之長枝着形，三年之枝直徑三公厘，本年之枝光滑無毛，直徑二至三公厘半，青色或灰褐色，短枝甚粗糙，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，形跡隱沒或硬化；葉柄長十至十七公厘，光滑無毛，脈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，脈葉標本葉之表面青色，甚光滑，背面較淡，中肋葉脈時或全而被短絨毛；基部圓形，鈍形或稀圓楔形；先端漸尖形，漸尖之尖端長五至八公厘，稀達十二公厘；邊緣平而具單鋸齒或雙鋸齒；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；花冠輪幅狀，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，各核六粒；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溝紋，木質堅硬。

此種產於峨眉之沙坪，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. 着花之枝（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（放大五十倍）。



173. *Ilex opienensis* S. Y. Hu

ABIES DELAVAYI Franchet.

Abietaceae.

Abies Delavayi Franchet in Journ. de Bot. XIII (1899), 255. Masters in Journ. Linn. Soc. Bot. XXVI (1902), 557; XXXVII (1906), 422; in Gard. Chron. ser. 3, XXXIX (1906), 212, fig. 82. Beissner, 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.- Chnn, 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), 26, fig. 28.- Wilson in Journ. Arn. Arb. VII (1926), 65.- Handel-Marzett, 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), 558; XXXVII (1906), 421; in Gard. Chron. ser. 3, XXXIII (1903), 194.- Mottet in Rev. Hort. (1904), 130.- Beissner, Handb. Nadelholz. ed. 2 (1909), 203.- Patschke in Engler, Bot. Jahrb. XLVIII (1913), 649.

Abies Fergensis 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 Fabri 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 2.6 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, cylindrical-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, 3.5-5.5 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 1887 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，長一分至一分二公厘，具樹脂，鱗片多數，卵形或鈍形，革質，微被絨毛，宿存於小枝之基部。葉密生於側枝上或成螺旋形，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，長一至一分半，寬二公厘，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頂花序，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頂花序，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，直徑三分半至五公分半，基部稍大，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留球果之輪宿存於枝上；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所山之貴伯油杉，後後經詳細攷證，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）。



174. *Abies Delavayi* Franchet

KETELEERIA DAVIDIANA (Bertrand) Beissner.

Abietaceae.

Keteleeria Davidiana (Bertrand) Beissner, *Handb. Nadelholz.* (1891), 424, fig. 117.- Van Tieghem in *Bull. Soc. Bot. France*, XXXVIII (1891), 412.- Pritzel in *Engler, Bot. Jahrb.* XXIX (1900), 217.- Masters in *Journ. Linn. Soc. Bot.* XXVI (1902), 654; XXXVII (1906), 421; in *Gard. Chron. ser. 3.* XXXIII (1903), 48, fig. 37, 38; in *Journ. Bot.* XL1 (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.- Chun, *Chin. Econ. Trees* (1921), 24, pl. 8.- Rehder in *Bailey, Cult. Evergreens*, (1923), 247, fig. 64.- Silva Tarouca et Schneider, *Uns. Freiland-Nadelholz.* 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 I* (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), 56.

Abies sacra David, *Journ. de Trols. Voy.* II (1876), 29 (nomen nudum).- Franchet in *Nouv. Arch. Mus. Paris*, ser. 2, VII (1884), 100, t. 14 (Pl. David. I, 290, 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), 93, t. 13 (Pl. David. I, 283, t. 13); in *Journ. de Bot.* XIII (1893), 260.- Masters in *Gard. Chron. ser. 3*, I (1887), 481.

Keteleeria sacra Beissner, *Handb. Nadelholz.* (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 mitchellensis Franchet in *Journ. de Bot.* XIII (1893), 265.- Pritzel in *Engler, Bot. Jahrb.* XXIX (1900), 213.- Masters in *Journ. Linn. Soc. Bot.* XXVI (1902), 648; 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 (Pl. Mont. Formos.).

Keteleeria Equivalii 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 8-10 flowers, on a short, scaly peduncle, anthers numerous, each with 2 pollen sacs; pistillate flowers in erect, cylindrical catkins, terminal on spur-like branchlets, with numerous scales, each with 2 ovules. Cones erect, ripening in one year, cylindrical-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, inclined 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, Opieh-gien, Lau-mu-ping, tree 25 metres high, bark dark grey, fissured, cones green before maturity, *W. C. Cheng*, Nos. 6384, 6342 & 6487, July 16, 1936.

SZECHUAN: northeastern Szechuan, without precise locality, *K. L. Chu*, No. 2169, in 1936.

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

This species was discovered by Pere David in 1869 at Lung-an-tu, 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，覆生於小枝之先端，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羅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

PSEUDOTSUGA SINENSIS Dode.

Abietaceae.

Pseudotsuga sinensis Dode in Bull. Soc. Dendrol. France, (1912), 58. fig.; in Mitt. Deutsch. Dendr. Ges. XXI (1912), 397. Craib in Notes Roy. Bot. Gard. Edinb., XI (1919), 189-190, fig. 161. Chun, Chin. Econ. Trees, (1921), 23. Rehder in Bailey, Cult. Evergreens, (1923), 265; 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, 236.

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, 2.6-3 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 cylindric, 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, 6-8 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 (越嶲縣), Lau-mn-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：希杉

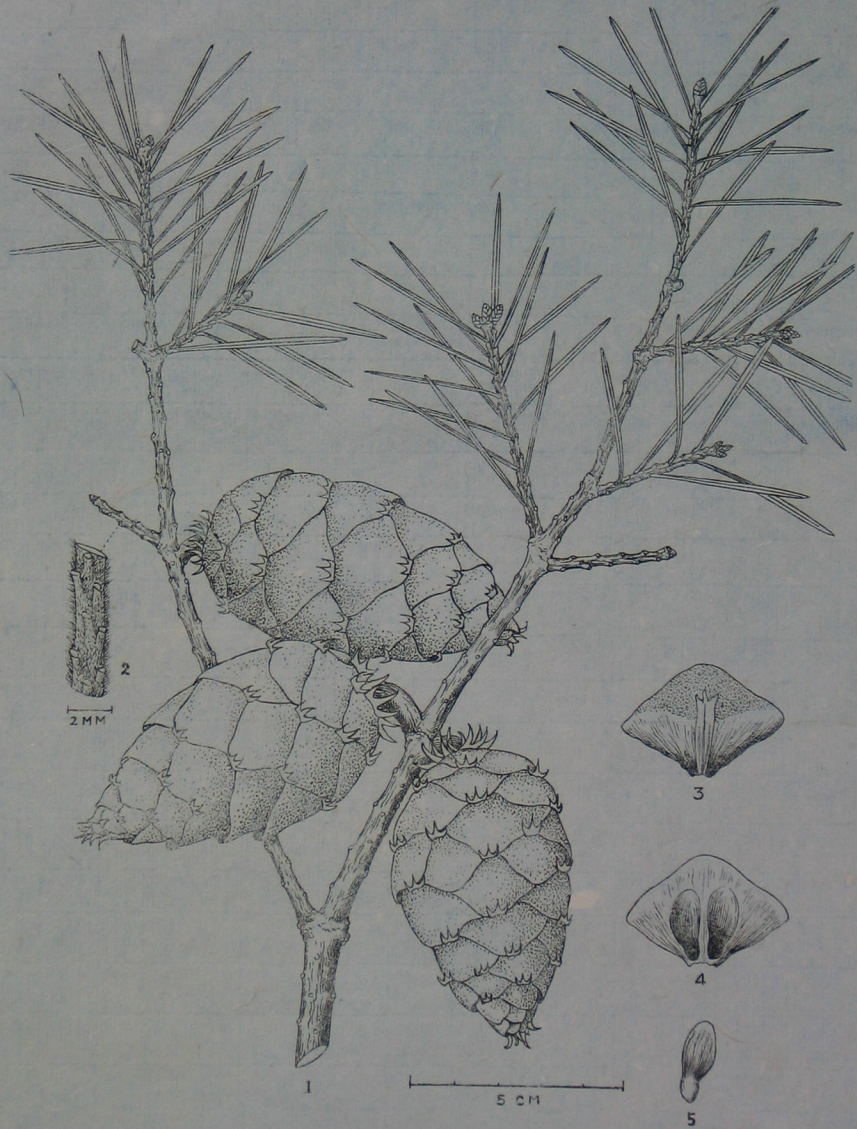
常綠喬木高四十公尺，樹冠塔形；樹皮灰色並現縱裂；枝輪生，小枝常成圓筒形，當年生之枝褐色或黃色，被絨毛並具葉，多年生之枝灰色或深灰色，疏被絨毛，圓形之皮孔極顯著，但不具葉。冬芽頂生，紡錘形，先端尖銳，無樹脂，鱗片銳尖或漸尖，邊緣具纖毛，多數，排列成覆瓦狀。葉着生幼嫩枝上成螺旋狀，線形長二公分半至三公分，先端鈍形並現凹缺，基部窄小，全緣，表面深綠色並具凹形之中肋，背面綠色並具凸出之中肋，中肋之兩側各具一氣孔帶，橫切而驗之僅具一維管束。花單性，大小蕊花同株，小蕊花螺旋形排列成圓筒形之花序，具短花梗，着生於葉腋，具多數圓球形之花藥，着生於短梗上，花藥上具距形之藥隔；大蕊花生於枝頂或枝上端之葉腋，具多數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崙縣境之老木坪，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青海之高山森林中。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), 558; XXVII (1906), 321. — Bleaner, Handb. Nadelholz, ed. 2, (1909), 82. — Patschke in Engler, Bot. Jahrb. XLVIII (1913), 639. — Rehder & Wilson in Sargent, Fl. Wilson. II (1914), 27. — Bean, Trees & Shrubs, Hard. Brit. Isles, 11 (1914), 606. — Downie in Notes Roy. Bot. Gard. Edinb., XIV (1923), 18, fig. 194, 5. — Chun, Chin. Icon. Trees, (1921), 22, fig. 7. — Rehder in Bailey, Cult. Evergreens, (1923), 206. — Silva Tarouca & Schneider, Uns. Freländ-Nadelholz, ed. 2 (1923), 38, 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 (1876), 343, nomen nudum.

Abies Tsuga (non Stebold et Zuccarini) Franchet in Nouv. Arch. Mus. Paris. ser. 2, VII (1864), 91 (Pl. David. I, 287).

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), 269. — Bois in Journ. Soc. Hort. France, ser. 4, I (1900), 230.

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

Tsuga Sieboldii (non Carriere) Pritzl in Engler Bot. Jahrb. XXIX (1900), 217. — Masters in Journ. Linn. Soc. Bot. XXVI (1902), 558; XXXVII (1906), 421; in Journ. Bot. XII (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), 569.

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 (1908), 194; Journ. Coll. Sci. Tokyo, XXV, art. 19, (1908), 222, fig. 12 (Fl. Ment. 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 (1918), 206. — Kanehira, Formos. Trees, (1917) 617.

Tsuga patens Downie in Notes Roy. Bot. Gard. Edinb., XIV (1923), 18, fig. 194, 6.

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

Tsuga Calcareae 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. Fortats. (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., *B. N. Hsu*, without number, in 1938: southwest of Mount Omei, Opien-hsien, *W. C. Cheng*, Nos. 6457 & 6560, in 1936.

SIKANG: Pao-hsing-hsien, *K. L. Chiu*, Nos. 2551 & 4122, in 1936.

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. Fang*.

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，具顯著之葉痕。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，著生於短果梗上，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，鱗片亞圓形，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。

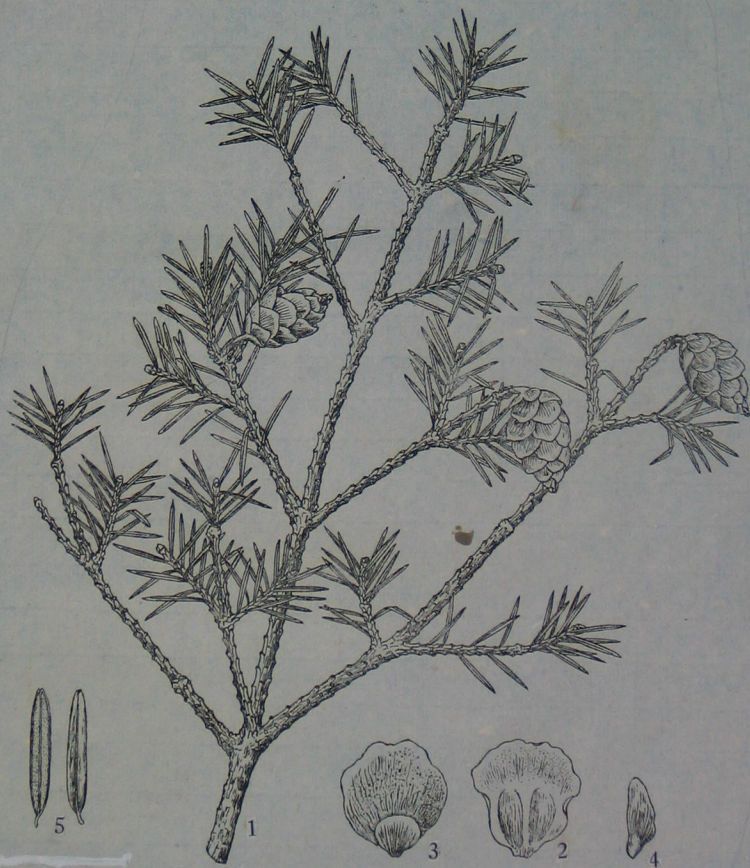
此種產於峨眉山之洗象池及峨眉山西南之峨邊縣。

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痕，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）。

五-15



177. *Tsuga chinensis* (Franchet) Pritzl

TSUGA YUNNANENSIS (Franchet) Masters.

Abietaceae.

Tsuga yunnanensis (Franchet) Masters in Journ. Linn. Soc. Bot. XXVI (1902), 556. Beissner, Handb. Nadelholz. ed. 2, (1909), 83. Patschke in Engler, Bot. Jahrb. XLVIII (1913), 639. 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. Bois 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-heien, 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 8 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

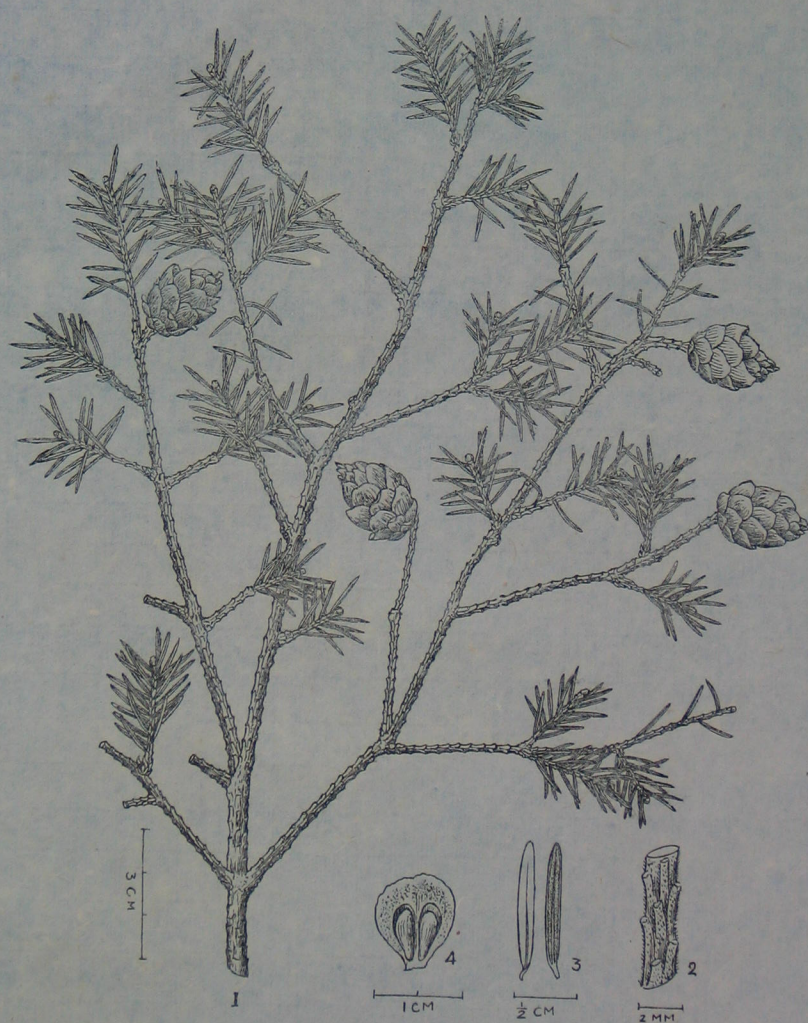
常綠喬木高十五公尺，稀達四十公尺，樹冠塔形，樹皮褐灰色或深灰色，縱裂成薄片。枝粗壯而密集，直斜向或半斜向伸展；小枝圓筒形，當年生者纖細，紅褐色或紅灰色，具細剛毛，多年生之枝褐灰色或深灰色，葉薄微顯著，被宿存之絨毛。葉螺旋形生長，常扭折成兩行，稀向上直生，線形，長八至二十公厘，寬二公厘，先端圓形或鈍形，邊緣全緣或近其先端部分微具細密齒，表面深綠色有光澤並具凹形之中肋，背面之中肋凸出，並於其側各具白色之氣孔帶。球果無柄，頂生於小枝上，卵圓形或圓錐狀卵圓形，長十五至二十八公厘，直徑八至十二公厘；鱗片亞圓形，圓形長或方卵形，先端向外捲折；種子及其長圓形之翅共長一公分。

此種產於峨眉之九老洞及峨眉山西南峨邊縣之關井溪，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(放大三倍)。



178. *Tsuga yunnanensis* (Franchet) Mastars.

十 Plate 179. — 圖

PINUS YUNNANENSIS Franchet.

Abletaceae.

Pinus yunnanensis Franchet in Journ. de Bot. XIII (1899), 283.—Masters in Journ. Linn. Soc. Bot. XXVI (1902), 563; XXXVII (1906), 418.—Gardener's Chronicle, II (1905), 8g. 86.—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), 16.—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, 10-18 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

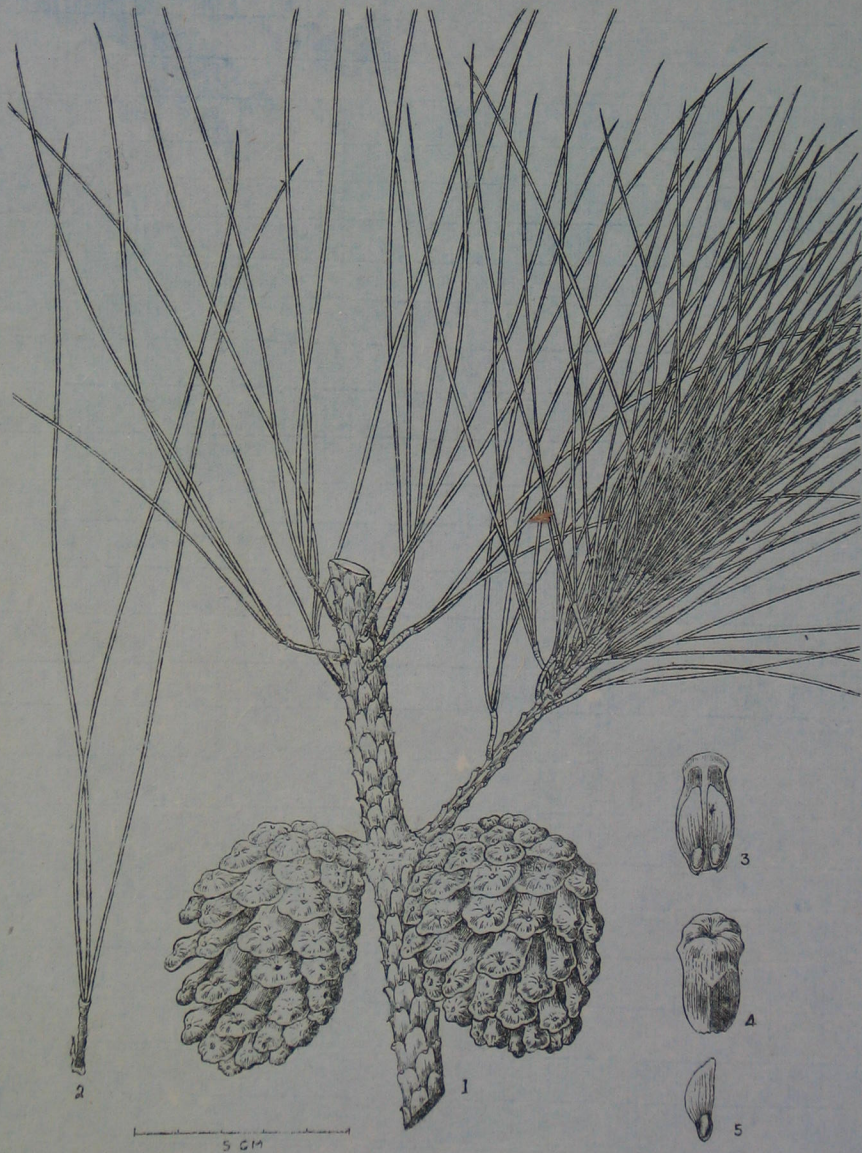
常綠喬木，高十公尺，稀達二十公尺；莖上部之樹皮紅色或紫紅色，或薄片脫落，莖基部之樹皮褐色或深褐色，深縱裂成不規則之厚條；小枝粗壯，圓筒形，紅褐色，粗糙，當年及二年生之枝具宿存之苞片。冬芽圓錐狀卵圓形，紅褐色，鱗片披針形，先端漸尖，邊緣膜質而白色，透明或水洗樣形。葉針形，具細微鋸齒，長十二至二十公分，稀達二十五公分，常三枚為一簇；葉鞘管狀而宿存，長十至十五公厘，初為黃灰色，繼變深褐色，葉基部之苞片卵狀披針形，先端漸尖，白色或淡黃色，薄如膜質，邊緣水洗樣形。花不詳。球果圓錐狀卵圓形，長七至九公分，初為淡黃色，繼變為咖啡褐色，鱗片長圓形，先端鈍形或圓形，先端之下部則變為窄形，鱗片之頂端有光澤，扁平或微凸起成脊狀，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眉縣老木坪。
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）親緣最近，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）。

峨眉植物圖志



179. *Pinus yunnanensis* Franchet

十八 Plate 180. 圖

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 (1875), 109 (Fl. Shangh., 57).— Beissner in *Nouv. Giorn. Bot. Ital. n. ser. IV* (1897), 168.— Masters in *Journ. Linn. Soc. Bot.* XXVI (1902), 651; XXXVII (1908), 416.— Patschke in *Engler, Bot. Jahrb.* XLVIII (1912), 658.— Shaw in *Sargent, Pl. Wilson*, I (1911), 1; II (1914), 14; *Genus Pinus* (1914), 52, 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), 45; 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* I (1929), 16.— W. C. Cheng in *Contrib. Biol. Lab. Sci. Soc. China*, VI (1930), 12.

Pinus sinensis Lambert, *Descrip. Genus Pinus*, ed. Minor, I (1833), 47, t. 29.— Bentham, *Fl. Hongk.* (1861), 337.

Pinus canaliculata Miquel in *Journ. Bot. Neerland*, I (1861), 66.

Pinus Cavaleriei Leveillé in *Fedde, Rep. Spéc. 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, rounded by decurrent leaf-bases. Winter-buds cylindrical, 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 cylindrical, 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-chnang, *H. C. Chow*, No. 8489, October 1933; 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 10, 1940; Pao-kuo-ssu, tree 20 metres high, *W. P. Fang*, No. 13925, March 19, 1940; same locality, *C. Y. Yao*, No. 5169, in 1936.

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* Carrière 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.

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，檜樹，
台灣赤松。

松 科

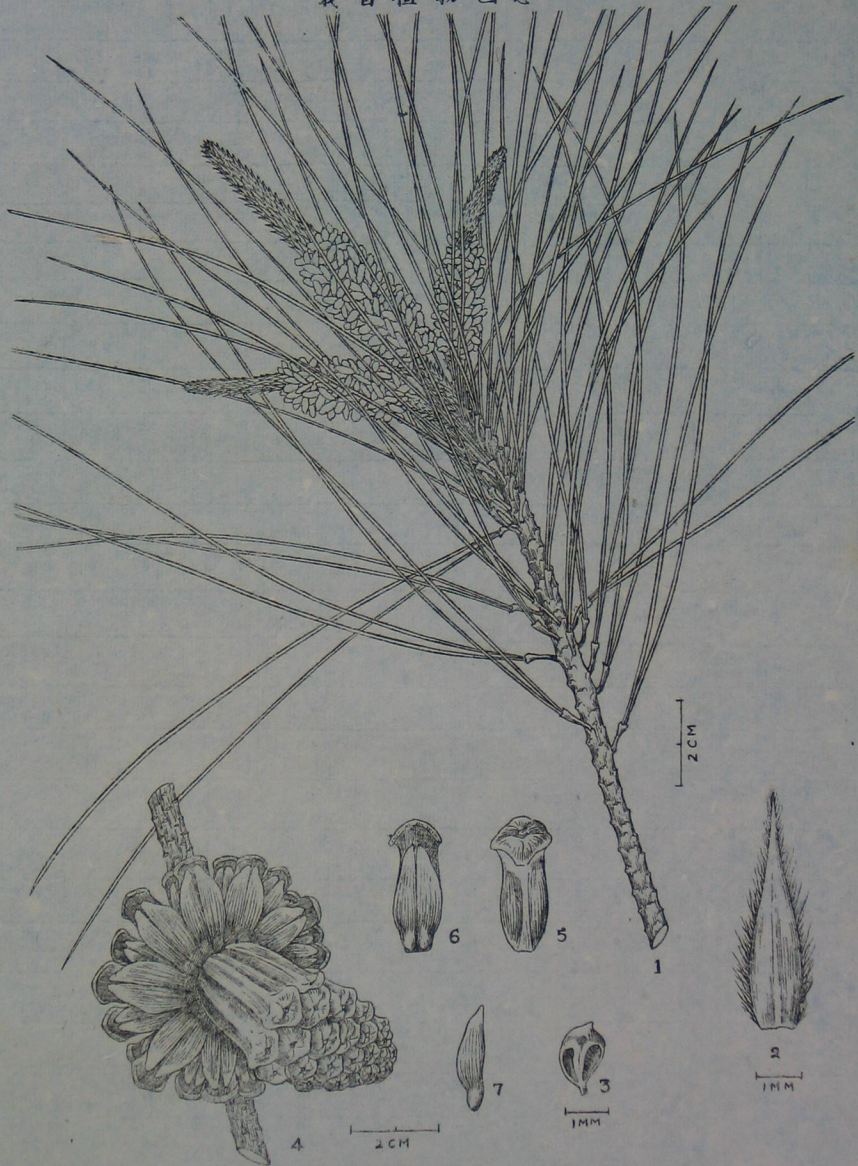
常綠喬木，高二十公尺，稀達三十公尺，樹冠塔形或圓錐形；樹皮初為紫紅色，繼變灰褐色，成小片狀或不規則之縱裂成薄片狀；小枝輪生，無毛，黃褐色或黃灰色，圓筒形，向下生長之葉基宿存致枝成粗糙之狀。冬芽圓錐形，鱗片褐色，質薄而薄膜，披針形，先端漸尖，邊緣具纖毛而反捲。葉螺旋形排列，針形，常二葉為一簇，稀三葉為一簇，長十至二十公分，纖細，淡綠色，邊緣具細小之鋸齒；葉鞘管狀，宿存，灰色。花單性，大小蕊花同株；小蕊花黃色，密集聚生成橢圓形或圓錐形之柔荑花序，基部具三苞片，小蕊多數，着生成螺旋形，花藥二室，不具花絲，藥隔亞圓球形；大蕊花紫色或球形花序，單生或數花序叢生於幼嫩小枝之先端，花序具多數螺旋形排列之鱗片，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整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 (1864), 85, t. 12 (Pl. David. I. 285); in Journ. de Bot. XIII (1869), 284.— Belessner in Nuov. Giorn. Bot. Ital. n. ser. IV (1897), 184.— Masters in Journ. Linn. Soc. Bot. XXVI (1902), 649; XXXV (1904), 582; XXXVII (1906), 415.— Clinton-Baker, III. Conif. I (1908), 6, t.— Elwes & Henry, Trees Gr. Brit. & Irel. V (1909), 1043.— Stapf in Bot. Mag. CXXXVI (1910), t. 8347.— Mottet in Rev. Hort. (1910), 423, pls. 177-178.— Shaw in Sargent, Pl. Wilson. I (1911), 1; II (1914), 12; Genus Pinus, (1914), 30, t. 8, figs. 86-99.— 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), 306; in Journ. Arn. Arb. IV (1923), 119.— Dallimore & Jackson, Handb. Conif. (1923), 370.— Silva Tarouca & Schneider, Uss. Freiland Nadelholz, 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 (1928), 48.— Hu in Hu & Chun, Icon. Pl. Sin. I (1927), 4, t. 4.— Handel-Mazzetti, Symb. Sin. VII, Liefer. ung 1 (1928), 16.— W. C. Cheng in Contrib. Biol. Lab. Sci. Soc. China, VI (1930), 9.

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

Pinus koraiensis (non Siebold et Zuccarini), Belessner in Nuov. Giorn. Bot. Ital. n. ser. IV (1897), 184.— Masters in Journ. Linn. Soc. Bot. XXVI (1902), 650; 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 (1896), 270.

Pinus mandshurica Masters (non Murray, non Ruprecht) in Journ. Linn. Soc. Bot. XXVI (1902), 581.

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 Lemoine et Leveille in Fedde, Rep. Spec. Nov. VII (1910), 60

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

Pinus Komarovii Leveille, Fl. Kory-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 cylindrical, 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, cylindrical, 2 cm. long, with spatulate scale at base, anthers notched; pistillate flowers subterminal, erect on stout branchlets, cylindrical, purplish-brown. Cones cylindrical-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. 8690, October 16, 1938; Hou-tzu-po, alt. 1900 m., small tree with flowers in buds, *W. P. Fang*, No. 14396, May 10, 1940; Taping, alt. 1400 m., tree 15 metres high, *T. C. Lee*, No. 2783, 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, Opien-halen, 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 cylindric-oblong cones with wingless seeds. The wood is very soft and suitable for house building and low grade furniture making purposes.

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
松科

別名：五葉松，五鬚松，白松，青松，果松。

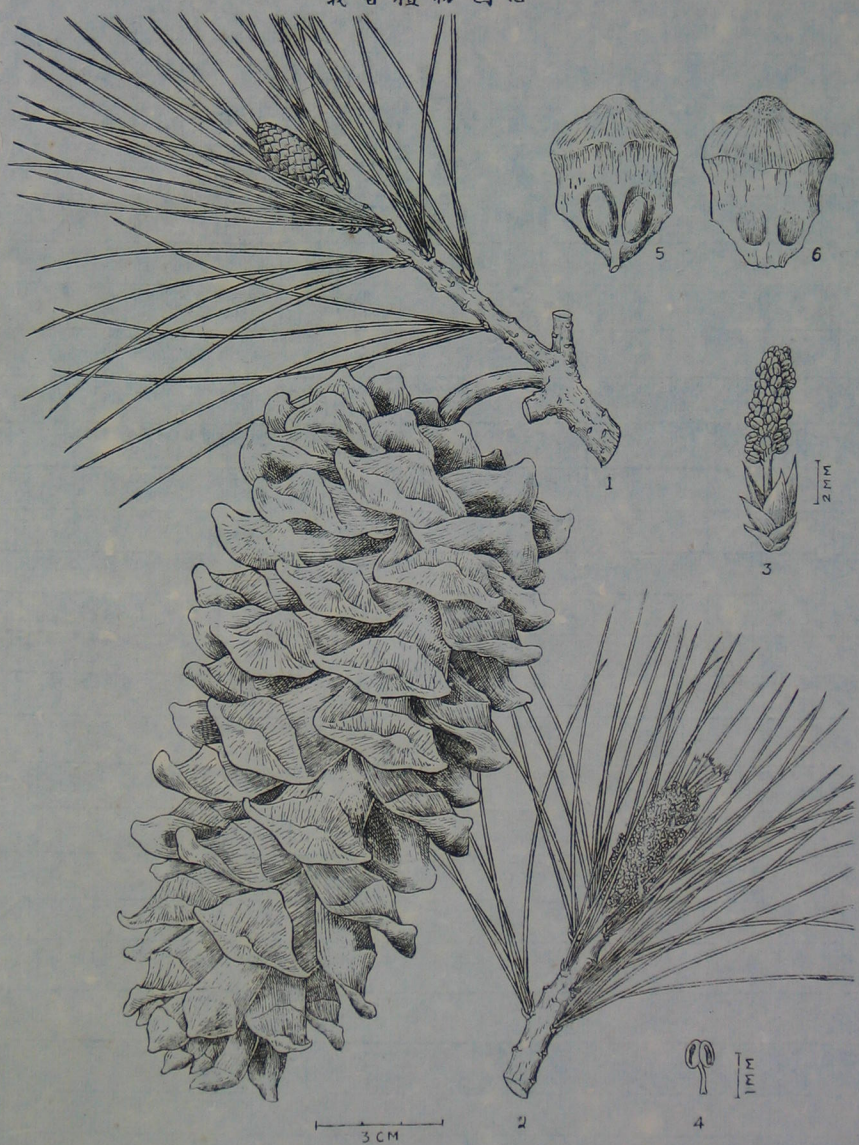
常綠喬木高二十公尺，稀達二十五公尺，樹皮灰色或褐灰色；小枝圓筒形，初為橄欖綠色或紫綠色，變灰色或深褐色，常平斜向伸展，成塔形樹冠。冬芽圓錐形，紅褐色。葉針形，淡綠色，常五葉為一簇，稀三葉或五葉以上為一簇，長八至十七公分，纖細，具細鋸齒，橫剖面成三角形，腹面具氣孔線四至六條，背面平滑，樹脂管生於外緣或中央抑或外緣與中央均有之，此三種生法有時在同一小枝之葉中均有之；葉鞘脫落，苞片線狀披針形，黃綠色，膜質。花單性，大小蕊花同株；小蕊花黃色，成圓柱形之花序，長二公分，基部具匙形之鱗片，花藥二歧；大蕊花着生近於小枝之先端，直立，圓柱形，微反捲，鱗片背面之頂端圓斜方形，淡黃色或黃褐色，鱗片甚小，位於鱗片之先端，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，邊緣具短稜紋。

本種產於峨眉山之大佛寺，猴子坡，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。與原產舊馬拉雅山（雲南亦產之）之喬松及日本之五鬚松（我國庭園固有栽培者）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

Plate 182.

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. II. Wilson in Journ. Arn. Arb. VII (1926), 57. Rehder, Manual Cult. Trees & Shrubs (1927), 27. Handel-Mazzetti, Symb. Sin. VII, Lieferung 1 (1929), 17.

Pinus Abies Loureiro (non Linnaeus), Fl. Cochln. (1760), 579, Syn. exclud.

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

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

Betula jacutilolia Salisbury in Trans. Linn. Soc. VIII (1807), 318.

Cunninghamia sinensis Brown apud Richard, Conf. (1828), 80, t. 18, fig. 3. Link in Linnaea, XV (1841), 840. Stebold & Zuccarini, Fl. Jap. II (1844), 7, t. 103, 104; in Abh. Akad. Muench. IV, pt. II (1845), 235 (Fl. Jap. Fam. Nat. II, 111). Bentham, Fl. Hongk. (1861), 337. Miquel in Ann. Mus. Ludg.-Bat. III (1867), 167; Prot. 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 (1903), 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. Pl. Formos.). Pampanini in Nuov. Giorn. Bot. Ital. n. ser. XVII (1910), 231; XVIII (1911), 105. Dunn & Tutchin in Kew Bull. Misc. Inform. add. ser. X (1912), 253 (Fl. Kwangtung & Hongkong). Patschke in Bot. Jahrb. XLVIII (1913), 672. Bean, Trees & Shrubs Hard. Brit. Isl. I (1929), 441, (5th edit.).

Betula 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 synon. *Cunninghamia sinensis*).

Cunninghamia sinensis var. *prolifera* Leme et Lovelle 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, cylindrical-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. 10029, March 1940; Pao-kuo-ssu, alt. 800 m., small tree 5 metres high, W. P. Fung, No. 13697, November 13, 1939; same locality: small tree 5 metres high, staminate flowers yellow, C. L. Chow, No. 5508, March 13, 1942; Hung-chun-ping, alt. 1147 m., H. C. Chow, No. 8010, August 5, 1938.

SZETCHUAN: 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 wherast 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 bowring 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)

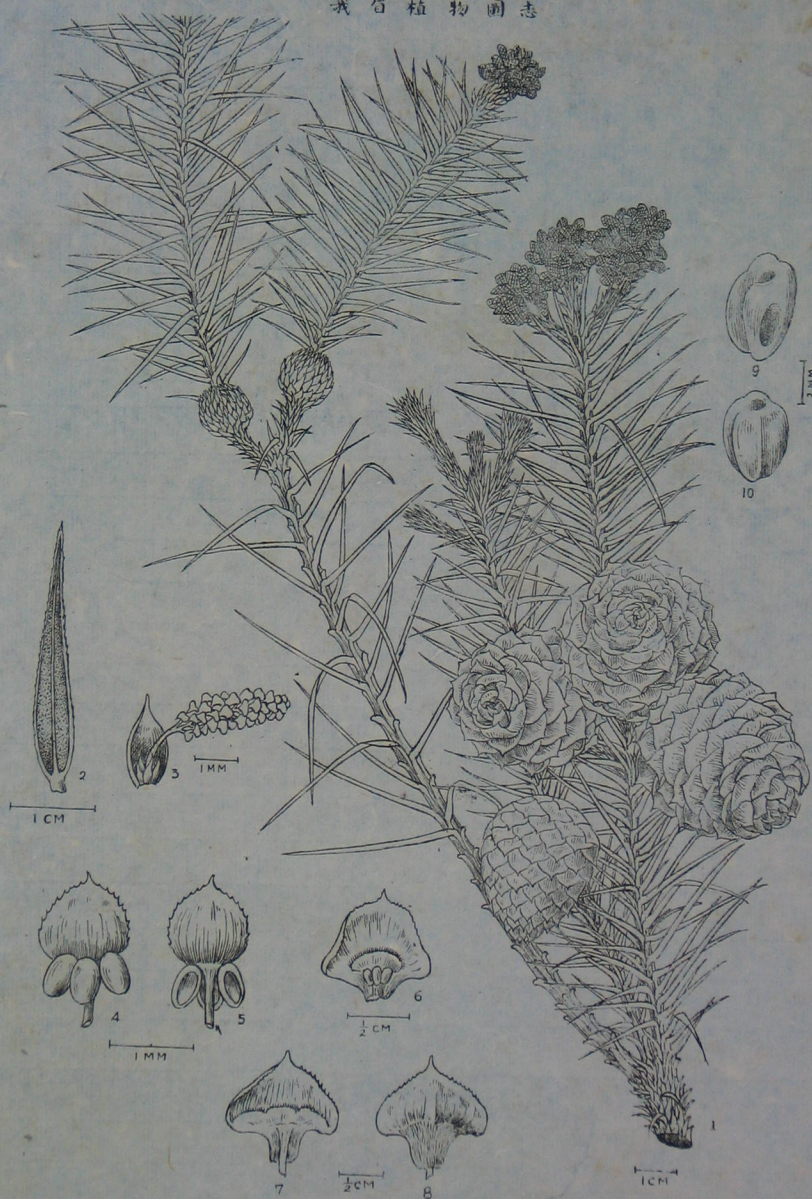
杉科

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，當年者綠色並現棱角，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，其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；如在冠鐵場，洪珠山，報國寺洪椿坪及大坪等處，常成純粹沙木林；種於側或路旁者亦多。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; Profl. Fl. Jap. (1867), 332; in Siebold & Zuccarini, Fl. Jap. II (1870), 49, t. 124, 124B.-Parlatore in De Candoille, Prodr. XVI. pt. II (1868), 436.-Debeaux in Act. Soc. Linn. Bordeaux, XXX (1875), 109 (Fl. Shangh. 67).-Franchet & Savatier, Enum. Pl. Jap. I (1876), 469.-Masters in Journ. Linn. Soc. XVIII (1861), 497; XXVI (1902), 544; XXXVII (1906), 413.-Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII (1864), 101 (Pl. David. I. 291).-Sargent in Garden & Forest. VI (1893), 443, fig. 66; For. Fl. Jap. (1894), 74, t. 24.-Pritzl 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), 103.-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 (2d edit.).

Cupressus japonica Linnaeus f., Suppl. (1761), 421.-Thunberg, Fl. Fl. Jap. (1768), 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 2-6 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: Kiangsü, Chekiang, Anhwei, Kiangsü, Hupeh, Szechuan, Kweichow, Yunnan, Japan. This monotypic species is commonly cultivated at the temple grounds on the foot of Mount Omei.

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
CRYPTOMERIA JAPONICA D. DON

孔雀杉

別名：榿杉，密條杉，寶樹。



Cryptomeria japonica D. Don in Trans. Linn. Soc. XVIII (1841), p. 87, t. 1, f. 1. Hooker, Icon. Pl. VII (1844), t. 133, f. 1. Siebold & Zucc. in Bot. Mag. (Tokyo) IV, p. 111 (1837), t. 234 (Pl. VII).
 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，螺旋形生長，排成五縱列，宿存至四五葉，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，表面兩面均凸出並具氣孔。花小，單性，大小花同株，且常生於同一枝上，小蕊花叢生或圓柱形，生於枝之頂端或近於頂端，鱗片覆瓦狀排列，銳尖或鈍形，圓形，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；大蕊花叢生或成圓球形，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，先端具尖形之刺狀突起，苞片之大部與鱗片合生，由其先端反捲向外；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，兩邊具窄翼。

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，湖南，貴州，雲南等省以及日本之四國，本國僅此種，在峨眉山山麓，漢縣之青城山及京都，均常種於寺廟之庭園。

圖解：着花及果之枝（原大）；大花（放大五倍）；小蕊（放大十倍）；小蕊花之花囊（放大八倍）；鱗片及苞片（放大十倍）；種子（放大三倍）。

Flowers small, unisexual, monoecious, staminate and pistillate flowers on different parts of the same branch; staminate flowers in cylindrical clusters from the axils of leaves and terminal or subterminal panicles; pistillate flowers in axillary clusters or obtuse, concave, yellowish glanous, entire yellow. Scales imbricate, acute at the base of scales; pistillate flowers in axillary clusters, with 3-5 ovules on the base of each scale. Fruits brown, spheroid, 1-1.5 cm. long and diameter, terminal or branched, ripening the first year and remaining on the branch for one or more years; woody scales 20-30 brown, bell-shaped, centrally attached to the axis, with pointed process at the apex, flat against the scale for its greater part and its apex recurved on the inner surface of scales; seeds 3-5 to a scale, brown, triangular or triangular-obovate, 4-6 mm. long, 2-3 mm. broad, flat, often narrowly winged.

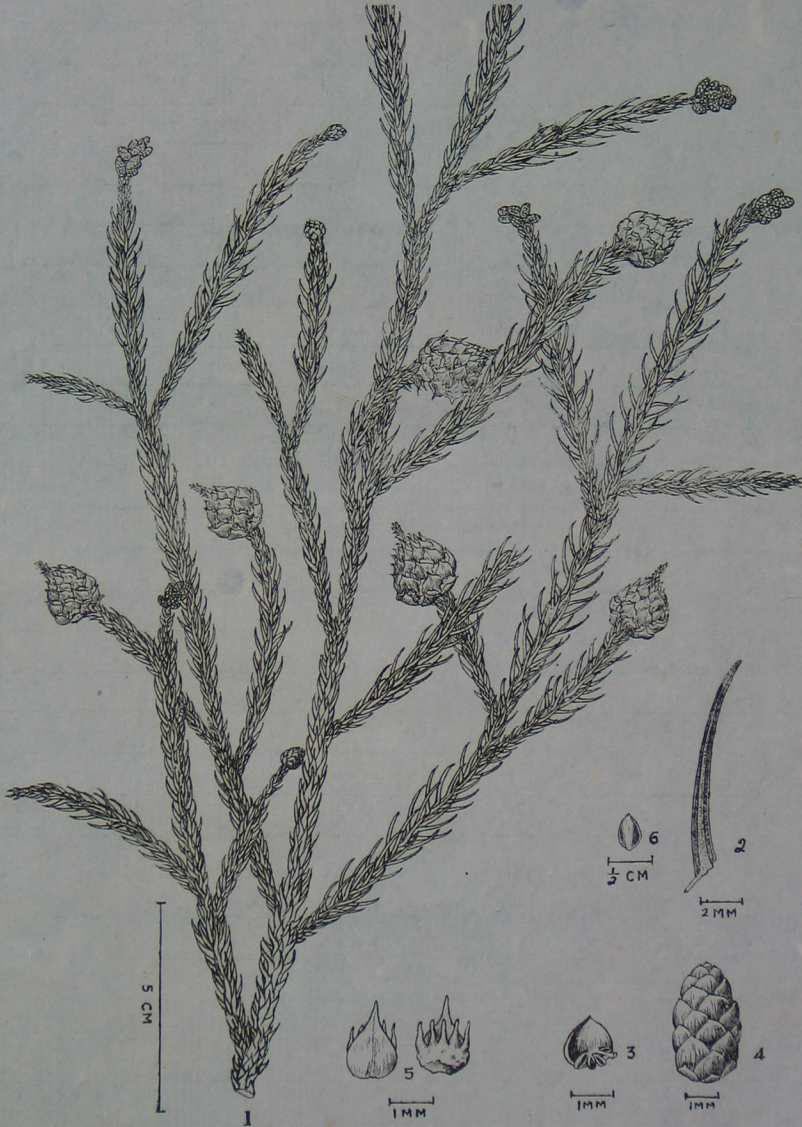
MOUNT OMEI. Fu-hsing, alt. 350 m. C. A. Clark, without number, April 1941; Hsing-shan, alt. 1150 m. H. C. Clark, No. 4929, May 1938.

SECHUAN. Ching-shan, cultivated tree 10 meters high, H. C. Clark, No. 1749, April 4, 1938.

Distribution: Kansu, Chekiang, Anhwei, Szechuan, Kwangchow, Yunnan, Japan.

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

Fig. 1. A flowering and fruiting branch (natural size); 2. A leaf (enlarged 3 times); 3. A staminate flower (enlarged 10 times); 4. Staminate flowers (enlarged 5 times); 5. Scales and bracts (enlarged 10 times); 6. Seed (enlarged 3 times).



183. *Cryptomeria japonica* D. Don

Plate 184.

CUPRESSUS FUNEBRIS Endlicher.

Cupressac ac.

Cupressus funebris Endlicher. Syn. Conif. (1847), 38.—Parlatore in De Candolle, Prodr. XVI, pt. II (1868), 471.—Debeaux in Act. Soc. Linn. Bordeaux, XXX (1878), 110 (Fl. Shangh. 82).—Masters in Journ. Linn. Soc. XVIII (1881), 496; XXVI (1903), 540; XXXVII (1906), 412; in Journ. Bot. XLI (1903), 268.—Kanitz in Noven. Gyuzeit. Szechenyi, II (1891), 247 (Pl. Enum. 63); Wiss. Ergeb. Reise Szechenyi, II (1896), 738.—Franchet in Journ. de Bot. XIII (1893), 263.—Pritzl in Engler, Bot. Jahrb. XXIX (1900), 219.—Pavolini in Nuov. Giorn. Bot. Ital., n. ser. XV (1908), 439.—Patschke in Engler, Bot. Jahrb. XLVIII (1913), 675, t. 8, fig. 6.—Rehder et Wilson, in Sargent Pl. Wilson, II (1914), 55.—Chun, Chin. Econ. Trees, (1921), 37.—Handel-Mazzetti, Symb. Sinicae, VII, Liferung I (1928), S.—Bean, Trees & Shrubs Hard. Brit. Isl. I (1929), 443 (5th Edit.). 八里木, 八里木, 八里木

Cupressus pendula Abel (non Thuusberg, nec L'Heritier) in Stanton, Embassy to China, II (1791), 235 (nomen nudum).—Lambert, D. scrip. Pinns, I (1803), 97, t. 43.

Cupressus funebris gracilis Carriere, 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 petalate 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 petalate scales, usually mucronulate at the flat apex, each scale with numerous narrowly winged seeds.

MOUNT OMEI: Pao-ping-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 28, 1937.

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

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

Distribution: Kiangsu, Chekiang, Kiangsi, Hupeh, Hunan, Szechuan, Kwelchow, 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，四棱形，具齒狀之小葉。葉對生，成
 四行，綠色，鱗片形，長二公厘，先端銳尖或針狀，在枝兩側之葉上部離枝向外伸展，在枝腹面與背面
 之葉盾形且緊貼於枝。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，扇形鱗
 片之先端具小尖頭，每鱗片之內側着生多數拳而具翅之種子。

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

Plate 185.

THUJA ORIENTALIS Linnaeus

Cupressaceae.

Thuja orientalis Linnaeus, Spec. (1753), 1002.- Thunberg, Fl. Jap. (1794), 226.- Abel, Narr. Journ. China, (1818), 145.- Walllich, 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), 690.- Masters in Journ. Linn. Soc. XVIII (1881), 488; XXVI (1902), 540; 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.- Pritzels in Engler, 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 (1923), 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 Moench, Meth. (1874), 692.

Cupressus Thuja Targioni-Tozzetti, in Ann. Mus. Firenze, I. pt. II (1868), 62 (Obs. Bot. Dec. II. 52).

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

Bioda orientalis Edlichler, Syn. Conif. (1847), 47.

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

Tree about 16 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. 9777, in 1938; Tu-chu-chih, alt. 450 m., small tree 5 metres high, staminate flowers yellow, *W. P. Fang*, No. 13138, March 2, 1942; Shun-yang-tien, alt. 1095 m., tree 14 metres high, staminate flowers yellow, *C. L. Chow*, No. 6134, May 3, 1940.

SZECHUAN: Chengtu, cultivated in the University, small tree 5 metres high, *W. P. Fang*, No. 12076, 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 5, 1944.

Distribution: Manchuria, Hopeh, Shantung, Honan, Sueni, 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 (enlarge d 15 times); 5, a longitudinal section of pistillate flower (enlarged 4 times); 6, a cross section o f pistillate flower (enlarged 4 times).

圖版一百八十五

側柏

柏科

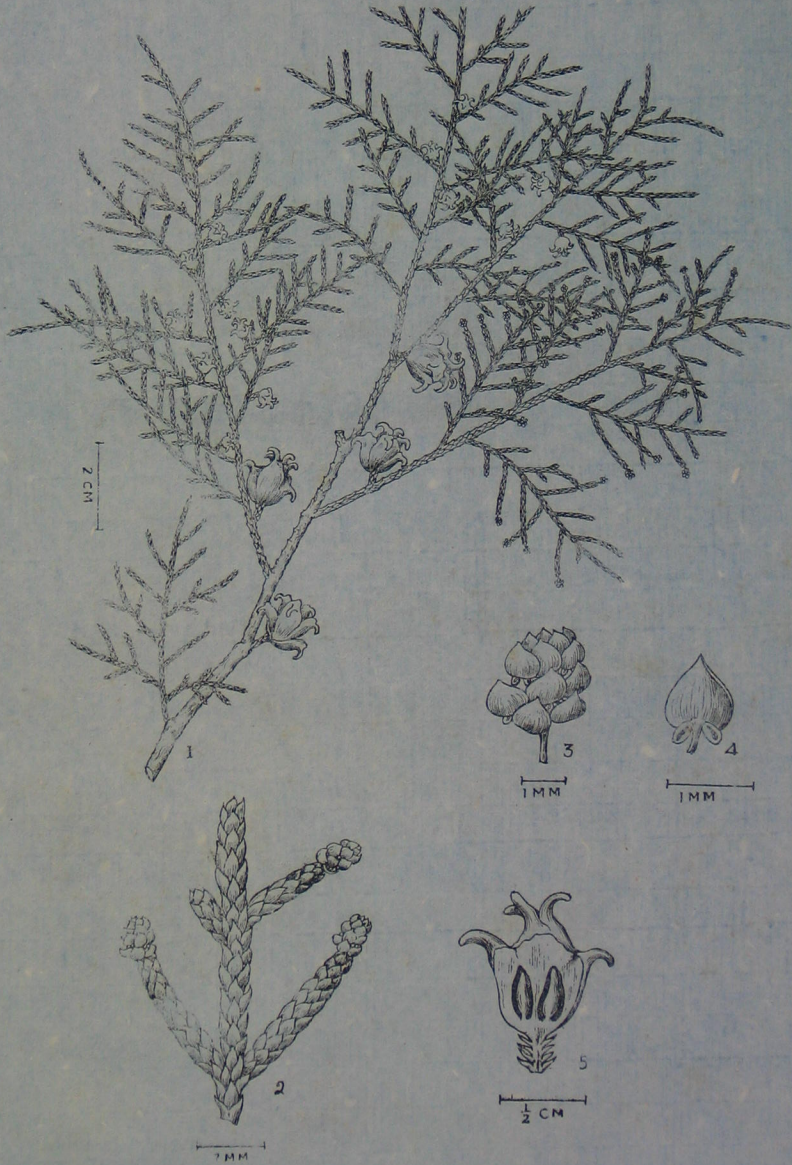
常綠喬木高十五公尺；樹皮深褐色或紅褐色，淺縱裂而成薄片脫落；枝平斜伸展，略向上彎曲，成塔形樹冠，小枝灰褐色，扁形，常伸展成垂直之平面，葉綠色，成對互生，鱗片狀，背面具腺點，大小蕊花異株，頂生，小蕊花序長方卵形，黃色，上具十二本相互對生之圓形藥隔，每隔有花藥兩個，大蕊花序綠色，略呈圓形，具三對肉質鱗片，每鱗片側有二至三枚胚珠，球果直立，初時肉質，帶藍色，漸熟則變木質，橢圓形，長十二至二十五公厘，果鱗六枚，圓或八枚，肥厚或木質，先端具帶鉤之角狀刺，上部果鱗不具種子，下部者各有種子二枚；種子大而圓，無翅。

此種產峨眉山上，由平地至一千公尺左右皆有之，花期在三月至五月之間。成羣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 188. *Juniperus chinensis* Linnaeus.**JUNIPERUS CHINENSIS** Linnaeus.

Cupressaceae.

Juniperus chinensis Linnaeus, Mant. (1767), 127. Roxburgh, Fl. Ind. III (1832), 836 (2nd edit.).- Bunge in Mem. Sav. Etr. Acad. Sci. St. Petersburg, II (1833), 137 (Enum. Pl. Chlu. Bor. 63).- Stebold & Zuccarini in Abh. Akad. Munch. IV, pt. III. (1846), 233 (Fl. Jap. Fam. Nat. II 169).- Miquel in Ann. Mus. Lugd.-Bat. III. (1867), 167; Prol. 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), 437, excludendis specimenibus indicis.- Franchet & Savatier, Enum. Pl. Jap. I (1876), 472.- Masters in Journ. Linn. Soc. XVIII (1861), 497; XXVI (1902), 541; XXXVII (1906), 412; in Journ. Bot. XLI (1863), 268.- Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII (1894), 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.- Shirasawa, Icon. Ess. For. Jap. I (1900), 29, t. 12, fig. 14-27.- Palibin in Act. Hort. Petrop. XIX (1901), 137 (Consop. Fl. Kor.).- Matsumura in Bot. Mag. Tokyo, XV (1901), 138.- Matsumura & Hayata in Journ. Coll. Sci. Tokyo, XXII (1906), 402 (Enum. Pl. Formos.).- Pavolini 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), 116.- Chun, Chin. Econ. Trees, (1921), 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. 61 (1st edit.); (1931), 236, fig. 61 (2nd edit.).- Wilson in Journ. Arn. Arb. VII (1928), 67.- Bean, Trees & Shrubs Hard. Brit. Isl. I (1929), 669 (8th 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. Veg. Beechey, (1839) 271.

Juniperus laetida, var. *sabina* Spach, Hlst. Veg. XI (1842), 315, quoad synon.

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 Reeversonia 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 Cabiannae Visianni in Mem. Istit. Venet. Sci. VI (1855), 246, t. 17.- Gard, Chron.

(1857), 548.

Sabina sphaerica Antoine, Cupress. (1857), 82, t. 73 (pro parte).

Sabina chinensis Antoine, Cupress. (1857), 84, 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, Phnetum (1859), 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. 12037, 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。

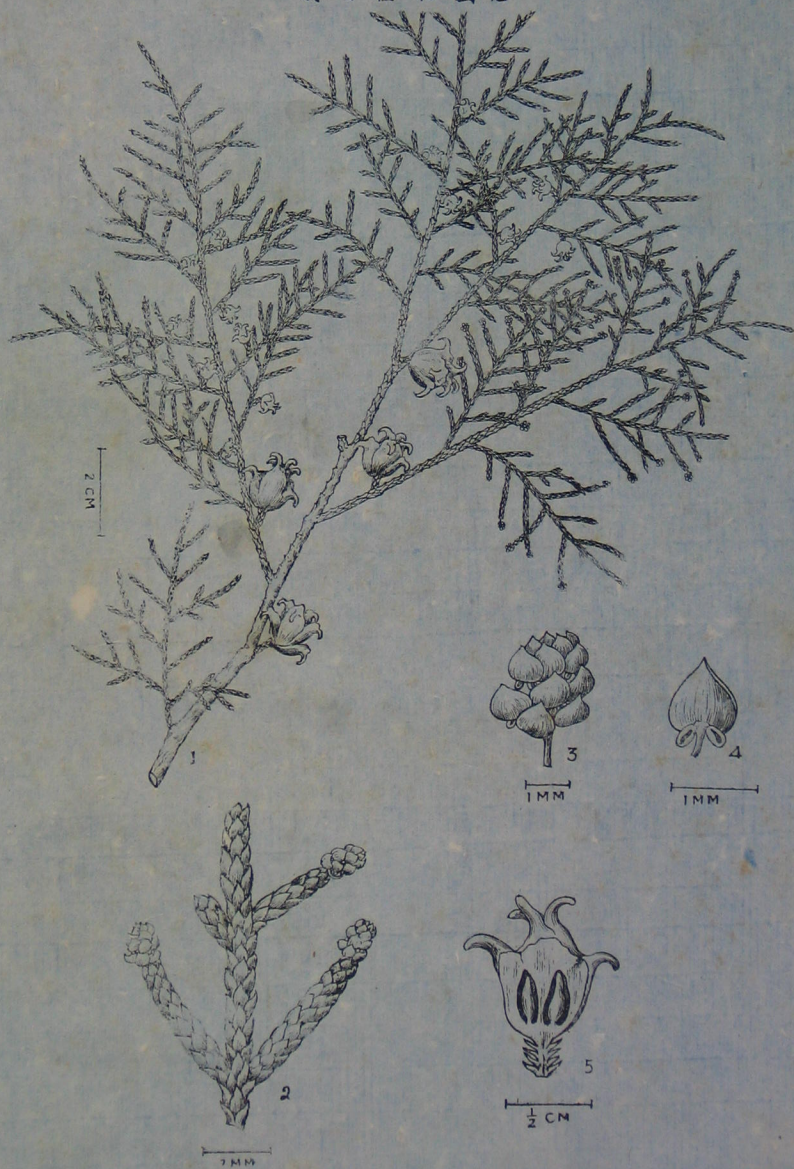
柏 科

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，具尖形之齒質鱗片四至六枚，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. 實果之枝（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）。



185. *Thuja orientalis* Linnaeus

Plate 187.

JUNIPERUS SQUAMATA Buchanan-Hamilton.

Cupressaceae.

Juniperus squamata Buchanan-Hamilton apud Lambert, Descr. Gen. Pinus II (1942), 17. - D. Don, Prodr. Fl. Nepal. (1825), 65. - Sprach 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. Sinciae, VII, Lieferung 1 (1929), 9.

Juniperus religiosa Royle, Ill. I (1839), 381 (nomen nudum).

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

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

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

Juniperus recurva B. *squamata* Parlatore in De Candolle Prodr. XVI, pt. II (1869), 432. - Hoeker f., Fl. Brit. Ind. V (1868), 647. - Masters in Journ. Linn. Soc. XXVI (1902), 543; XXVII (1903), 413; in Journ. Bot. XLI (1903), 268. - Patschke in Bot. Jahrb. XLVIII (1913), 678.

Juniperus recurva Franchet (non Buchanan-Hamilton) in Novv. Arch. Mus. Paris, ser. 2, VII (1884), 102 (Fl. David. 1, 292); in Journ. de Bot. XIII (1899), 263. - Belsner in Nouv. Glorn. Bot. Ital. n. ser. IV (1907), 186. - Pritzl in Engler, Bot. Jahrb. XXX (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 Komarov 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: Chlu-ting, alt. 3135 m., *T. H. Tu*, Nos. 313 & 320, 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-hsien, 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., (1923), 260. Wilson in Journ. Arn. Arb., VII (1926), 65.

Juniperus Lameziana Leveillé & Bin in Leveillé, Fl. Kouy-tcheouy, (1915), 111.

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

SOUTHWEST OF MOUNT OMEI: Opieh-hsien, Yen-ching-chi, trees 15 metres high, bark brownish-grey, fruit with one seed, *W. C. Cheng*, Nos. 6839 & 6880, July 1936.

Distribution: Shansi, Kansu, Hupeh, Szechuan, Sikiang, Yunnan, etc.

This variety represents a tree form of the type species. It has been found not uncommon at Opieh-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，現繃紋，光滑無毛。葉三枚輪生，在半長旺盛之嫩枝上常密集，在主枝上則較稀疏，綠色，現繃紋，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，略現繃紋。小葉花黃色，多數密集成卵圓形之葉花序。大葉花綠色，亞圓球形，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，現春紋。

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。因常生於岩石成匍匐狀，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。

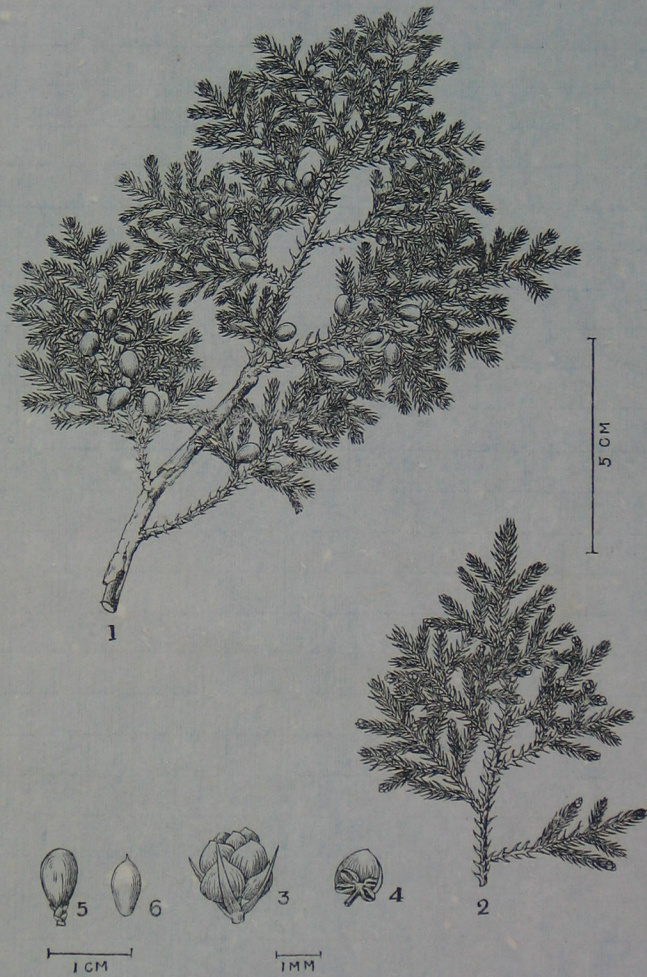
圖解：1. 着果及葉之枝(原大)； 2. 小葉花枝(原大)； 3. 小葉花序(放大十倍)； 4. 小葉(放大十倍)； 5. 果實(放大二倍)； 6. 種子(放大二倍)。

法氏巖刺柏 變種
此變種產於峨邊縣之臘井溪，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，製造成香，以作拜佛所薦時焚獻之用。故又俗名香杉。

MOUNT OMEI. China. 2132 m. T. Y. No. 313 & 310, in 1935; same locality, in 1936. 2132 m. in thickets, shrub 2 metres high, dark hair grey, leaves green. C. K. Lee No. 313, May 20, 1940; 2132 m. in 1936; southwest to Mount Omei, Opieh-hsien, Shansi. 2132 m. in thickets, shrub 2 metres high, bark grey, leaves green, fruit green. C. K. Lee No. 313 & 310, Nov. 1936; August 28, 1936; without precise locality. C. K. Lee No. 313 & 310, Nov. 1936 to 1938.

Distribution: Szechuan, Yunnan, Hainan.

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



187. *Juniperus squamata* Buchanan-Familton.

SIKANG: Tien-chuan-hsien, K. L. Chu, Nos. 2257, 2331, 6519 & 5520, In 1936; same locality, F. C. Tai & C. M. Teng, No. 5181, September 12, 1939.

Distribution: Shensi, Chekiang, Kiangsi, Hupei, 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. Faag.

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：兩穹粗杉，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繖狀，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。

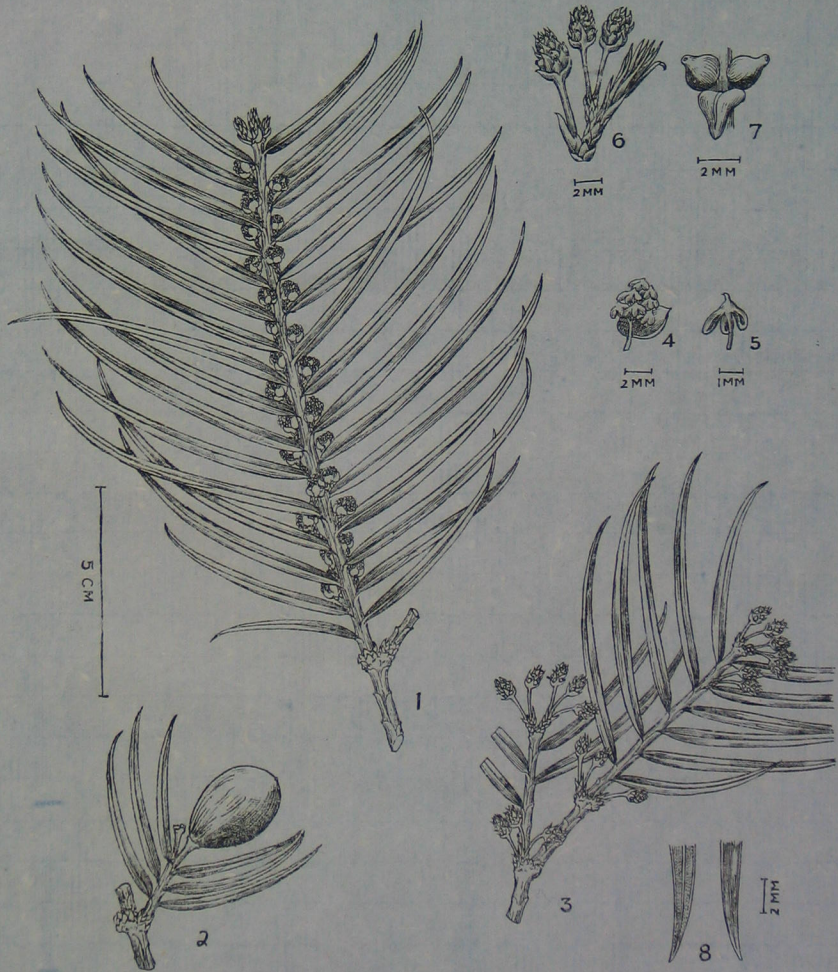
此種產於峨眉山之石梁溝，黑龍江及牛心寺等處叢林中。三四月開花，八月果可成熟。

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. 小葉（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

Plate 189.

CEPHALOTAXUS OLIVERI Masters.

* 头头树, 头头树: 头头树

Taxaceae.

Cephalotaxus Oliveri Masters in Bull. Herb. Boissier, VI (1898), 270; in Journ. Linn. Soc. Bot. XXVI (1902), 848; XXVII (1903), 413; in Gard. Chron. ser. 3, XXXIII (1903), 227, fig. 83; in Journ. Bot. XI (1903), 269. - Pritzl in Engler, Bot. Jahrb. XXIX (1900), 214. - Pilger in Engler, Pflanzenreich, IV.-5. (1903), 104 (Taxaceae). - Patschke in Engler, Bot. Jahrb. XLVIII (1913), 629. - Rehder & Wilson in Sargent, Pl. Wilson, II (1914), 6. - Rehder, Manual Cult. Trees & Shrubs (1927), 4. - Bean, Trees & Shrubs, Hard. Bitt. Isl. I (1928), 332 (5th edit.). - Dallimore & Jackson, Handb. Bot. (1931), 25 (2nd edit.).

Cephalotaxus Griffithii Oliver (non Hooker f.) in Hooker's Icon, Pl. XX (1850), t. 1933, excludend. specimenibus a Griffith et Watt collectis.

Shrub 2 to 5 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 18 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 2-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; Hng-chun-ping, alt. 1147 m., *W. C. Cheng*, No. 6712, October 1926; 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. G. Chow*, No. 8668, October 16, 1938; same locality, in forests, shrub 3 metres high, *T. C. Lee*, No. 4367, 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 5 metres high, staminate flowers yellow, *W. P. Fang*, No. 15386, 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。表面兩面均光滑無毛。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，先端突尖或銳利之尖頭，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原珠。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，荷音閣，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。故命名為梳葉圓頭杉。

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）。

THE SPECIES IS CLOSELY DISTINGUISHED FROM OTHER SPECIES BY THE CHARACTERISTIC ARRANGEMENT OF THE LEAVES WHICH FORMS A COMB. THE CLOSELY ARRANGED LEAVES RESEMBLE A COMB. IT WAS DISCOVERED BY MR. FABER AT MOUNT OMEI AND IS VERY LIMITED IN DISTRIBUTION IN CHINA.

DISTRIBUTION: WESTERN SICHUAN.

Fig. 1. A staminate flowering branch (natural size); 2. A pistillate flowering branch (natural size); 3. A pistillate branch (natural size); 4. A staminate flowering inflorescence (enlarged 10 times); 5. A pistillate flower (enlarged 10 times); 6. A staminate flower (enlarged 10 times); 7. A pistillate flowering inflorescence (enlarged 5 times); 8. The leaf lower surface (enlarged 1.5 times).

Mr. Faber, Mt. Omei, March 18, 1891.

This species is closely distinguished from other species by the characteristic arrangement of the leaves which forms a comb. The closely arranged leaves resemble a comb. It was discovered by Mr. Faber at Mount Omei and is very limited in distribution in China.

Distribution: Western Szechuan.

Fig. 1. A staminate flowering branch (natural size); 2. A pistillate flowering branch (natural size); 3. A pistillate branch (natural size); 4. A staminate flowering inflorescence (enlarged 10 times); 5. A pistillate flower (enlarged 10 times); 6. A staminate flower (enlarged 10 times); 7. A pistillate flowering inflorescence (enlarged 5 times); 8. The leaf lower surface (enlarged 1.5 times).

Mr. Faber, Mt. Omei, March 18, 1891.

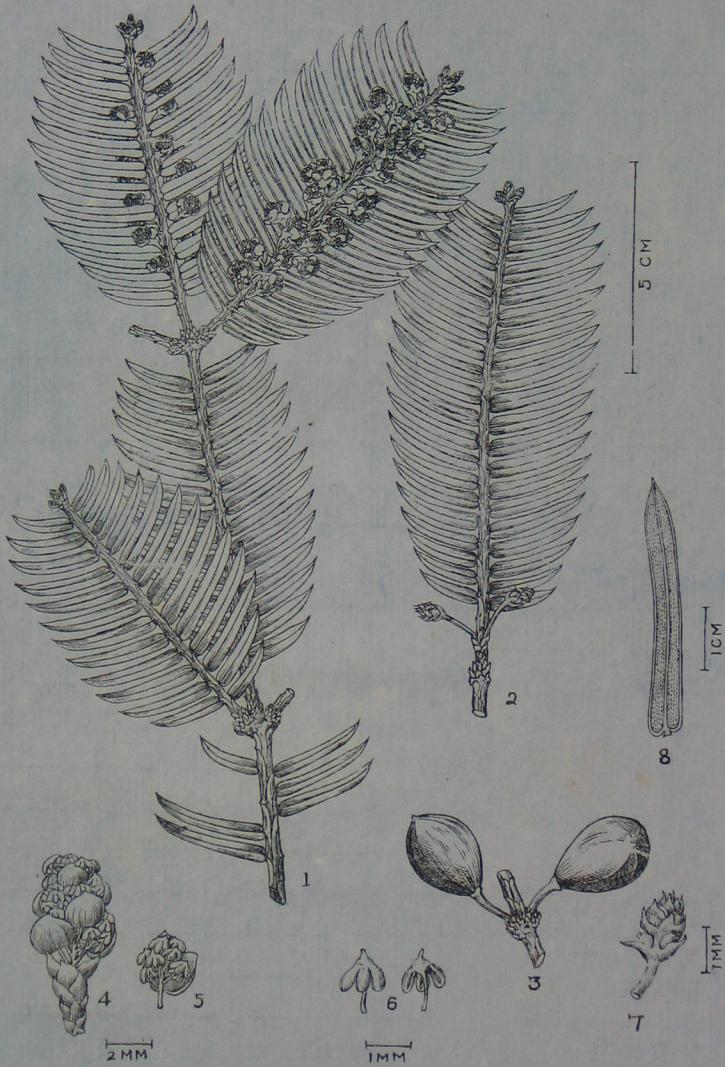
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Distribution: Western Szechuan.

Fig. 1. A staminate flowering branch (natural size); 2. A pistillate flowering branch (natural size); 3. A pistillate branch (natural size); 4. A staminate flowering inflorescence (enlarged 10 times); 5. A pistillate flower (enlarged 10 times); 6. A staminate flower (enlarged 10 times); 7. A pistillate flowering inflorescence (enlarged 5 times); 8. The leaf lower surface (enlarged 1.5 times).

Mr. Faber, Mt. Omei, March 18, 1891.

蕨類植物圖志



189. *Cephalotaxus Oliveri* Masters

Plate 190.

TAXUS CHINENSIS (Pilger) Rehder.

Taxaceae.

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-Iholz. (1923), 34, fig. - Wilson in Journ. Arn. Arb. VII (1928), 41. - Handel-Mazzetti, Symb. Sinicae, VII, Lieferung I (1929), 2. - Chien, Icon. Chin. Forest. Trees, I (1937), pl. 3.

Taxus baccata Franchet (non Linnaeus) in Nouv. Arch. Mus. Paris, ser. 2, VII (1884), 103 (Pl. David. I. 293). - Pritzel 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, *Walllichiana* 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-tai, 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. Chew*, 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 8 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. 6216, 6320 & 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. Peng, 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.

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鐵刀，線形，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葉集成圓頭形，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；大蕊花具數種互狀排列之鱗片，最上之鱗片具胚珠，其基部具花盤。果為圓形之骨質堅果，外被珠紅色鱗形肉質之杯狀物。

此種產於峨眉山之洪梅坪，扁担岩，猴王坡，蛇倒退，大坪，洗象池，大乘寺及關王坡等處。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)。



190. *Taxus chinensis* Rehder

PODOCARPUS NERIFOLIUS D. Don.

植物名：油桐 科：紫葳科
podocarpaceae.

Podocarpus nerifolius D. Don in Lambert, *Descr. Pluss*, 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), 648; 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 (1923), 42. Dallimore & Jasonck, *Händb. Confl.* (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. Pritzell in *Engler, Bot. Jahrb.* XXIX (1900), 213. Masters in *Journ. Linn. Soc. Bot.* XXVI (1902), 648. Patschke in *Engler, Bot. Jahrb.* XLVIII (1913), 629 (pro parte). Pilger in *Engler, Bot. Jahrb.* LIV (1915), 38.

Podocarpus macrophylla var. *acuminatissima* Pritzell 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, 9-11, 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, subsessile, cylindrical, 2-3.5 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. C. 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 一 百 九 十 一

羅 漢 松 葉 脈

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，稀疏，厚革質，挺直或彎如鐮刀，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，中肋在葉背兩面均顯著，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。大小葉花異株：小葉花成叢生於葉腋之葉花序，長三至三分半，基部具銳尖之苞片，花藥黃色。二室；大葉花常單生於葉腋，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。

此種產於峨眉山洪雅平等前林中及其他寺廟與墳園。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, 小葉花枝 (原大)；2, 小葉花序 (放大五倍)；3, 小葉 (放大二十倍)；4, 大葉花枝 (原大)；5, 大葉花 (放大五倍)；6, 果實 (放大二倍)。

MOUNT OMEI. Wanshan-chang, alt. 430 m. Cultivated in the temple, which see a number of staminate flowers yellow. N. S. Young, No. 4434, May 10, 1940; H. S. Gentry, alt. 1000 m. A. C. Chase, Nos. 4224, 4225 & 4272, August 1932; same locality. C. N. S. Young, in 1932.

Distribution: India, Java, Sumatra, Borneo, China—Szechuan, Yunnan. This species is commonly cultivated around temples and tombs at the foot of Mount Omei.

Fig. 1. A staminate flowering branch (natural size); B, a staminate flowering branch (enlarged 5 times); C, a staminate flower (enlarged 20 times); D, a pistillate flowering branch (natural size); E, a pistillate flower (enlarged 5 times); F, a fruit (enlarged 2 times).



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 (1863), 47. Chung in *Mem. Sci. Soc. China*, I (1924), 223. Tsiang in *Sunyatsenia*, III (1936), 191; IV (1938), 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 so 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, ascending; 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).

圖版 百九十二

醉魂藤
蘿藤科

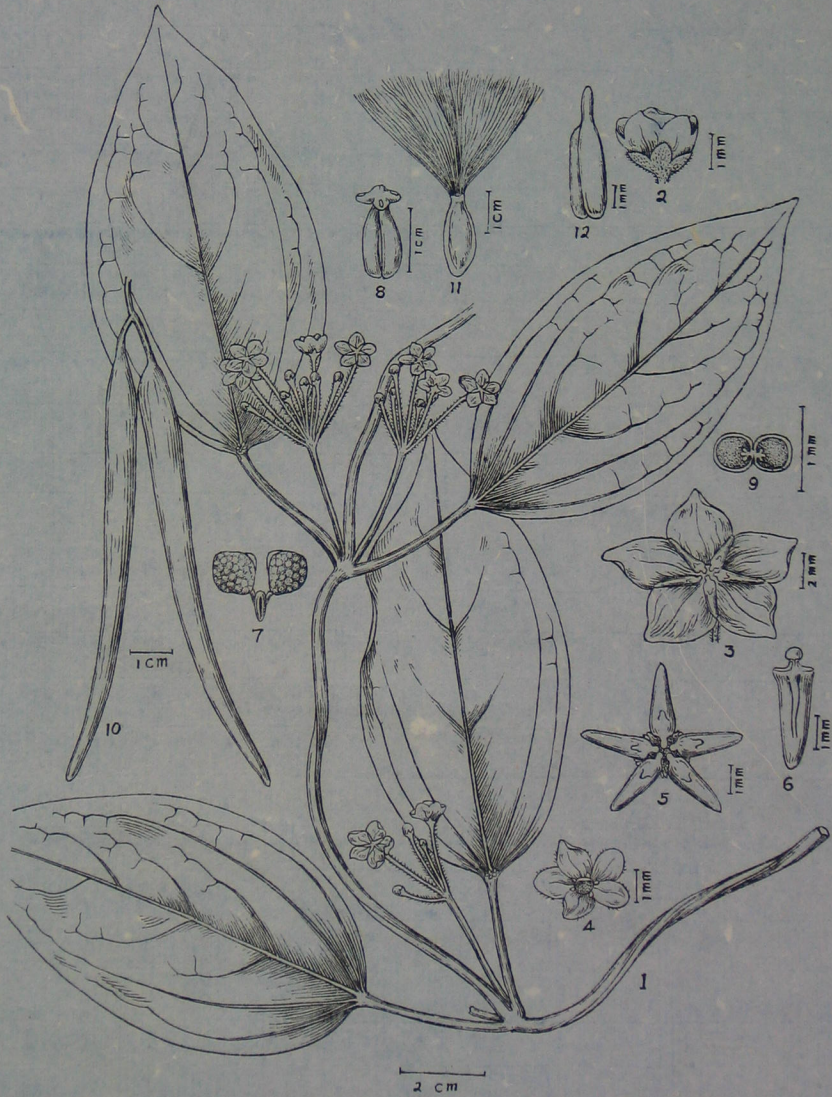
纖細攀緣灌木，高達四公尺；莖狀莖具縱紋及二縱列之柔毛，老時則漸光滑，節徑二至三公厘，節間長約五至十公分，稀達十五公分。葉紙質，上下兩面均被絨毛，尤以嫩時背面葉脈上為密，漸變則光滑無毛，寬卵形或長方形，先端漸尖而短，基部圓形或闊楔形，稀呈亞心臟形，長八至十公分，闊五至六公分，老而大者有時長可達十五公分，闊可達八公分，主脈由基部發出，初成翅形，在葉背清晰可見，後漸變扁平而隱沒，側脈三至四對，纖細，先端彎曲；基部小葉體十至二十成對，聚生葉柄之上；扁形葉柄被柔毛，長二至五公分。聚繖花序繖形，具花十至十五朵，長二至六公分，較葉為短；花梗粗壯，密被絨毛；苞片和小苞片卵形，長寬均各約五公厘；小花梗細長，密生絨毛，長二至一公分半。卵形圓形，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，基部內面具五個萼狀鱗片物。花冠黃色輪輪形，外面被毛，內面光滑無毛，冠筒俯直，長四至五公厘，花瓣在末開時頂端彼此連合，開後則成攝合狀，呈三角形，長及闊約為四至五公厘；副花冠五片呈芒形，從花筒之中柱伸出平展於花冠之上，呈長舌形，基部窄小，尖端鈍形可達花瓣相連之處；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微；藥柄短粗；藥囊紫色，菱形；子房長圓形，光滑無毛，胚珠多數，柱頭扁平而具五稜。莢筒相連成對，通常下部聯合，上部則分歧甚寬，呈截狀披針形，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，長三分；子葉長圓形，原極柱狀假子葉為短。

此種產於俄嶺山海拔一千三百公尺至一千八百公尺間之三遺青及九老洞森林中。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。方文培博士在峨山所採之是種標本，第一七四八號係着花之標本，極易鑑定，其一七二五號標本，則無花果。本種特點，為其數條由基部發出之葉脈其翅，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，初無變翅之葉徵，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. 莢莢（原大）； 11. 種子（原大）； 12. 胚（放大二倍半）。



192. *Heterostemma alatum* (Wallich) Wight

Plate 193.

PERIPOLOCA 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), 341.-Schneider in Sargent, Pl. Wilson: III (1916), 343.-Chung in Mem. Sci. Soc. China, I (1934), 221.-Tsiang in Sunyatsenia, II (1934), 179; III (1936), 161.-Handel-Mazzetti, Symb. Sinicae, VII, Lieferung 4 (1935), 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 fenticellate, to 5 mm. in diameter; internodes 3-5 cm. long. Inter- and intra-petiolear glands 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, spatulate, 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, cylindrical, 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. 800 m., scandent shrub, flowers greenish-white, *W. P. Fang*, Nos. 19101 & 19113, 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, 1923; Kuang-fu-ssu, alt. 1000 m., scandent shrub, fruits green, *W. P. Fang*, No. 15522, November 25, 1940; Niu-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. 1413, 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—Hupeh, 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, *Periploceae* to include plants having free filaments developing into a peculiar spatulate 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 31 genera of world wide distribution. Of this subfamily, only 6 genera, namely *Gymnanthera*, *Cryptolepis*, *Streptocaulon*, *Myriopterion*, *Periploca* and *Stelmatocryton* 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 heterogeneous assemblage of which the subfamily *Plumerioideae* 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 *Plumerioideae* from the *Apocynaceae*. With the incorporation of a part of *Loganiaceae*, particularly the group of *Stachyros*, the elements entering into the *Plumerioideae* 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，直徑約五公分；節間長三至五公分，長於葉柄內外兩面之腺體深紫色，鑿形，長一公分，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，寬一分半；中肋上面隆起，下面顯著，側脈甚多，略成平行排列，近邊緣處則相互交接成網狀；葉柄長一至二公分。聚繖花序腋生，分枝不少，着花亦多，長三至四公分；苞片卵圓形，具纖毛，長約一公分。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，長一公分半，闊一公分；花冠深紫色，凹旋形，徑長一公分，冠筒高一公分半，花瓣略向右旋轉，互相蓋合，外邊光滑，內面密具白色柔毛；長圓形，鈍頭，長五公分，闊二公分；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，長三至四公分（亦有缺刻副花冠為十裂者）；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，相聯圍列於柱頭外，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），着生花粉之價值，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。營養莖對，為長圓柱形，彼此連接，略呈歧狀，長十二公分，直徑五公分；種子長圓形，長達三公分，種毛白色，絲狀，長三分；胚呈狹長圓形，子葉較薄，長三公分，幼根短而粗壯。

此種產於峨眉山之伏虎寺，黑龍江，涼風嶺，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。

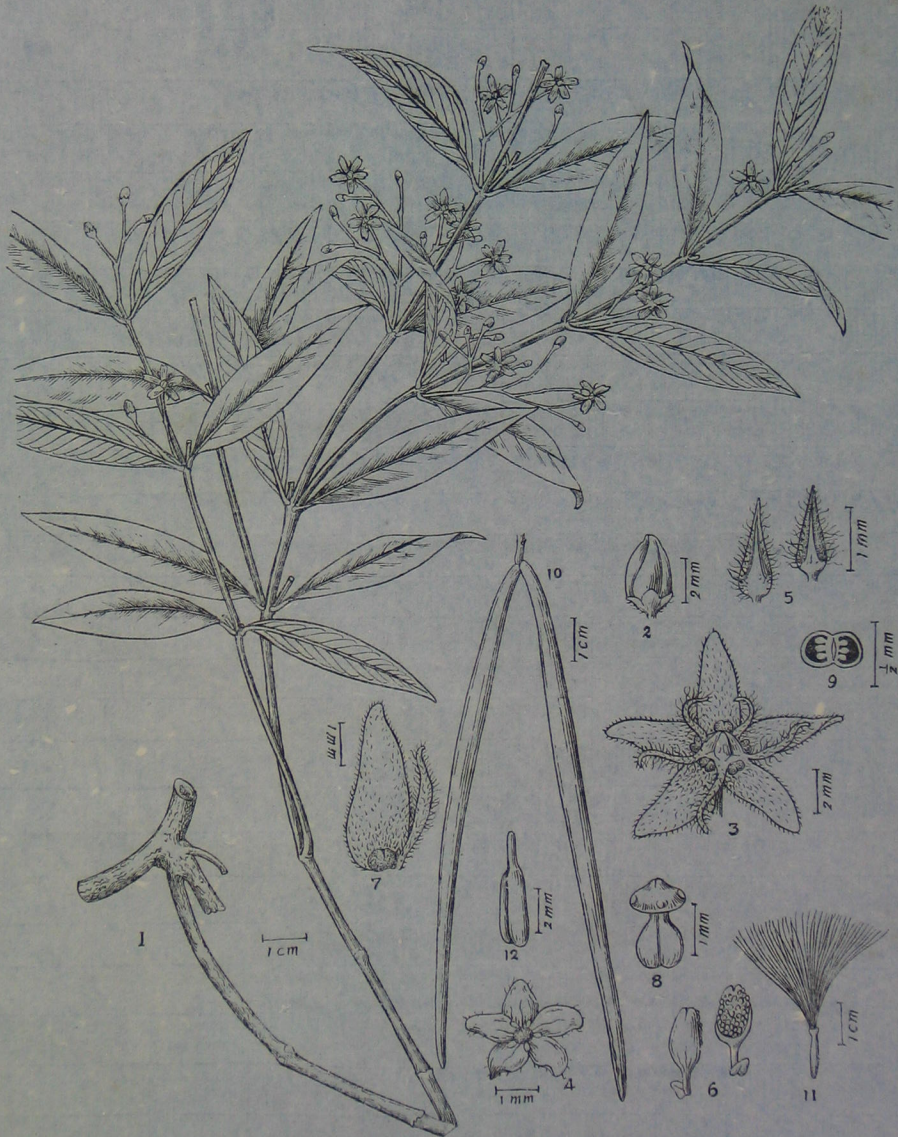
本種分布於尼泊爾，印度，及中國之貴州，湖北，雲南，四川尚為新發現。

上面，引用之標本除兩號無花外其餘均完全。著者自信其學名為正確無誤。在一九二四年時，R. Schlechter 博士曾為文發表將青蛇藤科 *Periploceaceae* 為新科。其所屬植物之花絲分離，其着生花粉之頂端發育成匙形；是項最高特化物名為協圍帶 *translator* 或 *caudicle*，花粉粒成對合分為四數個，柱頭頂端膨大成五角棒形。據上項特點，由 R. Schumani 之意則將青蛇藤為一亞科 *Periplocoideae*，有三十七屬植物分布於全世界，其分布於中國者則僅有 *Gymnothera*, *Cryptolepis*, *Streptocaulon* 擬藤藤 *Myriophoron* 蔓藤絲線科 *Periploca* 藤蛇青及 *Stemetocrypton* 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，訂定之亦甚複雜，其山橙亞科 *Plumerioideae* 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 *Plumerioideae* 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 博士提出說後二十三年間，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. 花藥之背面兩面（放大十五倍）； 6. 花粉團及粉圍帶（特別放大）； 7. 花冠裂瓣及其相傍之副冠裂片（放大十倍）； 8. 大蕊（放大十二倍）； 9. 子房橫剖面（放大三十倍）； 10. 營養莖（原大）； 11. 種子（原大）； 12. 胚（放大五倍）。



193. *Periploca calophylla* (Wight) Falconer

Plate 194.

PANAX WANGIANUM Sun.

Araliaceae.

Panax wangianum Sun. sp. nov.

Herba, perennis, circiter 47 cm. alta, caulis glabra. Folia digitatum, petioli circiter 8-10 cm. longi, glabri. Foliola 7, petioliuli 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. longis, 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.

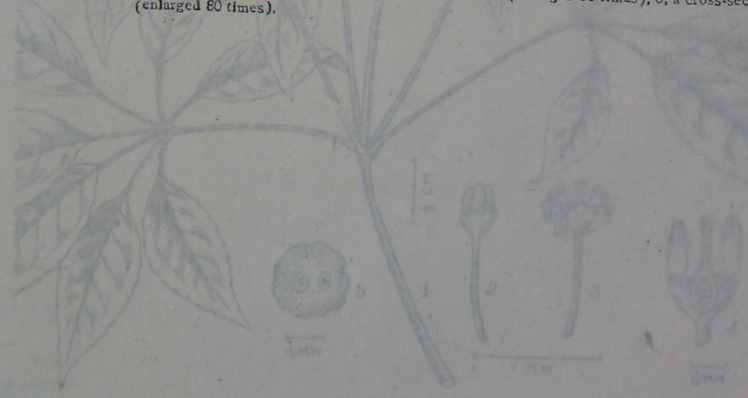
Herb, about 47 cm. or more high, stems glabrous, smooth. Leaves 5, digitate, terminal, verticillate, petiole 8-10 cm. long, glabrous. Leaflets 7, petioleule 5-15 mm. long, glabrous, blade ovate or ovate-lanceolate or lanceolate, 3.5-11 cm. long, 1.5-3 cm. broad, glabrous with scattered bristles along 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, Hsueh.

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 (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分，光滑，小葉片卵形或卵狀斜形或披針形，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，先端漸尖形，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，頂端最大，直徑約三公分；其他二枚則甚小，直徑約五至七公分，花軸長約二十五公分，光滑，上部有短柔毛，小花梗長約十二公分，有短柔毛，小苞極小，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。

產峨眉山洪崖海坪一萬一千一百四十七公尺處，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，以誌王先生對提倡植牧學之盛意。

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）。



194. *Panax wangianum* Sun

PANAX BIPINNATIFIDUS Seemen.

Araliaceae.

Panax bipinnatifidus Seemen in Journ. Bot. VI (1868), 54; Rev. Heder. (1868), 100. Harms in Engler Nat. Pflanzfam. III, no. 8 (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, petiole 5 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 (洗象池), 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 promote the healing of wounds.....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 60 times); 5, a cross section of ovary (enlarged 70 times).

圖版一百九十五

羽葉三七

五加科

草本。高約七十二公分，莖平滑，根莖水平，有甚深之橫形縱紋，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。

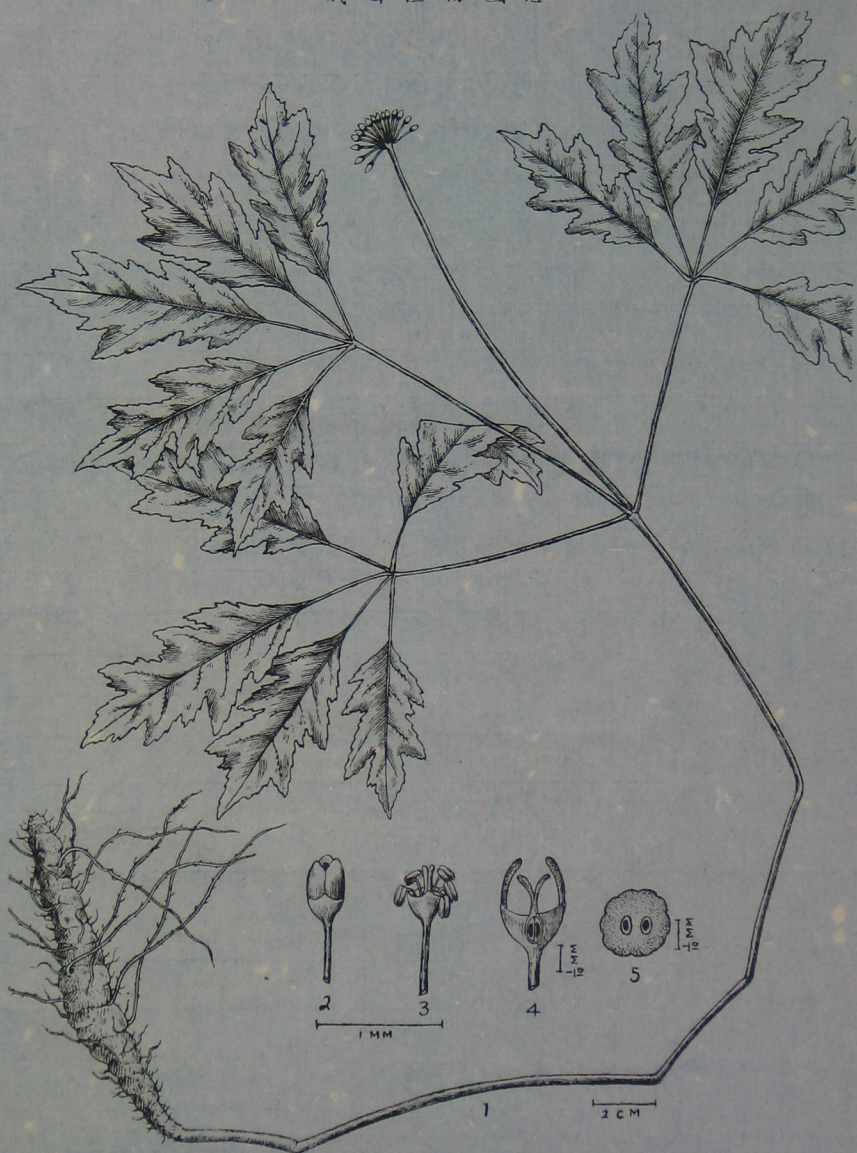
圖解： 1. 植物全形（原形四分之三）； 2. 花芽（放大三十倍）； 3. 花（放大三十倍）； 4. 花之縱剖面（放大六十倍）； 5. 子房之橫剖面（放大七十倍）。

CHUN OMEI: Hsi-chang-chip (香葉三七) in the woods, C. M. Chao, No. 12410. July 13, 1940.

This species is very rare on Mount Omei, although it is very widely distributed in Yunnan, Szechwan and Szechuan provinces. It is very easily distinguished from other species by the flattened leaflets.

The rootstock is generally used as a kind of medicine to promote the healing of wounds.

Fig. 1. Habit sketch (three 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).



195. *Panax bipinnatifidus* Seem

Plate 196

TILIA OMEIENSIS Fang;

Tiliaceae

Tilia omeiensis Fang, spec. nov. — 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 subannulate 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; stamnodes 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.

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 subannulate 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; stamnodes 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.



196. *Tilia omelensis* 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), 369, fig. 269 f-g.-Rehder & Wilson in Sargent, Pl. Wilson. II (1915), 368.-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, (1915), 420.

Tilia tuan, var. *Cavaleriei*, 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, 10-13 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 subordinate, abruptly acuminate, whitish tomentose at the lower surface, flowers yellow, sepals and pedicels densely tomentose, *C. 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，闊八至十二公分，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，長十二至十八公分，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，長三至五公分，外被星狀氈毛；內被長絨毛；花瓣五枚，卵狀披針形，長七至八公分；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，并被星狀氈毛。

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，然發現於峨眉山，尚屬首次，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* Szyszlowicz

Plate 198.

TILIA NOBILIS Rehder et Wilson.

Tiliaceae.

Tilia nobilis Rehder et Wilson in Sargent. *Pl. Wilson.* II (1915), 363. —Hu in Hu et Chnu. *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, 12-16 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, 1.8-2.5 cm. broad, rounded at the apex, abruptly contracted at the base, subsessile, 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 6, 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 15, 1939; southwest of Mount Omei, Opjen-lslen, 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 5 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，圓卵形，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

Plate 199.

BAUHINIA YUNNANENSIS Franchet.

Leguminosae.

Bauhinia yunnanensis Franchet, Fl. 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. Gef. 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; micro 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 racemose, 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 1936; 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 twice involuted tendrils and the bipartite leaves which have a long and stiff micro 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 1936; 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. Tsiung 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, Kwangtung, Hongkong.

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

圖版一百九十九

雲南羊蹄菜

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，闊有達五公分半者，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，上部有淺裂片二，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。

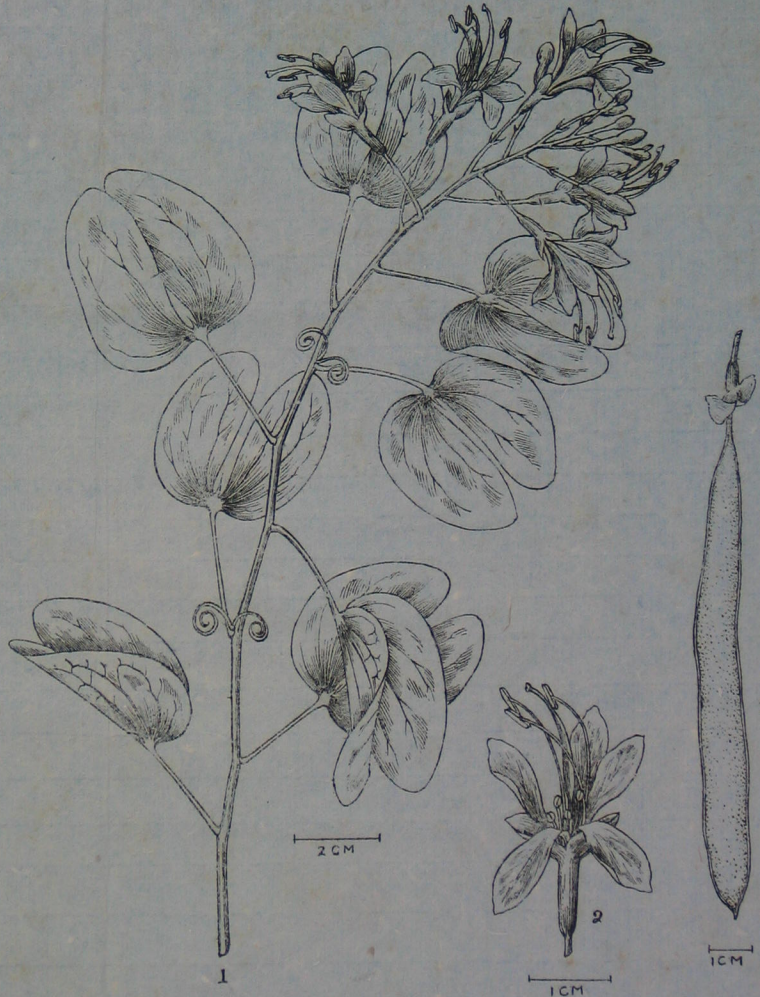
本種異於他種之點，在其狹窄之莢果，二回褶曲之捲鬚及其中具硬尖之二裂葉片。

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

川鄂羊蹄菜

此種在峨眉山之下半部甚為常見。亦產於四川巫山縣，瀘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

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 (1916), 61.- Meyer in U.S. Dept. Agric. Bur. Pl. Indust. Inv. Seeds Pl. Imp. XLIII (1918), 40708.- Rehder in Journ. Arn. Arb. VII (1926), 181.- 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 bryoniiflora* Franchet, Pl. Delavay. (1890), 191.

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

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

Bauhinia altiflora Leveille, Fl. Kory-Teheou, (1914), 228, pro parte, quoad Esquirol No. 3086 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, cylindric, pubescent; stipules linear. Flowers small, in axillary, pedunculate, 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: Opiea-hsien, S. N. Hsu, No. 71, in 1936.

Distribution: Szechuan, Kweichow, Yunnan, Kwangsi.

Fig. 1, flowering branch (natural size); 2, a flower (enlarged 5 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: Opiea-hsien, Shapang, in thickets, shrub 2-3 metres high, flowers white, C. L. Sun, No. 610, 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, Hopei, 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 8 cm. long.

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

W. P. Fang.

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；闊六尖銳，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

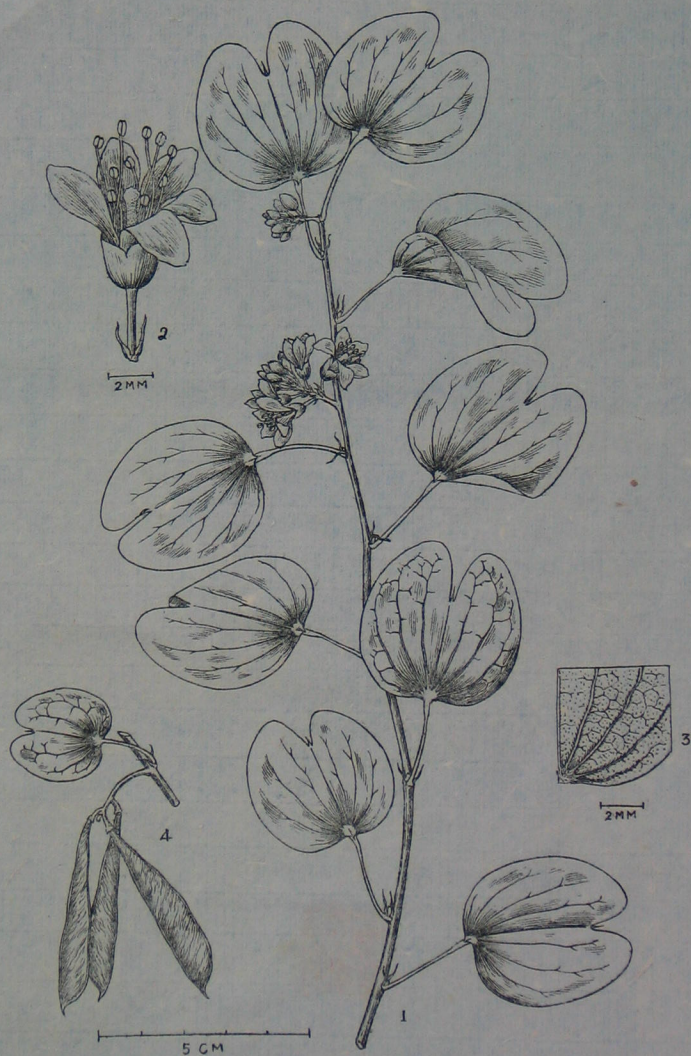
此變種產於峨邊縣沙坪壩當中，高二至三公尺，七月開花。

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，稍達二公分者，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）。





200. *Bauhinia fabri* Oliver

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；闊六尖銳，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，上被絨毛；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

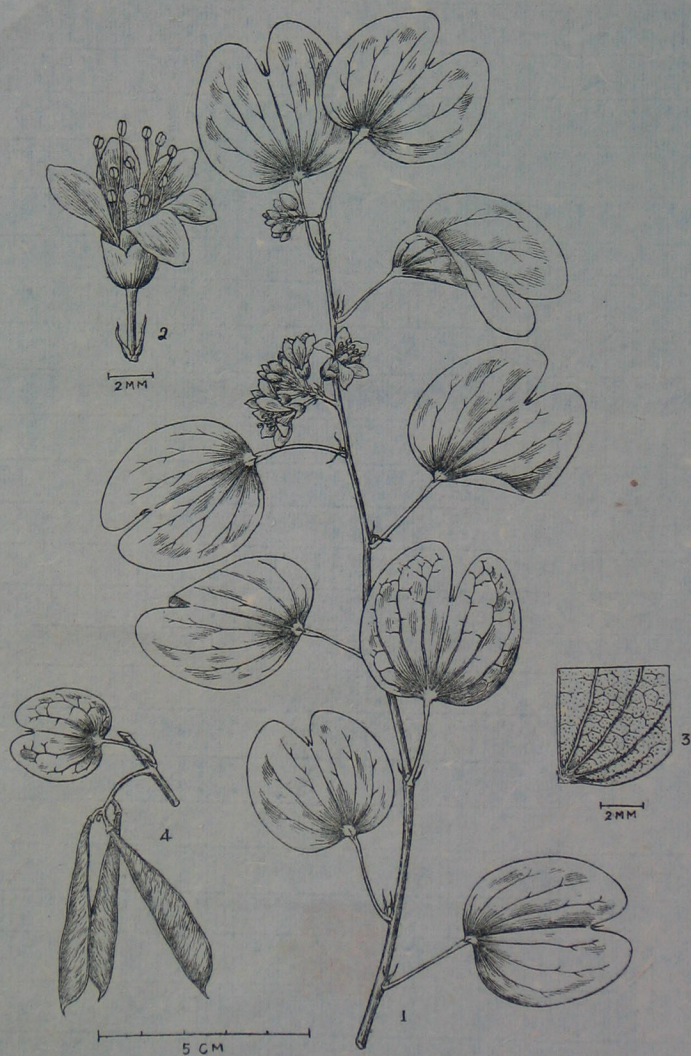
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圖解： 5. 着果及葉之枝（原大）。





200. *Bauhinia Fabrei* Oliver