

## 臺灣魚臭木屬植物之訂正

呂勝由 楊遠波

### 摘 要

本研究以形態特徵檢討本省馬鞭草科(Verbenaceae)之魚臭木屬(*Premna*)植物。結果共有5種及1未確定種。其中，恆春臭黃荊為特產於臺灣恆春半島的新種植物。其餘4種為：*Premna microphylla* Turcz., *Premna obtusifolia* R. Brown, *Premna octonervia* Merr. & Metc., 和 *Premna odorata* Blanco。由於無標本參考，將 *Premna nauseosa* Blanco 暫列為未確定種。除描述各種特徵外，並予各種之地理分佈、生態習性、花期及簡短的附註。

關鍵詞：植物分類、魚臭木屬、馬鞭草科、臺灣。

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### A Revision on *Premna* (Verbenaceae) of Taiwan

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#### [Summary]

The genus *Premna* of Verbenaceae of Taiwan is taxonomically treated in terms of morphological characters. Totally, five species are recognized, and one species is uncertain. One of the species, *Premna hengchunensis* Lu & Yang, is examined as a new taxon. The other species are: *Premna microphylla* Turcz., *Premna obtusifolia* R. Brown, *Premna octonervia* Merr. & Metc., and *Premna odorata* Blanco. The uncertain species is *Premna nauseosa* Blanco because no specimens of the species could be available for examination. For each species, a short description is provided; also included are geographical distribution, ecology, phenology, citation of exsiccatae and brief notification.

**Key Words:** Taxonomy, *Premna*, Verbenaceae, Taiwan.

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#### 一、緒 言

魚臭木屬(*Premna*)為馬鞭草科(Verbenaceae)植物之一屬，全世界約有200種(Willis, 1985)，主要分佈在亞洲與非洲熱帶，少數種類

向北延至亞熱帶，向南至大洋洲，向東至太平洋的中部島嶼。我國現知有44種5變種，主產我國南部，尤其集中在雲南地區(裴鑿、陳守良，1982)，日本有1種(Ohwi, 1965)，琉球有3種(Hatusima, 1971)，臺灣經作者等整理後，有5種

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及1疑問種，大多生長在500公尺以下地帶，只有臭黃荊(*P. microphylla*)可垂直分佈至海拔2000公尺左右(花蓮嵐山，許建昌之標本)。由於本省本屬植物生長在不同的生育地上，生態習性上的差別，引發種內各族群形態上的變異，使各學者在種的判識上有不同的結論。本研究之目的在尋求穩定之形態特徵，以為種類判識之需。

## 二、前人研究

臺灣魚臭木屬之研究，可溯至Maximowicz (1886) 根據Oldham 氏採自淡水的標本，發表為新種植物*P. formosana*; Henry (1896) 之臺灣植

物名錄記載有*P. formosana*, *P. integrifolia* L. (Takow, Henry 791 ), *P. vestita* Schauer? (Takow, Henry 381 & 765 ) 及 *P. sp.* (South Cape, Henry 613 ) 等種類；其中亨利氏765 標本經Yamamoto(1934)、李惠林(1963)鑑定為*P. odorata*；亨利氏791 & 613 標本經李惠林(1963)鑑定為*P. obtusifolia*。亨利氏之後經過Yamamoto (1934)、Kanehira (1936)、Li (1963)、Hsiao (1978)、Liu and Liao (1981)、Lu and Yang (1981)、Liu *et al.* (1988) 之努力及至本文為止。統計全部出現之學名有9個之多，茲將以往主要學名之變動列於表1，以供參考比較。

Table 1. The historical changes of the scientific names of *Premna* of Taiwan.

	Maximowicz (1896)	Henry (1896)	Yamamoto (1934)	Kanehira (1936)	Li (1963)	Hsiao (1978)	Liu & Liao (1981)	Authors (1981)	Liu <i>et al.</i> (1988)	Authors (1990)
<i>P. formosana</i>	+	+	+	+						
(= <i>P. microphylla</i> )										
<i>P. integrifolia</i>										
(= <i>P. obtusifolia</i> )										
<i>P. vestita</i>										
(= <i>P. odorata</i> )										
<i>P. microphylla</i>					+	+	+	+	+	+
<i>P. odorata</i>					+	+	+	+	+	+
<i>P. obtusifolia</i>					+	+	+	+	+	+
<i>P. octonervia</i>										+
(new record)										
<i>P. hengchunensis</i>										+
( <i>sp. nov.</i> )										
<i>P. nauseosa</i>										+
(uncertain species)										

## 三、屬之特徵(臺灣的種)

1. 葉：單葉對生於枝條上，多數為卵形、闊卵形、橢圓形，或卵狀橢圓形；葉的長度在3—7cm之間的有臭黃荊及恆春臭黃荊2種；長度在7—12(20) cm之間的有八脈臭黃荊、臭娘子及毛魚臭木等3種。

葉之質地，本省種類可區分為紙質葉的臭黃荊、恆春臭黃荊及八脈臭黃荊；葉厚紙質或亞革

質者有臭娘子、及毛魚臭木。

省產種類之葉柄長短不一，長度在0.5—1.5(2.0) cm 有臭黃荊及恆春臭黃荊，長度在1.6—6 cm有八脈臭黃荊、臭娘子、及毛魚臭木。

葉乾燥之後顏色完全變成黑色的有八脈臭黃荊，除老葉之外大部分變成黑色的有恆春臭黃荊；顏色變成黃褐色的有臭黃荊、臭娘子、毛魚臭木等。

省產各種葉背通常都被有腺體，均自然散發

特別的味道，若以手揉碎之後，則味道更為濃厚，其中以臭娘子的腺體外泌的情形最明顯，而種之間略有不同。

省產各種中，葉片二面密被柔毛的僅毛魚臭木一種，其餘各種僅具微毛或近光滑。

葉基部下延葉柄有翼的僅臭黃荊一種，其餘各種葉基部下延葉柄不具翼，而葉基由銳形、鈍圓至淺心形不等。

2.花序：本屬之花序極富變化，基本上筆者等假設密錐花序(thyrse)為本屬之原始花序，由此演化成各類之花序。根據Benson (1979)的定義，本省臭魚木屬5種植物之花序均屬於Thyrse(密錐花序類)，若仔細再分，則可區別為二類；即臭黃荊的圓錐狀密錐花序(pyramid-like thyrse)與其餘各種的繖房狀密錐花序(corymb-like thyrse)，兩者均屬較原始之花序。花序的直徑長度在3—7cm的有臭黃荊、恆春臭黃荊及八脈臭黃荊3種，而長度在(6)8—15(20)cm的有臭娘子及毛魚臭木二種。花序中密被短毛或軟毛的有恆春臭黃荊及毛魚臭木，其餘各種則被疏毛或近光滑。省產各種花序具葉狀、線狀至長卵狀小苞片，長度由12 mm至0.5 mm不等。

3.花萼、花冠：省產各種中花萼基部均連合成盃狀，多少均具有圓盾形鱗片，僅恆春臭黃荊花萼密被短毛其餘均被疏短毛，其中又僅臭黃荊及八脈臭黃荊明顯被有腺毛。花萼片均呈二唇狀，4或5齒，即使臭黃荊仔細比較亦不例外。花萼宿存，隨著果實成熟略為增大，萼齒大多變得不明顯。

花冠連合成筒狀，省產各種中，僅臭黃荊之花冠筒與花瓣長度之比為2:1，其餘各種大致為1:1。整屬而言，花冠的顏色主要有淡綠、鮮黃、紅、紫各色，本省僅有鮮黃及淡綠色二類；即臭黃荊為鮮黃色，其餘各種為淡綠色。

花冠筒內側喉部均被有單細胞長毛，僅臭黃荊兼有多細胞長毛；外側則光滑或被有疏毛，其中臭黃荊明顯被有腺毛，其餘則無。

雄蕊4枚，二強小蕊，著生於花冠筒內側，花絲長度1.3—2.5 cm。花藥二室，縱裂，花絲於花藥基部著生。

雌蕊單一，子房上位，4室，每室含1胚珠，花柱線形，具短而急尖或稍鈍的2裂柱頭。

4.果實：本屬的果實為核果，果實小，球形、卵形或略扁，具多汁而薄的外果皮以及堅硬不分裂的4室或由於不發育而為1—3室的果皮。種子圓形，種皮薄，無胚乳。

#### 四、生態、分佈與花期

本屬之植物多屬不耐陰之植物，生長於林緣、路旁、海岸叢林、荒廢地、岩石或珊瑚礁岩。本省各種植物主要垂直分佈於海拔500公尺以下地帶，僅臭黃荊僅垂直分佈可生長至2000公尺左右。

水平分佈方面，臭娘子分佈於北部、東部、南部、蘭嶼、綠島等海岸地區；臭黃荊主要分佈於北部及東部山區或低地；八脈臭黃荊分佈於恆春半島雙流、南仁山、佳洛水等地，數量不多；毛魚臭木僅見於枋寮、水底寮、新開營區附近數量不多；恆春臭黃荊為本省唯一的特產植物，分佈於恆春半島的海口、保力、關山、墾丁公園、鵝鸞鼻、貓鼻頭等叢林或珊瑚礁岩地區。開花時間一般均為4—5月左右。

#### 五、用途

木材利用方面，在恆春地區，常使用臭娘子的樹幹用來當房屋的支柱，據說該木材可防白蟻蛀食，因此經久耐用。

盆栽利用方面，本省以臭娘子及恆春臭黃荊二種用於培育盆栽的最多，其天然姿態富於變化，深獲盆栽界的喜愛，在園藝界臭娘子常以壽娘子稱之，而恆春臭黃荊則以小葉壽娘子稱呼者為多。

#### 六、種之檢索表

1. Inflorescence a pyramid-like thyrse, flowers yellow; the base of leaves decurrent. . . . . 2. *P. microphylla*.
1. Inflorescence a corymb-like thyrse, flowers greenish-white; the base of leaves not decurrent.
  2. Leaves chartaceous, the base acute, nigrescent in drying.
    3. The leaves 4—7 cm long; petioles 0.6—1.5 (—2.2) cm long, pubescent. 1. *P. hengchunensis*.
    3. The leaves 8—13 cm long; petioles 1.7—3.7 cm long, glabrate. . . . . 4. *P. octonervia*.
  2. Leaves thick chartaceous or subcoriaceous, the base rounded to

- subcordate, brown in drying.
- 4. Leaves densely softly pubescent. . 5. *P. odorata*.
- 4. Leaves ovate, elliptica, somewhat glabrous. . . . . 3. *P. obtusifolia*.

七、分類處理

1. *Premna hengchunensis* Lu & Yang, sp. nov.

恆春臭黃荊(Fig. 1)

Suffrutex v. arbor 1 — 5 m altus. Folia chartacea, ovata ad ellipticum, 4—7 cm longa, 2 — 3.8 cm lata, apice abrupte acuta v. acutocuspida, venis lateralibus 5—7 binatis; petiolis pubescentibus, 0.6 — 1.5 (— 2.2) cm longis. Inflorescentia terminalis, corymbo-thyrsoidea, 3 — 6 cm in diametro. Calyx cupuliformis, labiatus, 4 — 5 dentatus. Corolla grabrata, 3.5 — 4 mm longa, tubo 1.5 — 2.0 mm longo. Drupa globosa, circa 5 mm in diametro.

A shrub or small tree 1—5 m height, grayish, branches brown grayish, pubescent on young vegetative parts and inflorescences, later becoming glabrescent. Leaves opposite, petiolate, chartaceous, ovate to elliptic, 4—7 cm long, 2—3.8 cm wide, obtuse to abruptly acute or acutecuspitate at the apex, acute at the base, entire or slightly repand or remotely serrate above, glabrous on both side, sparsely glandula punctate beneath, the midrib slightly raised above, conspicuously raised beneath, puberulent on both side, the lateral veins of 5—7 pairs, usually nigrescent in drying; the petioles 0.6—1.5 (—2.2) cm long, pubescent. Inflorescence in a terminal corymb-like thyrse, 3—6 cm in diameter; bracteoles leaf-like or linear, 0.5—1.2 mm long; flowers small, greenish white; calyx cup-shaped, 2-lipped, 4-or 5-lobed, pubescent, punctate; corolla glabrate outside, villous inside at throat, 3.5—4 mm long, 4-lobed in two lips, the lobes orbicular, obtuse, the tube 1.5—2.0 mm long; stamens 4, didynamous. Drupes globose dark-purple, about 5 mm in diameter.

Distribution: Endemic.

Specimens examined: Pingtung Co.: Guan-shan, Hengchun (恆春) *Lu* 19214 [Holotype at

TAIF, Isotypes at K, L, TAI, TI.] Hai-koou (海口) *Lu* 19222 [TAIF].

*Premna hengchunensis* is closely related to *Premna microphylla* by their similar leaf size and shape. the former differs from the latter in having inflorescence corymbose-thyrsoid, leaves without decurrent base and usually nigrescent after drying, and corolla greenish-white and without glandular hairs.

Note : 本種植物與臭黃荊有些類似。臭黃荊分佈臺灣北部、東北部及花蓮一帶，而本種則僅見於臺灣南端恆春一帶，在地理分佈上有明顯的隔離現象。惟本種之葉基沒有下延，柄無翼，花序為繖房狀密錐花序，且淺綠色花冠筒沒有腺毛。

2. *Premna microphylla* Turçz. in Bull. Soc. Nat. Mosc. 36 (2):217. 1863; Li, Woody Fl. Taiwan 830. f. 333. 1963; Ohwi, Fl. Japan 765 1965.; Hatusima, Fl. Ryukyus 522. 1971; Hsiao in Li et al. Fl. Taiwan 4:428. 1978; Liu et al., Trees of Taiwan 775. 1988; Liu & Liao, Dendrology 862. 1981. *pro part.*; Pei in Fl. Reip. Pop. Sin. 65(1):88. 1982. 臭黃荊(小葉魚臭木)(Fig. 2)

*Premna japonica* Miq., Ann. Mus. Bot. Lugd.-Bat. 2:97. 1863.

*Premna formosana* Maxim. in Mel. Biol. 12:512. 1886; Kanehira, Form. Tree rev. ed. 655. 1936.

A tree, glabrous. Leaves ovate to oblong, 5—7 cm long, 1.8—3.5 cm broad, obtus to abruptly acute at the apex, acuminate, decurrent at the base; the margins entire to remotely serrate above, the lateral veins of 5—7 pairs; petioles about 1.5 cm long, winged. Inflorescence in pyramid-like thyrse, with linear bracts 2—3 mm long; calyx more or less 2-lipped, 4-or 5-lobed; corolla yellow, 5—12 cm long, densely glandula haire outside. Drupes globose, dark-purple, about 5 mm across.

Distribution: China, Japan, and the Ryukyus. Taiwan, in the northern and eastern parts of the island.

Specimens examined: Taipei Co.: Chih-sing-shan (七星山) *Lu* 16178 [TAIF]; Ta-tung-shan (大屯山) ~ Tan-shui(淡水), *Lu* s.n. [TAIF], *Shie* 1181 [TAIF]; Jwu-tzyy -hwu (竹子湖). *Lu* 19425 [TAIF]. Hualien Co.: Lan-shan (嵐山),

*Hsu, Chien-chang s.n.* [TAI], Sheau-ching-shui (小清水) *Lu 19297* [TAIF].

Note: 本植物具有下列特徵: 明顯的落葉性, 葉片基部下延, 葉柄有翼, 花序為圓錐形的密錐花序(pyramid like thyrse), 花冠黃色密被腺毛等, 與其他植物容易辨別。筆者等參考中國大陸的標本(廬山, *H. C. Chea No. 154*), 日本的標本(Isl. Tsushima, *H. Ohashi & K. Sohma No. 10634*), 琉球的標本(Isl. Iriomote, *Takashi Yamashita No. 176 & Masamune No. 272*), 比對結果明白本植物為廣泛分佈者。筆者等讀同李惠林(1963)的意見合併 *Premna formosana* Maxim. 為 *Premna microphylla* Turcz. 的異名。

據筆者等觀察本種植物之萼齒為4或5裂, 呈2唇狀而非整齊的5裂, 此與本省其餘4種植物並無顯著差別, 不宜做為分類的依據。

3. *Premna obtusifolia* R. Brown, Prodr. Fl. Nov. Holland. 512. 1810; Li, Woody Fl. Taiwan 830. 1963; Hsiao in Li *et al.*, Fl. Taiwan 4:428. 1978; Chang in Journ. Phyt. Taxon. 29(1):18. 1981; Liu & Liao, Dendrology 862. 1981; Liu *et al.*, Trees of Taiwan 775. 1988; Moldenke & Moldenke in Dassanayake, Fl. Ceylon. 334. 1983. 臭娘子(牛骨仔樹) (Fig. 3)

*Premna integrifolia* L. var. *obtusifolia* (R. Brown) P'ei in Mem. Sci. Soc. China 1(3):75. 1932.

*Premna integrifolia* L., Mant. Imp. 1, 2: 252—253. 1771.

*Premna corymbosa* (Burm. f.) Rottle. & Willd., Ges. Naturf. Freunde Berlin neue Schriftens. 2, 4:187 & 188. 1803.

A tree or shrub, subglabrous. Leaves nearly glabrous, oblong to oblong-ovate, subcoriaceous, 6—12 cm long, 4—6 cm broad, obtuse to short-acuminate at the apex, rounded to subcordate at the base, entire, densely glandular beneath, darker brown in drying, the lateral veins of 4—7 pairs; petioles 1—3.5 cm long. Inflorescence in terminal corymb-like thyrse; flowers small, greenish-white rather unpleasantly aromatic; calyx 2-lipped, with 4 or 5 minute lobes; corolla obscurely 4-lobed, 2-lipped, the tube about 3.5—4 mm long. Fruit globose, dark-purple, about 7 mm across.

Distribution: Tropical Asia to Australia. Taiwan, widely distributed in lowlands and

along coastal regions.

Specimens examined: Taipei Co.: Keelung (基隆), *lu 17042* [TAIF]. Ping-tung Co.: Eh-bdai-hai, Heng-chun (恆春, 啞吧海) *Lu 18552* [TAIF]; Kenting (墾丁), *Lu 18538* [TAIF]; Er-luan-byi (鵝鑾鼻), *Lu 19232, Lu 17293* [TAIF]; Maun-jou (滿洲), *Lu 19272* [TAIF]. Taitung Co.: Lan-yeu (蘭嶼), *Lu 18427*; San-shian-tai (三仙台), *Lu 19324* [TAIF].

Note: Fosberg (1953) 曾經對於 *Premna obtusifolia* R. Brown 名制(nomenclature) 的問題詳細的討論過。他對於本植物持廣義種的看法, 同時列舉 *P. integrifolia* L., *P. serratifolia* L., *P. corymbosa* (Burm. f.) Rottl. & Wild. ex Merrill 等重要的異名。Moldenke and Moldenke (1983) 於 Flora of Ceylon 中曾列舉 *P. obtusifolia* R. Brown 的異名共有41個以上之多, 他對於本植物也持廣義的意見, 種以下的分類群, 除承名變種 var. *obtusifolia* 外, 另有 var. *minor*, var. *pubescens* 及 f. *serratifolia* 等, 同時他並指出該原種植物 (typical form) var. *obtusifolia* 分佈於泰國、中國南部、模里裘斯、馬達加斯加、莫三鼻克、坦桑尼亞、琉球、臺灣、菲律賓及大部分太平洋島嶼以南至澳洲等地區。筆者等觀察臺灣全省各地的標本, 發現它的葉形、葉的大小及毛的多少, 呈現若干連續性的變異, 無法極明確的再區分之, 因此筆者等讀成本種以廣義種處理為宜。

4. *Premna octonervia* Merr. & Metc. in Journ. Arn. Arb. 20: 354. 1939; Lu & Yang in Taiwania 25: 123. 1980; Pei in Fl. Repi. Pop. Sin. 65(1): 95. 1981. 八脈臭黃荊 (Fig. 4)

*Prema acuminatissima* Merr. in Lingn. Sci. Journ. 6: 284. 1928. non Merr. (1924).

Small tree, 4—6 m high; twigs glabrous. Leaves chartaceous, ovate or elliptic-ovate, 8—13 cm long, 3—6 cm wide, acuminate, entire, with 6—8 lateral veins. conspicuously nigrescent in drying; petioles 1.5—3.7 cm long. Inflorescences in terminal corymb-like thyrse, with linear bracts; peduncles pubescent. Calyx cup-like, obscurely 4 or 5-lobed, pubescent, punctate; corolla greenish-white, glabrous outside, villous inside at throat, 3.5—4.5 mm long, 4 lobed in two lips; lobes long-orbicular, obtuse; stamens 4, didynamous. drupes globose, dark-purple, about 5 mm in diameter.

Distribution: Hainan and Taiwan.

Specimens examined: Pingtung Co.: Nan-jen-shan (南仁山), *Lu 19231 & 7102* [TAIF], Jia-louh-shui (佳洛水), *Lu 19237 & 19239* [TAIF], Shuang-liou (雙流), *Wang s. n.* [TAIF].

Note: 本植物為作者等(Lu and Yang 1980)發表的臺灣新紀錄植物。所採集的標本與採於海南島的標本(H.Fung, 20387)比對結果證實屬同種植物無誤。

5. *Premna odorata* Blanco Fl. Filip. 488. 1837; Yamamoto in Journ. Soc. Trop. Agr. 6: 554. 1934; Kanehira, Form. Trees rev. ed. 654. f. 610. 1936. *pro part.*; Li, Woody Fl. Taiwan 830. 1963. *pro part.*; Hsiao in Li *et al.*, Fl. Taiwan 4:430. 1978; Liu & Liao, Dendrology 862. 1981. *pro part.*; Liu *et al.*, Trees of Taiwan 775. 1988. *pro part.* 毛魚臭木(Fig. 5)

*Premna vestita* Schauer in DC., Prodr. 11:631. 1847; Henry in Trans. Asiat. Soc. Form. 24. Suppl.70. 1896 (List Pl. Form.)

A small tree, softly pubescent. Leaves ovate to oblate-oblong, 10—12 cm long, 6—7 cm broad, acuminate or abruptly acute at the apex, obtuse, rounded or somewhat cordate at the base, the margins entire or crenulate, softly pubescent on both surface especially beneath, the lateral veins of 6—8(9) pairs; petioles 1.3—3.5 cm long. Inflorescence in terminal corymb-like thyrse. Flowers greenish-white; calyx-rim usually 2-lipped, with 4 or 5 lobes; corolla 3.3—3.6 cm long, glabrate. Drupes globose, fleshy, dark-purple, about 6 mm across.

Distribution: The Philippines. Taiwan, in the southern parts of the island.

Specimens examined: Pingtung Co.: Fang-lian (枋寮) *Chiw, s.n.* [TAIF]; *Lu 18637 & 18631* [TAIF]; Shui-dii-liou (水底寮), *Lu 19224* [TAIF].

Note: 本植物於本省最早的採集紀錄為1896年 Henry 氏記載於其 A list of plants from formosa 編號765 的標本。該標本曾被李惠林(1963)引用，目前保存於美國哈佛大學 Arnold Arboretum 的標本館中，筆者等承該館提供的圖片、資料顯示與原始描述吻合。

西元1985年，林業試驗所邱文良在枋寮再次

採到該植物，同年及次年第一作者於枋寮、水底寮及新開營區附近陸續發現，所採集的標本經筆者等仔細與產於菲律賓、呂宋島的標本(*J. Tadema 5259-2 & D. R. Mendoza s. n.*)比對結果，確定屬於 *P. odorata* Blanco 無誤。

6. *Premna nauseosa* Blanco, Fl. Filip. ed. I. 489; Hatusima, Fl. Ryukyus 522. 1971.

本植物主要產於菲律賓(Merrill, 1912)。據 Hatusima (1971)於琉球植物誌中記載琉球(石垣)及臺灣(紅頭嶼)亦有分佈。筆者等尚未見到任何採自本省的該種植物標本，故暫列為未確定種。

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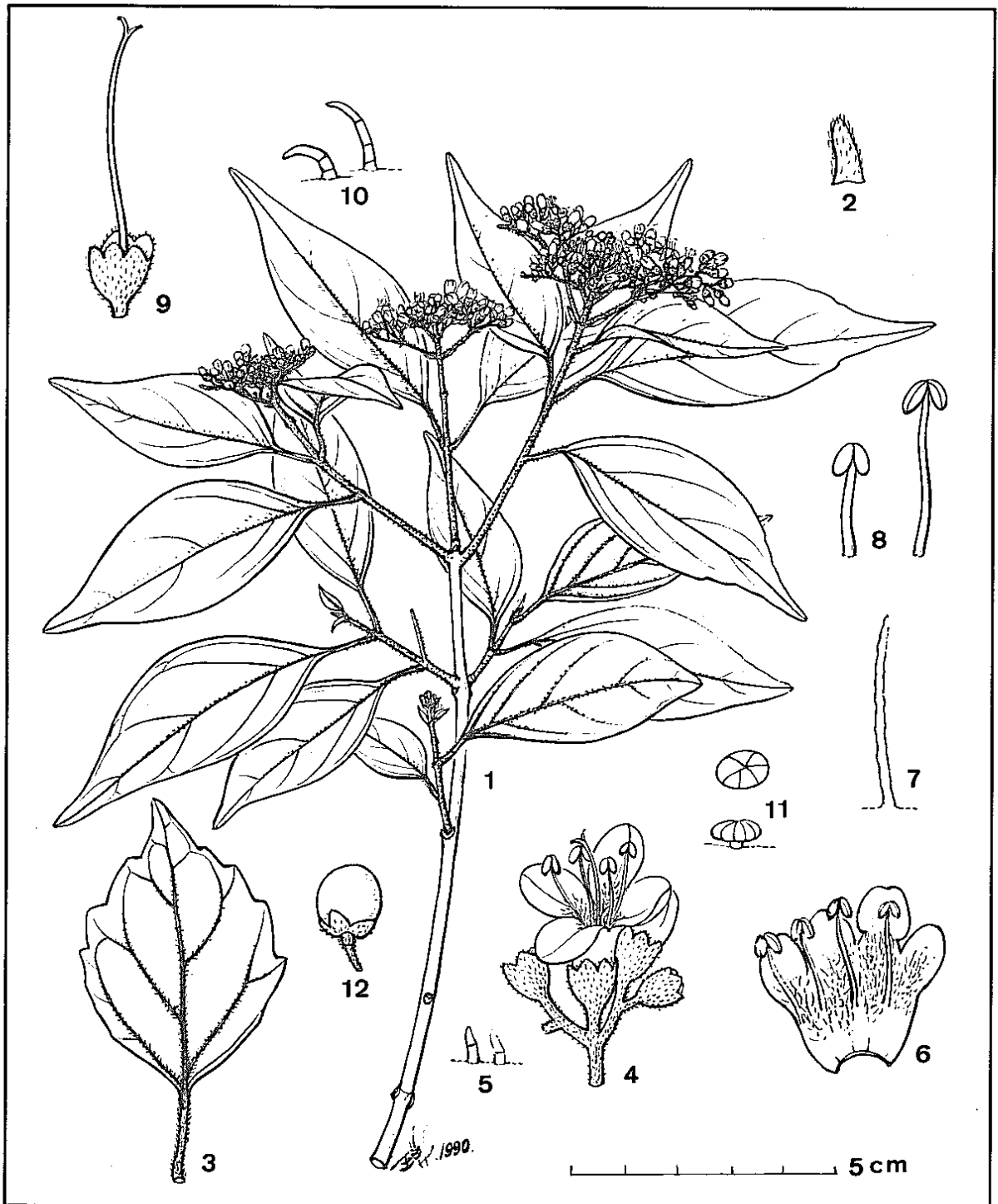


Figure 1. *Premna hengchunensis* Lu & Yang 1. Flowering branch. 2. Bracteole. 3. Leaf. 4. A part of inflorescence. 5. Uniseriate hairs. 6. Corolla with stamens 7. Unicellular hair. 8. Stamens 9. Calyx and pistil 10. Uniseriate hair. 11. Round-peltate scales. 12. Drupe.



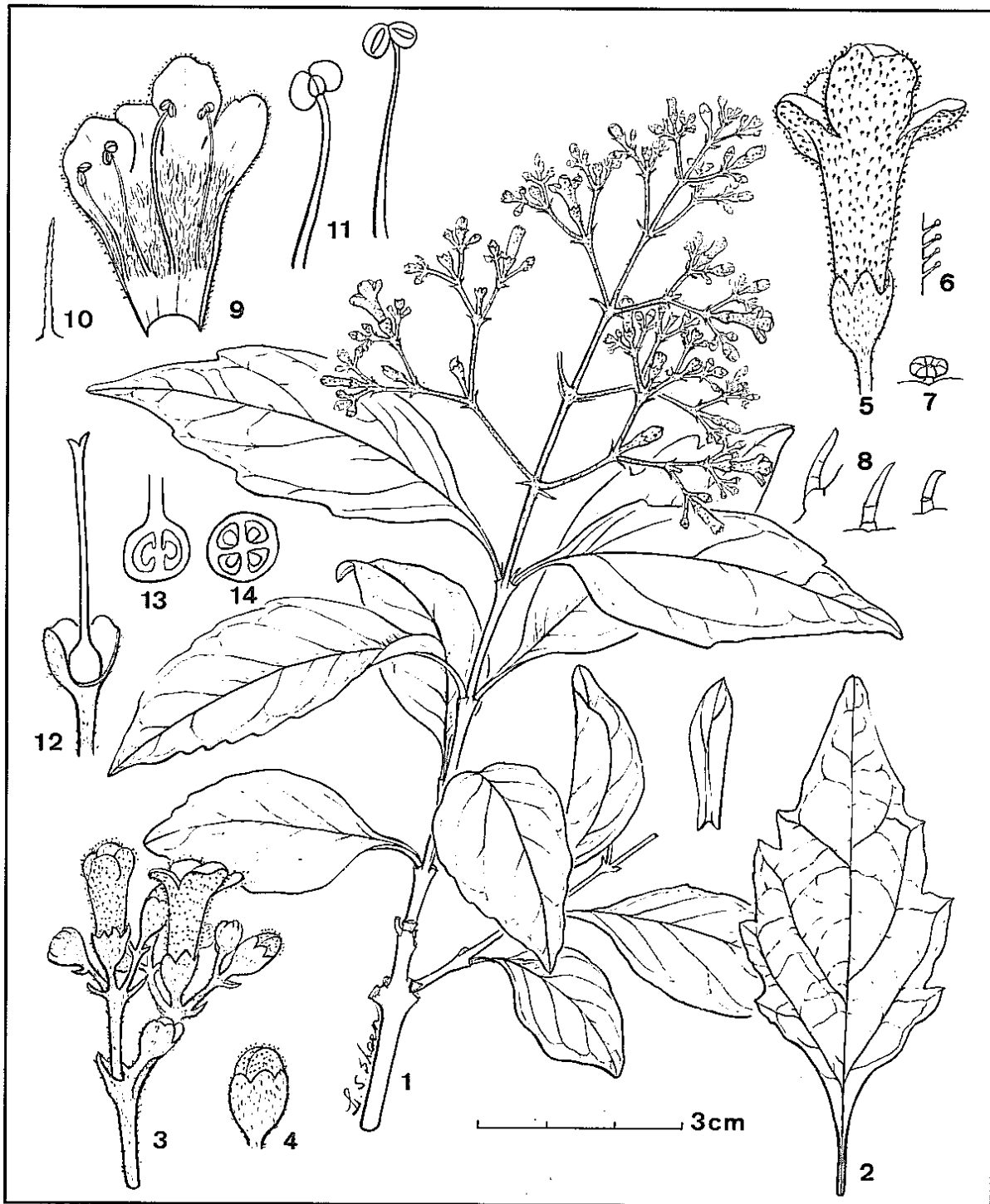


Figure 2. *Premna microphylla* Turcz. 1. Flowering branch. 2. Leaf. 3. A part of inflorescence. 4. Flower bud. 5. Flower. 6. Glandular hair. 7. Round-peltate scale. 8. Uniseriate hairs. 9. Corolla with stamens. 10. Unicellular hair. 11. Stamens. 12. Pistil. 13. Longitudinal-section of ovary. 14. Cross section of ovary.

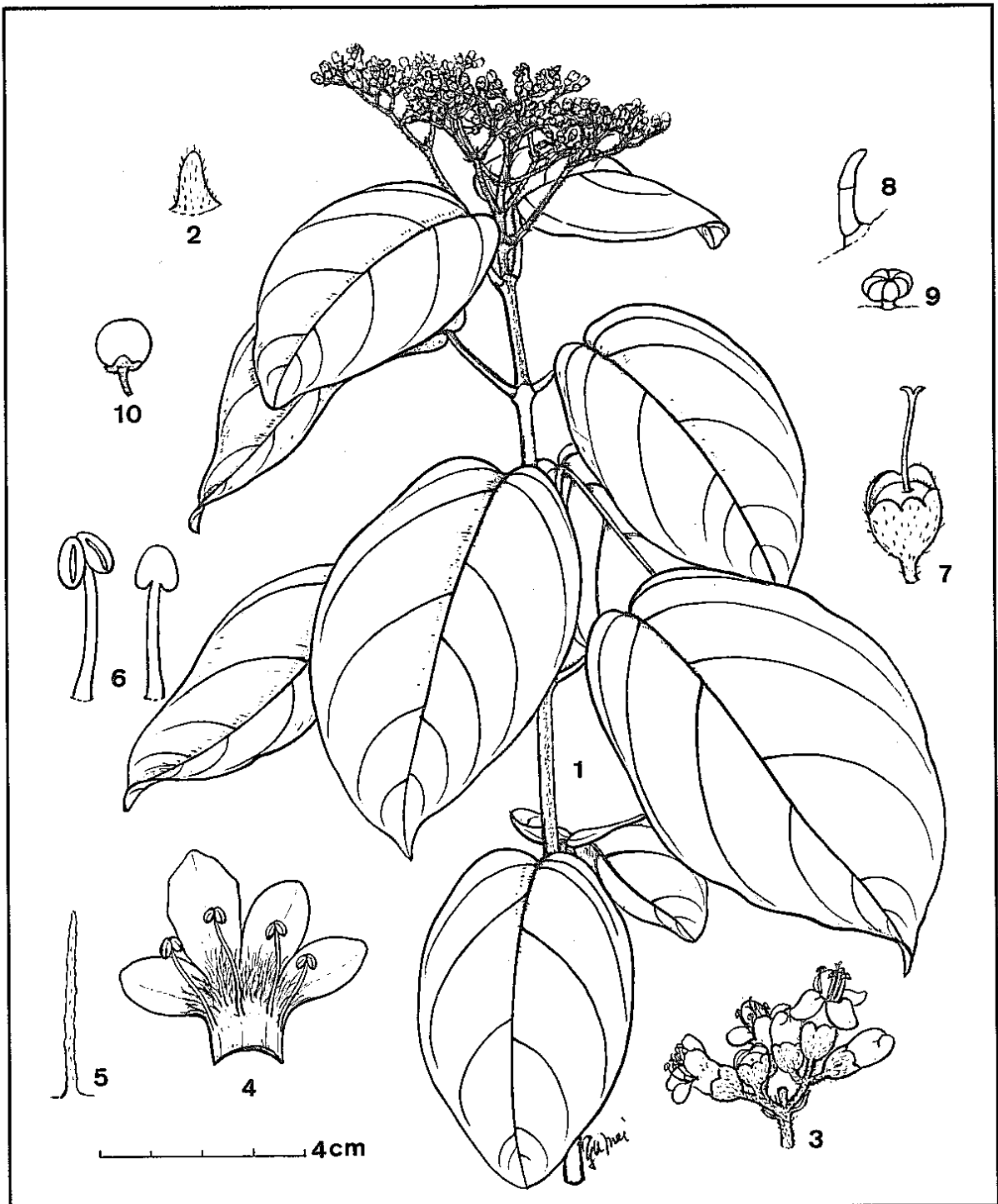


Figure 3. *Premna obtusifolia* R. Brown 1. Flowering branch. 2. Bracteole. 3. A part of inflorescence. 4. Corolla with stamens. 5. Uniseriate hair. 6. Stamens. 7. Calyx and pistil. 8. Uniseriate hair. 9. Round-peltate scales. 10. Drupe.

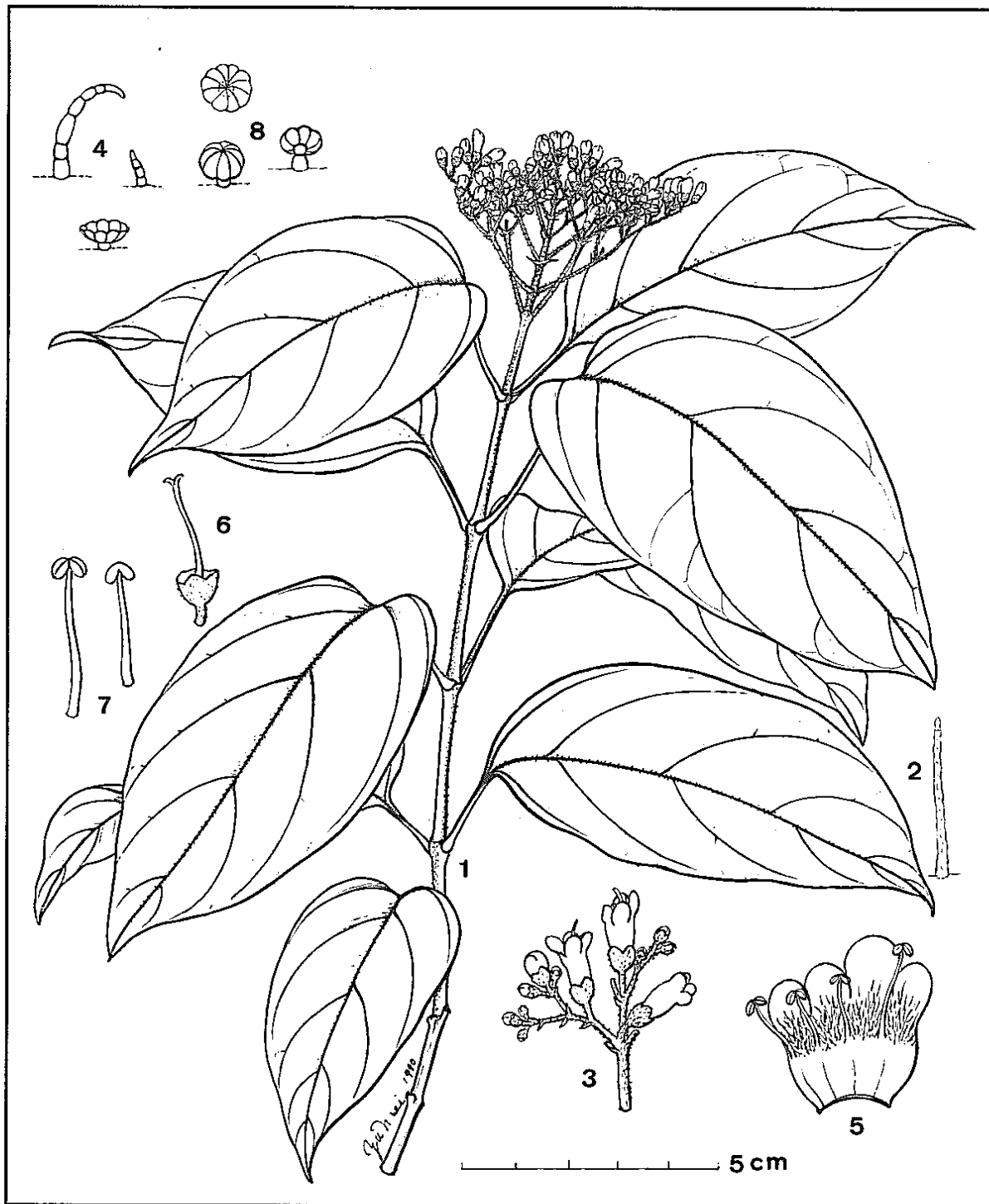


Figure 4. *Premna octonervia* Merr. & Metc. 1. Flowering branch. 2. Leaf base. 3. Flower bud. 4. Flower. 5. Corolla with stamens. 6. Pistil. 7. Stamen. 8. Drupe.

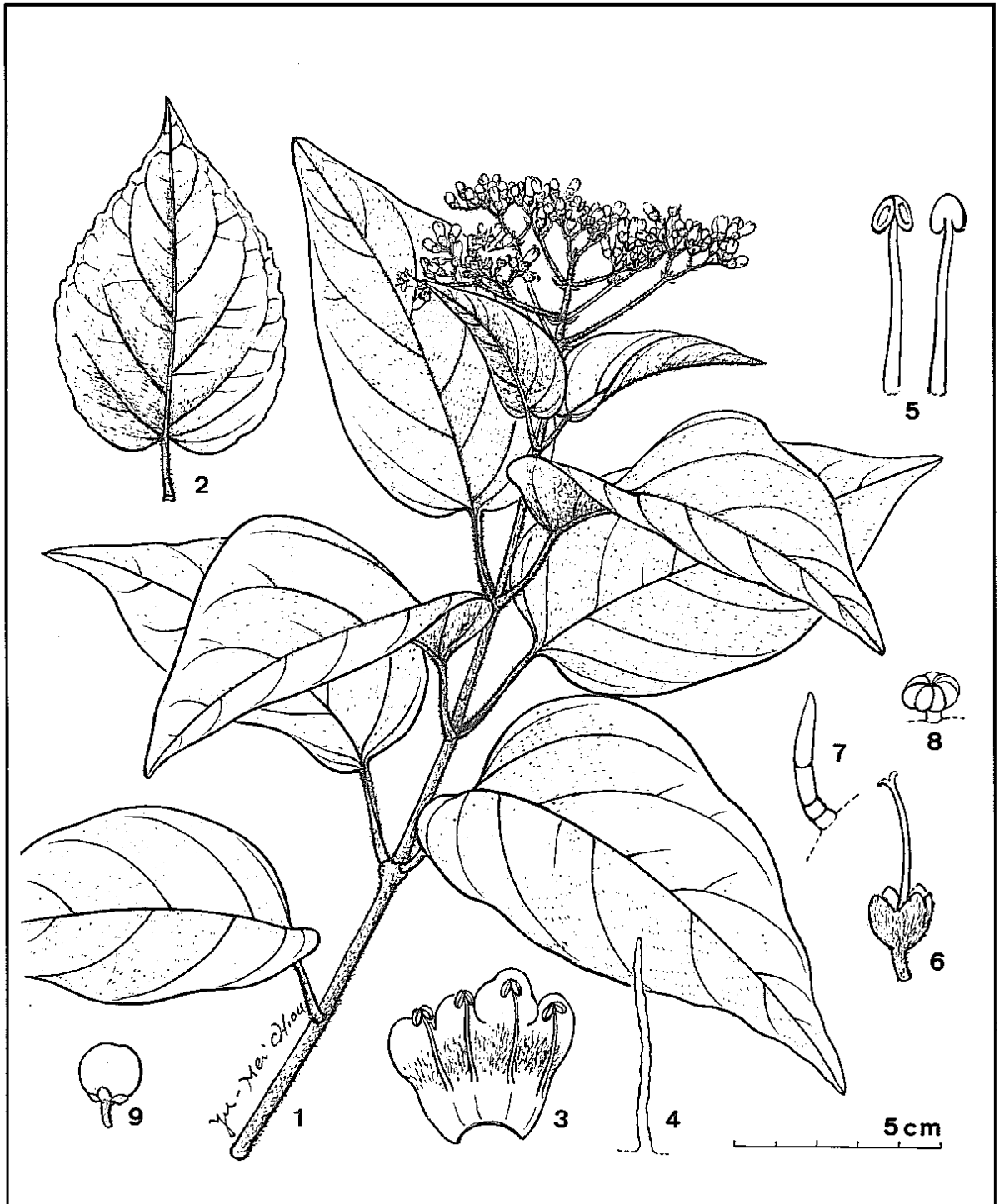


Figure 5. *Premna odorata* Blanco 1. Flowering branch. 2. Leaf. 3. Corolla-with stamens. 4. Unicellular hair. 5. Stamens. 6. Calyx and pistil. 7. Uniseriate hair. 8. Round-peltate scale. 9. Drupe.