

广西野生苏铁资源及其分类研究(二)

韦发南 梁健英 何顺清

(广西壮族自治区广西植物研究所, 桂林 541006)
中国科学院

STUDIES ON THE RESOURCES AND CLASSIFICATION OF THE WILD CYCADS FROM GUANGXI (II)

Wei Fanan Liang Jianying He Shunqing

(Guangxi Institute of Botany, Guangxi Zhuangzu Autonomous Region and Academia Sinica, Guilin 541006)

本文除了对已发表的锈毛苏铁(*Cycas ferruginea* F. N. Wei)作补充描述外,还报道了两个新种,即长孢苏铁(*C. longisporophylla* F. N. Wei)和刺孢苏铁(*C. spiniformis* J. Y. Liang)。

关键词 苏铁新种;锈毛苏铁;长孢苏铁;刺孢苏铁

Key words New species of *Cycas*; *Cycas ferruginea*; *C. longisporophylla*; *C. spiniformis*

锈毛苏铁(广西植物) 图1

Cycas ferruginea F. N. Wei in Guihaia 14: 300, with fig. 1994; D. Y. Wang in Cycads in China 76, under *C. miquelii* O. Warburg, as syn. nov. 1996.

补充描述

茎高54 cm,直径约15 cm,明显具叶痕,基部膨大。叶羽状全裂,长达2 m,宽40~60 cm;叶柄粗壮,长50~70 cm,与叶轴幼时密被、老时疏被易脱落的锈色或黑色长绒毛,或老时变无毛,全部具刺或中部以上具刺,极少无刺;刺长约3 mm,每边15~21枝;羽片通常每边56~80片,厚革质,线状披针形,初时直而后呈镰状,长20~30 cm,宽1~1.4 cm,先端长渐尖,基部几乎不下延或有时具短柄,初时在背面密被易脱落的锈色长绒毛,后变无毛,边缘强度背卷,中脉在两面极隆起。雄球花生时圆柱形,黄褐色,长20~35 cm,径6~10 cm;柄长约10 cm;小孢子叶楔形,生时长2.5~3 cm,上部宽约1.5 cm,干时长2~2.5 cm,宽约1 cm,先端具易脱落的短喙,不育区密被锈色短绒毛。大孢子叶生时长12~13 cm,两面密被锈色长绒毛,顶片生时卵状菱形,边缘深羽裂,长5~6 cm,宽2.5~4.5 cm,干时卵形,长4~5.5 cm,宽2~3.5 cm,中央部分卵状椭圆形,宽约1.5 cm;顶生裂片长1.5~2 cm,先端3浅裂,略长于侧生裂片并与侧生裂片生时软而干后稍变硬;侧生钻状裂片每边8~13枚,偶尔先端分叉;柄状部分两侧各有胚珠2颗;种子卵形,生时长约2.3 cm,直径1.5 cm(未成熟),无毛,略偏。花期5~6月,果期10月。

广西: 桂林植物园栽培(种苗采自广西西南部龙州石灰岩山上), 1994—8—31, 韦发南 2220(主模式, 雌花 IBK); 同地, 韦发南 1986(带锈毛的幼叶, IBK); 同地, 1995—05—25, 韦发南 2233(雄花, IBK)、2234(雄花, IBK)、2235(雄花, IBK)。

本种尽管被某学者当作石山苏铁(*Cycas miquelii* O. Warburg)的同物异名, 但我仍然认为是个好种, 因它具有以下几个特点容易与其他种类相区别。首先是它的叶柄、叶轴及羽片在幼时极密被锈色绒毛, 即使在成熟的叶轴上仍可见到毛的存在, 宿存的毛逐渐变为黑色; 其二, 叶特别长, 长可达 2 m, 宽 40~60 cm, 羽片长达 30 cm, 厚革质, 边缘强度反卷, 基部几不下延或收缩成短柄; 其三, 大孢子叶除裂片先端外, 其余的, 包括柄状部分均密被永不脱落的锈色绒毛, 裂片生时柔软, 干后稍变硬。由于没有标准的标本可作对照, 目前中、外学者对石山苏铁的认识是十分模糊和混乱的。按照多数人的理解, 这个种(我认为是复合体)叶柄、叶轴及羽片幼时密被淡褐色绒毛, 后变无毛或完全无毛, 叶较锈毛苏铁短得多, 一般长约 1 m, 宽 30~34 cm, 羽片质地亦薄得多, 为革质, 边缘平坦或稍背卷; 大孢子叶背面被疏毛或中部以下被毛或仅脊上被毛, 里面无毛或仅基部以下被毛, 裂片生、干都坚硬, 刺手。大孢子叶外观颜色亦因毛被稀密不同和被毛的部位不同而有很大差异, 锈毛苏铁由于整个大孢子叶密被永不脱落的锈色毛而在生、干时都是锈色; 雄球花生时黄褐色, 直立, 直至腐烂才倒下。而石山苏铁大孢子叶背面被毛的部位为褐色, 毛被极稀疏或无毛的部位生时为青绿色; 雄球花生时淡黄色, 成熟时倒伏。

Descriptiones addendae

Truncus c. 54 cm altus et c. 15 cm in diam., conspicue cicatricatus basi inflatus. Folia pinnatisecta, usque ad 2 m longa et 40~60 cm lata; petiolis robustis, 50~70 cm longis cum rachidibus in juventute dense facile caducoque ferrugineo—vel nigro—tomentosis et in maturitate sparse facile caducoque ferrugineo—vel nigro—tomentosis vel glabrescentibus, omnino spinosis vel supra medium sparse spinosis, raro inermibus; spinis c. 3 mm longis, utrinsecus 15~21; foliolis frondium saepe utrinsecus 56~80, crasso coriaceis, lineari—lanceolatis, primo strictis, postea falcatis, 20~30 cm longis, 1~1.4 cm latis, apice longe acuminatis, basi fere indecurrentibus vel interdum breviter petiolulatis, primo subtus dense facile caducoque ferrugineo—tomentosis, postea glabris, margine revolutissimis, costa media utrinque elevatissima. Strobilus masculus in vivo luteo—brunneus, cylindricus, 20~35 cm longus, 6~10 cm in diam., pedunculo c. 10 cm longo; microsporophyllis cuneiformibus in vivo 2.5~3 cm longis, superne c. 1.5 cm latis, in sicco c. 2~2.5 cm longis, c. 1 cm latis, apice caduce rostratis; areis sterilibus dense ferrugineo—velutinis. Macrosporophylla in vivo 12~13 cm longa, utrinque dense ferrugineo—tomentosa; lamina terminali sterili in vivo ovato—rhombica, profunde pinnatifida, 5~6 cm longa, 2.5~4.5 cm lata, in sicco ovata, 4~4.5 cm longa et 2.5~3.5 cm lata; parte centrale ovato—elliptica, c. 1.5 cm lata; segmentis lateralibus utrinsecus 8~13, forte furcatis; lobis terminalibus 1.5~2 cm longis, apice 3—lobatis, segmentis lateralibus leviter longioribus, in vivo cum eis mitibus et in sicco leviter duris; ovulis 4 in utroque. Semina ovoidea, in vivo c. 2.3 cm longa c. 1.5 cm in diam. (imm.), glabra, leviter compressa. Floret 5~6, fructificat 10.

Guangxi: Guilin Botanical Garden, cultivated, introduced from Longzhou county, southwest of Guangxi, near Vietnam, 1994, 8. 31, Wei Fanan 2220 (Holotypus, fl. fem. IBK), 1986 (young leaf, IBK), same locality, 1995. 5. 25, Wei Fanan 2233 (fl. mas. IBK), 2234 (fl. mas. IBK), 2235 (fl. mas. IBK).

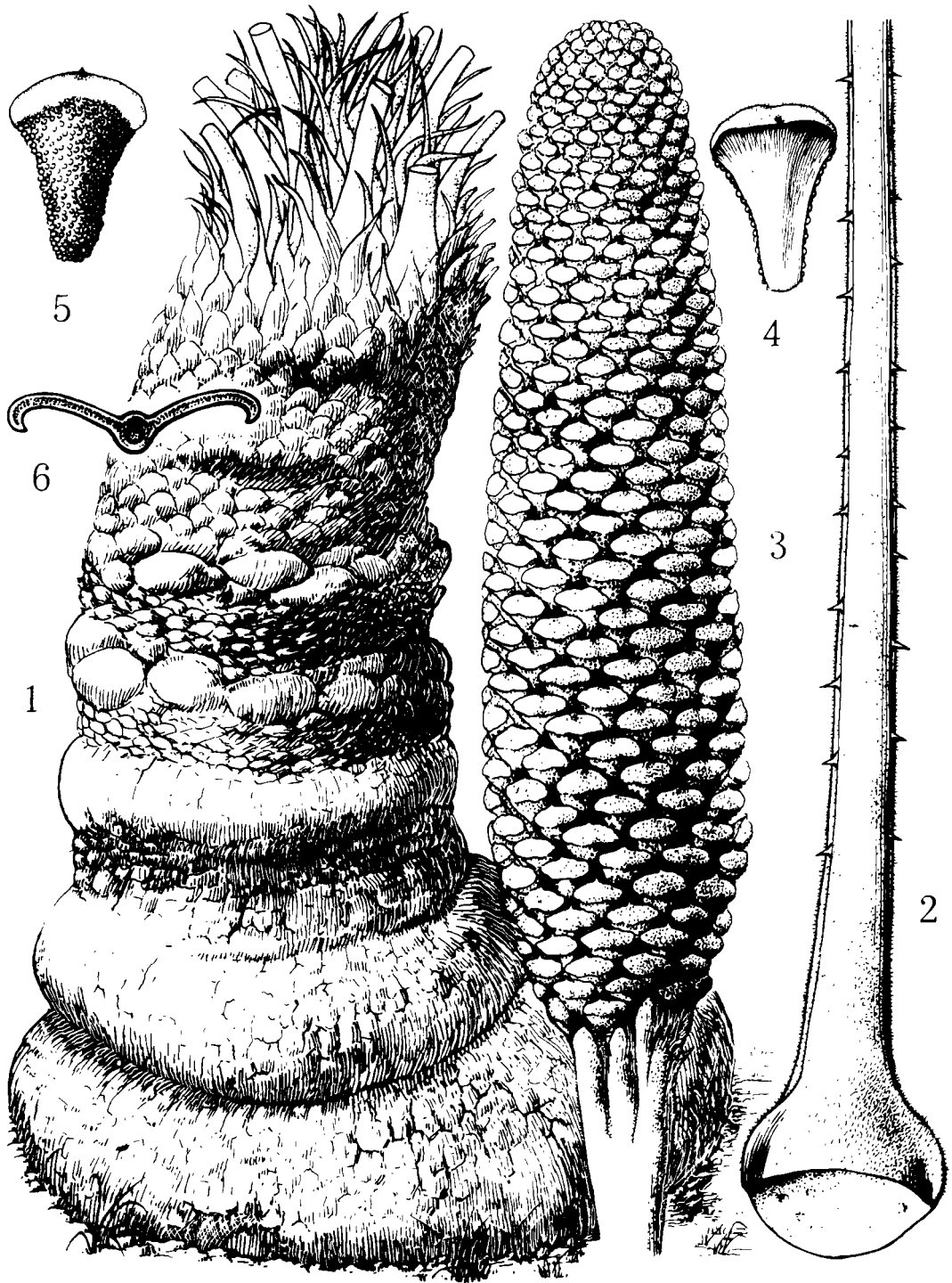


图 1. 锈毛苏铁 *Cycas ferruginea* F. N. Wei

1. stem; 2. fresh lower part of petiole; 3. fresh male cone; 4—5. microsporophylls (ventral and dorsal);
6. section of pinna (showing the most revolute margin) (Drawn by HeSunqing)

长孢苏铁 新种 图 2

Cycas longisporophylla F. N. Wei, sp. nov.

茎高约 25 cm, 基部膨大。叶羽状全裂, 长 1.0~1.5 m, 宽 30~36 cm; 叶柄长达 64 cm, 与叶轴幼时密被易脱落的黄褐色绒毛, 老时除基部外无毛, 中部以上被疏刺; 刺长约 3 mm, 每边 6~18 枚; 羽片通常每边 52~76 片, 革质, 线状披针形, 长 15~18 cm, 宽 0.7~0.9 cm, 先端渐尖, 基部稍下延, 初时密被易脱落的黄褐色长绒毛, 成熟时无毛, 边缘平坦或略背卷, 中脉在两面隆起。雄球花柱状圆锥形, 长 39~50 cm, 黄褐色, 径 7~9 cm; 柄长约 8 cm; 小孢子叶楔形, 生时长 3~3.5 cm, 上部宽约 2 cm, 干时长 2.5~2.8 cm, 上部宽约 1.5 cm, 先端具脱落的短喙, 不育区被锈色长绒毛。大孢子叶生时长 18~22 cm; 顶片生时卵状三角形, 边缘深羽裂, 长 10~13 cm, 宽 6~8 cm, 干时卵形, 长 9~10 cm, 宽 5~7 cm, 中央部分披针形, 宽 1.5~1.8 cm, 背面密被锈色长绒毛, 里面除基部外无毛; 顶生裂片长 4~5 cm, 先端 3 或 4 浅裂, 长于侧生裂片; 侧生裂片每边 13~16 枚, 干时长达 4 cm, 有时分叉, 下部疏被长绒毛; 柄状部分密被锈色长绒毛; 胚珠 4 颗, 极少 5 颗; 种子卵形, 长约 3 cm, 直径约 2.5 cm (未成熟), 无毛。

广西: 桂林植物园, 栽培 (原产地为广西西南部的龙州, 生于石灰岩山上), 1994—09—08, 韦发南 2222 (主模式, 雌花 IBK); 同地, 1995—06—19, 韦发南 2243 (雄花, IBK)、2244 (雄花, IBK)。

本种与其他种不同主要在于其羽片很狭窄, 宽不及 1 cm, 通常为 0.7~0.9 cm, 但大孢子叶片特长, 生时可达 22 cm, 不育顶片边缘深羽裂, 侧生钻状裂片生时长达 5 cm。

Species valde insignis, foliolis angustioribus, 0.7~0.9 cm latis, macrosporophyllis elongatis in vivo usque ad 22 cm longis; lamina terminali sterili margine profunde pinnatifida; segmentis lateralibus in vivo usque ad 5 cm longis a speciebus ceteris manifeste diversa.

Truncus c. 25 cm altus, basi inflatus. Folia pinnatisecta, 1.0~1.5 m longa, 30~36 cm lata; petiolis usque ad 64 cm longis cum rhachidibus in juventute dense facile caducoque luteo—brunneo—tomentosis et in maturitate praeter bases glabris, supra medium sparse spinosis; spinis c. 3 mm longis utrinsecus 6~18; foliolis frondium saepe utrinsecus 52~76, coriaceis, lineari—lanceolatis, 15~18 cm longis, 0.7~0.9 cm latis, apice acuminatis, basi leviter decurrentibus, primo dense facile caducoque luteo—brunneo—tomentosis, postea glabris, margine planis vel leviter revolutis, costa media utrinque elevata. Strobilus masculus in vivo cylindrico—conicus, 39~50 cm longus, 7~9 cm in diam., luteo—brunneus; pedunculo c. 8 cm longo; microsporophyllis cuneiformibus in vivo 3~3.5 cm longis, superne 2 cm latis, in sicco 2.5~2.8 cm longis, supeme c. 1.5 cm latis, apice caduce rostratis; areis sterilibus dense ferrugineo—velutinis. Macrosporophylla in vivo 18~22 cm longa; lamina terminali sterili in vivo ovato—deltoidea, margine profunde pinnatifida, 10~13 cm longa, 6~8 cm lata, in sicco ovata, 9~10 cm longa et 5~7 cm lata; parte centrale lanceolata, 1.5~1.8 cm lata, subtus dense ferrugineo—tomentosa, intus praeter basim glabra; lobo terminali 4~5 cm longo, apice 3—vel 4—lobato, segmentis lateralibus longioribus; segmentis lateralibus utrinsecus 13~16, in sicco usque ad 4 cm longis, forte furcatis, infra medium sparse tomentosis; ovulis 4 rarissime 5; seminibus ovoideis, c. 3 cm longis, c. 2.5 cm in diam. (imm.), glabris.

Guangxi: Cultivated in Guilin Botanical Garden, introduced from Longzhou county, southw

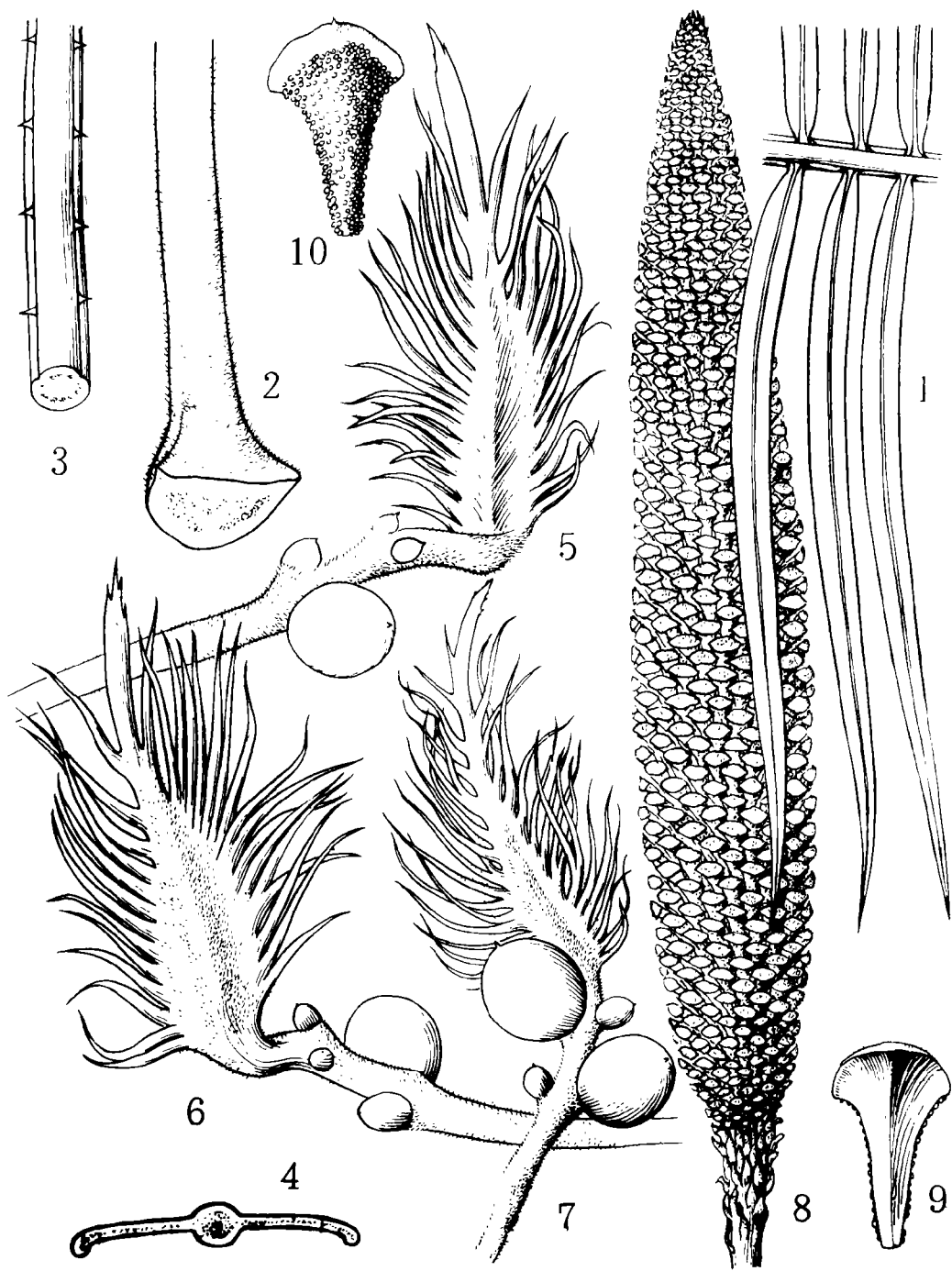


图 2. 长孢苏铁 *Cycas longisporophylla* F. N. Wei

1. median part of frond; 2. base of petiole; 3. upper part of petiole; 4. section of pinna; 5. fresh megasporophyll (ventral); 6. fresh megasporophyll (dorsal); 7. dry megasporophyll (dorsal); 8. dry male cone; 9-10. fresh microsporophylls (ventral and dorsal).

(Drawn by He Shunqing).

est of Guangxi, near Vietnam, on limestone hills, 1994—09—08, Wei Fanan 2222 (Holotypus, fl. fem. IBK), same locality, 1995—06—19, Wei Fanan 2243 (fl. masc. IBK), 2244 (fl. masc. IBK).

刺孢苏铁 新种 图 3

Cycas spiniformis J. Y. Liang, sp. nov.

茎高达 50 cm, 粗约 15 cm, 基部膨大, 明显具环节。叶羽状全裂, 长 0.8~1.1 m, 宽 30~36 cm; 叶柄长 20~35 cm, 与叶轴幼时密被淡褐色绒毛, 老时无毛, 上部具疏刺, 刺长约 2 mm, 每边 6~11 枚; 羽片通常每边 45~62 片, 革质, 线状披针形, 长 15~18 cm, 宽 0.7~0.9 cm, 先端渐尖, 基部下延, 初时密被淡褐色长绒毛, 老时无毛, 边缘稍背卷, 中脉在两面隆起。雄球花生时近于圆柱形, 长约 31 cm, 直径约 5 cm, 先端具多数不发育的小孢子叶; 柄长约 8 cm; 小孢子叶楔形, 干时长约 2 cm, 上部宽约 1.3 cm, 先端具短喙, 不育区疏被褐色短绒毛。大孢子叶生时长 12~15 cm; 顶片生时阔卵状三角形, 长约 8 cm, 宽约 6.5 cm, 边缘深羽裂, 干时卵形, 长约 7 cm, 宽约 5.5 cm, 中央部分干时卵状椭圆形, 宽 1.5~1.8 cm, 背面全部或中部以下极密被褐色长绒毛, 里面除基部以下外无毛; 顶生裂片干时长 4~4.5 cm, 边缘常深裂, 长于侧生裂片, 干和生时与侧裂片同样坚硬刺手; 侧裂片每边 10~13 枚, 干时长 2~2.5 cm, 无毛; 柄状部分密被褐色长绒毛; 胚珠通常 6 颗, 少为 4 或 7 颗, 种子近球形或倒卵形, 生时橙黄色, 直径 2 cm, 干后直径约 1.7 cm, 无毛。花期 6 月, 果期 10 月。

广西: 桂林植物园栽培, 引自广西龙州, 生于石灰岩山上。1995—09—16, 韦发南 2266(主模式, 雌花, IBK)、2259(雌花, IBK)、2240(雄花, IBK)。

Truncus usque ad 50 cm altus, c. 15 cm in diam., basi inflatus, conspicue annulis instructus. Folia pinnatisecta, 0.8~1.1 m longa, 30~36 cm lata; petiolis 20~35 cm longis cum rhachidibus in juventute dense pallide brunneo-tomentosis, in maturitate glabris, supra medium sparse spinosis; spinis c. 2 mm longis, utrinsecus 6~11; foliolis frondium saepe 45~62, coriaceis, lineari-lanceolatis, 15~18 cm longis, 0.7~0.9 latis, apice acuminatis et basi decurrentibus, primo dense pallide brunneo-tomentosis et postea glabris, margine leviter revolutis, costa media utrinque elevata. Strobilus masculus in vivo subcylindricus, c. 31 cm longus, c. 5 cm in diam. luteolus, apice microsporophyllis multo sterilibus armatus; pedunculo c. 8 cm longo; microsporophyllis cuneiformibus in sicco c. 2 cm longis, superne c. 1.3 cm latis, apice breviter rostratis; areis sterilibus sparse brunneo-velutinis. Macrosporophylla in vivo 12~15 cm longa; lamina terminali sterili in vivo ovato-triangulari, c. 8 cm longa, c. 6.5 cm lata, margine profunde pinnatifida, in sicco c. 7 cm longa et c. 5.5 cm lata; parte centrale in sicco ovato-elliptica, 1.5~1.8 cm lata, subtus omnino vel infra medium dense brunneo-tomentosa, intus praeter infra basim glabra; segmentis lateralibus utrinsecus 10~13, in sicco 2~2.5 cm longis, glabris; lobo terminali in sicco 4~4.5 cm longo, margine saepe partitis, segmentis lateralibus longiore, in vivo et sicco cum eis duris; stipitibus dense brunneo-tomentosis; ovulis plerumque 6 in utroque raro 4 vel 7; seminibus subglobosis vel obovoideis, in vivo aurantiacis c. 2 cm in diam. et in sicco c. 1.7 cm diam. Floret 6, fructificat 10.

Guangxi: Guilin Botanical Garden, cultivated, introduced from Longzhou county, near Vietnam on limestone hills, 1995—09—16, Wei Fanan 2266 (Holotypus, fl. fem. IBK), 2259 (fl. fem. IBK), 2240 (fl. masc. IBK).

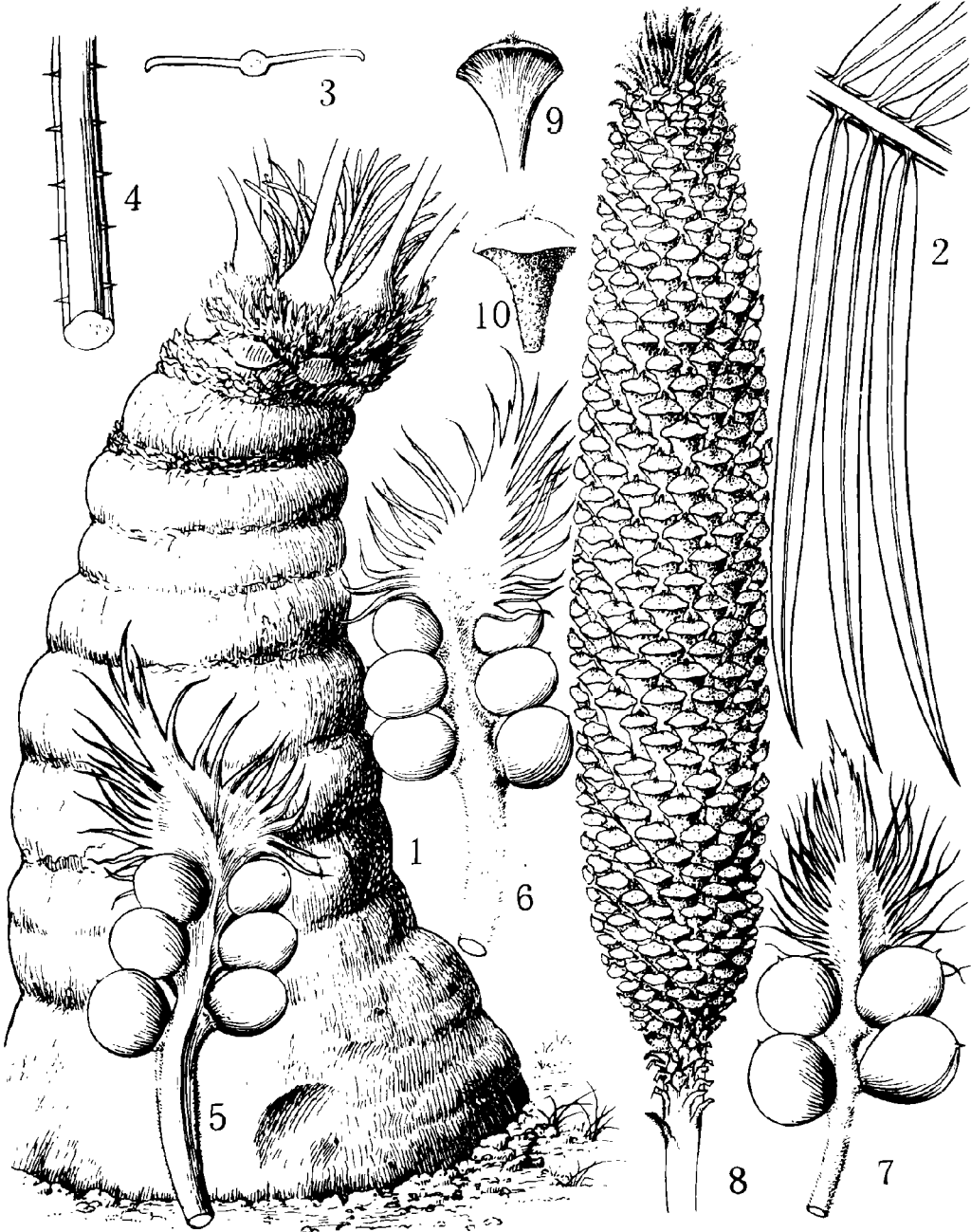


图 3. 刺孢苏铁 *Cycas spiniformis* J. Y. Liang

1. stem; 2. median part of frond; 3. section of pinna; 4. upper part of petiole; 5. fresh megasporophyll (ventral); 6. fresh megasporophyll (dorsal); 7. dry megasporophyll (ventral); 8. dry male cone (with many sterile microsporophylls at the top).

(Drawn by He Shunging)