

横断山蹄盖蕨科新分类群*

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NEW TAXA OF ATHYRIACEAE FROM HENGDUAN MOUNTAINS, CHINA

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Abstract Nine new species and twelve new varieties of Athyriaceae from the Hengduan Mountains, China, are described.

Key words Athyriaceae; *Allantodia*; *Athyrium*; *Cornopteris*; *Cystopteris*; *Lunathyrium*

关键词 蹄盖蕨科; 短肠蕨属; 蹄盖蕨属; 角蕨属; 冷蕨属; 蛾眉蕨属

在编写《横断山维管植物》一书的过程中发现了一些新分类群, 它们包括九个新种和十二个新变种, 现报道如下。文中的引证标本, 未注明保存地点的, 均保存在“PE”。

1. 棕鳞短肠蕨 新种 图 1: 1—2

Allantodia forrestii Ching, sp. nov.; Ching ex Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 90, 1993. nom. seminud.

Species aspectu generali *A. dilatatae* (Bl.) Ching similis, a qua differt, paleis rhizomatis stipitisque brunneis, concoloribus, stipite rachi costisque dense paleaceis, pinnulis margine inciso-crenatis ut maximum pinnatilobatis, soris basilaribus plerumque diplazioidibus.

Yunnan (云南): Tengchong (腾冲), alt. 2000—2300 m, 1913. 03., George Forrest 9780 (Holotype, K; Type fragment, PE); Fugong (福贡), Maji (马吉), W. M. Chu (朱维明) 11593 (PYU); Gongshan (贡山), Qinghai-Xizang Complex Exped. (青藏队)

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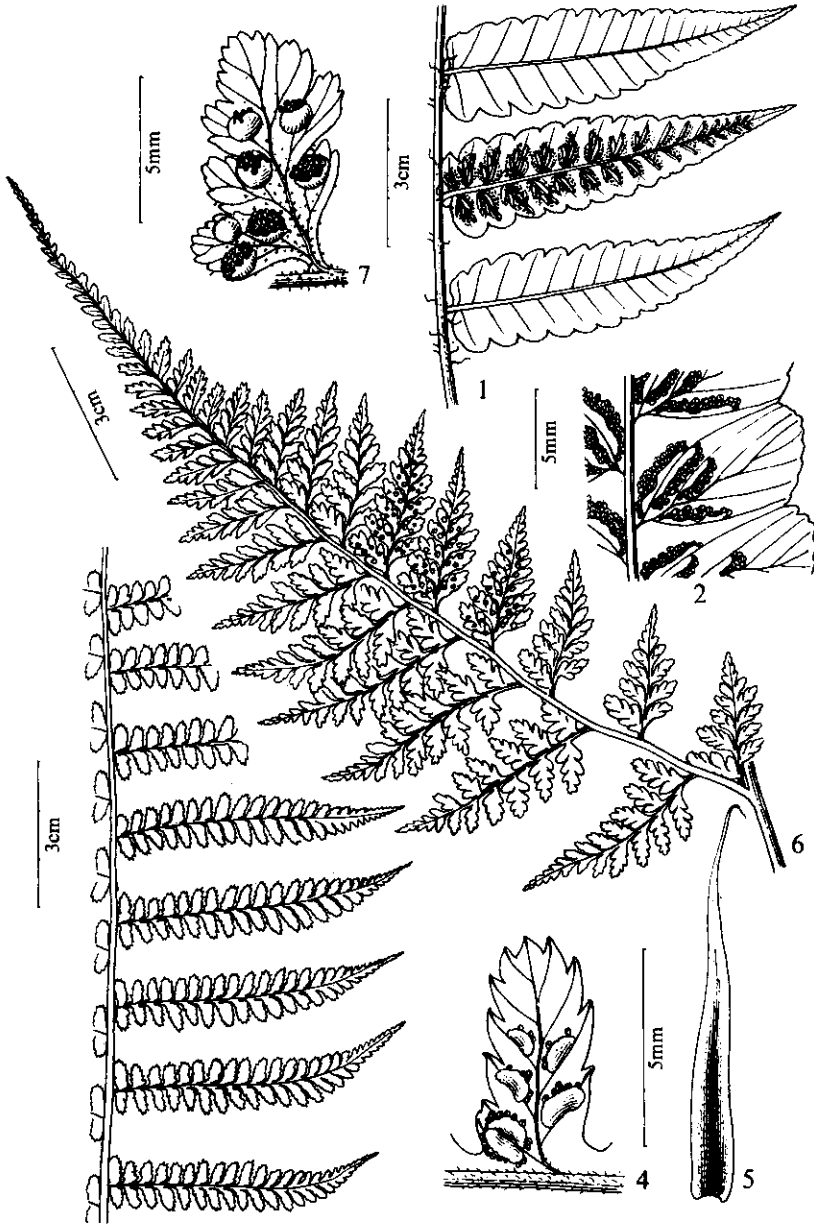


图 1 1—2. 棕鳞短肠蕨 1. 部分羽片; 2. 孢子囊群。3—5. 察隅蹄盖蕨 3. 部分叶片; 4. 裂片及孢子囊群; 5. 叶柄基部的鳞片。6. 德钦冷蕨, 羽片。7. 藏冷蕨, 未回小羽片。(冀朝桢绘)

Fig. 1 1—2. *Allantodia forrestii* 1. Portion of a pinna; 2. Sori. 3—5 *Athyrium zayuense* 3. Portion of a blade; 4. A pinna-segment with sori; 5. A scale; 6. *Cystopteris deqinensis*. A pinna; 7. *C. tibetica*. An ultimate pinnule.

83-9283; idib. W. M. Chu et al. (朱维明等) 19089 (PYU). **India:** Manipus State, Sirhoi, F. Kingdon-Ward 18170; Darjeeling, S. S. Bir 97.

本种近于膨大短肠蕨 *Allantodia dilatata* (Bl.) Ching, 但叶柄上的鳞片为棕色, 叶轴及羽轴有相当密的鳞片, 小羽片边缘缺刻状, 或至多浅圆裂, 孢子囊群通常生于每组小脉的基部下侧小脉的基部, 大多双生, 小羽片外侧有明显的不育带, 故易区别。

2. 察隅蹄盖蕨 新种 图 1: 3—5.

Athyrium zayuense Z. R. Wang, sp. nov.; — *Athyrium chayuese* Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 84. 1993. nom. seminud.

Species proxime affinis *A. dubio* Ching, a quo differt pinnis et segmentis minoribus, pinnis minus quam 1 cm latis, segmentis oblongis 2—3 mm latis, apicibus truncatis; paleis basium stipitum nigris in medio, laete brunneis ad marginem.

Xizang (西藏): Zayū (察隅), alt. 3350 m, on slopes, under *Abies* forest, 1982. 09. 12, Qinghai-Xizang Complex Exped. (青藏队) 10432 (Holotype, PE; Isotype, KUN).

本种形体近毛蕨盖蕨 *A. dubium* Ching, 但羽片和裂片远较小, 羽片宽不及 1 cm, 裂片矩圆形, 近截头, 宽 2—3 mm, 叶柄基部的鳞片中部黑色, 边缘有明显的棕色狭边。

3. 毛聂拉木蹄盖蕨 新变种

Athyrium nyalamense Y. T. Hsieh et Z. R. Wang var. *puberulum* Z. R. Wang, var. nov.; Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 87. 1993. nom. seminud.

A varietate typica differt lamina frondis multo majore, tripinnata vel tripinnato-pinnatifida, costis supra spinis subulatis non acerosis instructis, rachi et costis subtus puberulis, sporis abnormalibus.

Yunnan (云南): Gongshan (贡山), alt. 2000 m, under evergreen broad-leaved forest, 1982. 07. 20, Qinghai-Xizang Complex Exped. (青藏队) 82-8227 (Holotype, PE; Isotype, KUN).

本变种和原变种不同在于叶片较大, 三回羽状至三回羽状二回小羽片羽裂, 羽轴和小羽片中肋上面的刺状突起为钻状, 叶轴, 羽轴和小羽片下面被有短毛, 孢子不正常。

4. 毛复叶角蕨 新变种

Cornopteris badia Ching var. *pubescens* Z. R. Wang, var. nov.; Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 88. 1993. nom. seminud.

A varietate typica differt rachi costis nervisque subtus dense puberulis.

Yunnan (云南): Gongshan (贡山), Dulongjiang (独龙江), Qinlangdang (钦郎当), under evergreen broad-leaved forest, alt. 1400 m, 1982. 08. 11, Qinghai-Xizang Complex Exped. (青藏队) 82-9241 (Holotype, PE; Isotype, KUN); *ibid.* idem. 82-9635.

本变种和原变种不同在于叶轴, 羽轴和叶脉下面密被短毛。

5. 德钦冷蕨 新种 图 1: 6.

Cystopteris deqinensis Z. R. Wang, sp. nov.; Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 68. 1993. nom. seminud.

Species proxime affinis *C. moupinensi* Franch., a qua differt planta multo majore, frondibus usque 60 cm longis, laminis anguste ovatis or ovato-oblongis, tripinnato-pinnatifidis, superficiebus sporarum prominentiis dense spiniformibus praeditis.

Yunnan (云南): Deqên (德钦), Yongzhongdadui (永中大队), alt. 2400—2800 m, in valley, on rocks, 1981. 08. 22, Hengduanshan Exped. of Inst. of Bot., Acad. Sin. (北京所横断山队) 3461 (Holotype, PE); loco dicto, Qinghai-Xizang Complex Exped.

(青藏队) 3526.

本种形体近宝兴冷蕨 *C. moupinensis* Franch., 但形体远较大, 叶长可达 60 cm 以上, 叶片长卵形或卵状长圆形, 三回羽状, 末回羽片深羽裂, 孢子表面具有密集的刺状突起。

6. 藏冷蕨 新种 图 1: 7.

Cystopteris tibetica Z. R. Wang, sp. nov.; Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 68. 1993. nom. seminud.

Species habitu et textura *C. moupinensi* Franch. et affinibus similis et nullo dubio his speciebus proxima. praecipue differt laminis glanduloso-pilosis.

Xizang (西藏): Mainling (米林), alt. 3100 m, on slopes, by stream, 1972. 07. 15, Xizang Chin. Herb. Medic. Exped. (西藏中草药普查队) 3791 (Holotype, PE); Mainling (米林), Xizang Chin. Herb. Medic. Exped. (西藏中草药普查队) 3827; Zayü (察隅), T. P. Yi (易同培) 79129; B. S. Li et al. (李渤生等) 05699; Nyingchi (林芝), T. P. Yi (易同培) 79055; Bomi (波密), J. W. Zhang (张经纬) 1442; Plateau Sect. of Ecol. Dept. of Inst. of Bot. (生态室高原组) 14859; B. S. Li et al. (李渤生等) 0493. **Yunnan** (云南): Deqen (德钦), T. T. Yü (俞德浚) 9934; Zhana to Gebao (扎那至格堡), 采集人 不详 8875.

本种形体近宝兴冷蕨 (*C. moupinensis* Franch.), 但叶片两面被有许多短腺毛。

7. 大耳蛾眉蕨 新种 图 2: 1—4.

Lunathyrium auriculatum W. M. Chu et Z. R. Wang, sp. nov.; W. M. Chu et Z. R. Wang ex Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 74. 1993. nom. seminud.

Species habitu generali *L. giraldii* (Christ) Ching similis, a quo differt segmentis basalibus acroscopicis pinnarum infimorum 1 vel aliquot -jugarum conspicue dilatatis, necnon pinnatilobtis vel pinnatipartitis, stipite rachique pilis crassiusculis longiusculis densioribusque vestita, indusiis postice breviter pilosis, margine manifesto ciliatis.

Yunnan (云南): Lijiang (丽江), Baishuihe (白水河), Yulongxueshan (玉龙雪山), alt. 2900 m, 1957. 08. 28, W. M. Chu et al. (朱维明等) 865 (Holotype, PYU; Iso-type, PE); ibid. idem. 597, 745, 806, 837; Kunming Station, Inst. of Bot. (昆明工作站) 22557; Zhongdian (中甸), W. M. Chu et al. (朱维明等) 16838, 16874, 16875, 17089, 17112, 17365 (PYU); Shan-Da-Wan, X. Cheng (成晓) 86-212, 86-213, 86-214, 86-241 (KUN).

本种形体近陕西蛾眉蕨 *L. giraldii* (Christ) Ching, 但叶下部一至数对羽片的基部上侧裂片格外增大, 并羽状浅裂或深裂, 叶轴和羽轴下面毛粗长, 较密, 囊群盖背上有短毛, 边缘明显具睫毛。

8. 短羽蛾眉蕨 新种 图 2: 5—6.

Lunathyrium brevipinnum Ching et K. H. Shing, sp. nov.; Ching et K. H. Shing ex Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 73. 1993. nom. seminud.

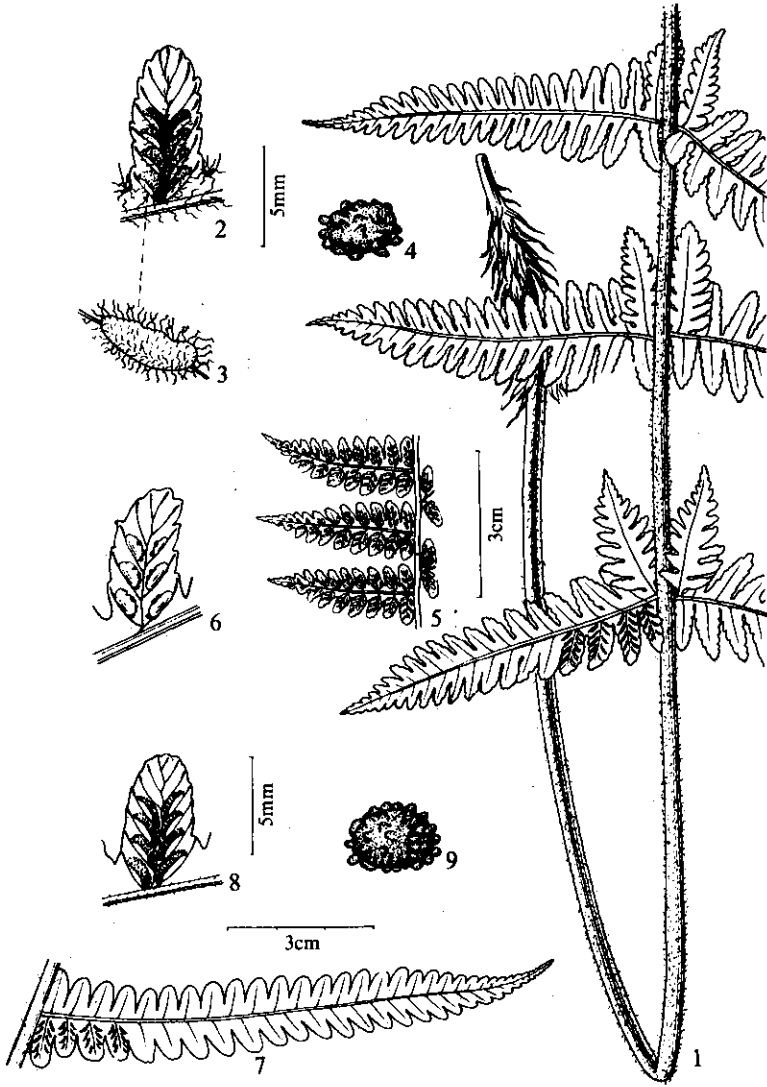


图 2 1—4. 大耳蛾眉蕨 1. 叶下半部; 2. 裂片及孢子囊群; 3. 囊群盖放大; 4. 孢子放大。5—6 短羽蛾眉蕨 5. 部分叶片; 6. 裂片及孢子囊群。7—9 华中蛾眉蕨 7. 羽片; 8. 裂片及孢子囊群; 9. 孢子放大。(冀朝楨绘)

Fig. 2 1—4 *Lunathyrium auriculatum* 1. Lower portion of a frond; 2. A pinna-segment with sori; 3. An enlarged indusium. 4. An enlarged spore. 5—6. *L. brevipinum* 5. Portion of a blade; 6. A pinna-segment with sori. 7—9. *L. shennongense* 7. A pinna; 8. A pinna-segment with sori; 9. An enlarged spore.

Proximum *L. shennongensi* Ching, Boufford et Shing, differt pinnis minus quam 12-jugis, brevioribus, minus quam 5 cm longis, segmentis pinnarum minus quam 5—7-jugis, apicibus obtusis vel subtruncatis.

Yunnan (云南): Dayao (大姚), in thickets, alt. 2700 m, 1963. 09. 01 S. K. Wu et al. (武素功等) 63-6743 (Holotype, PE; Isotype, KUN, PYU); *ibid.*, W. M. Chu et al. (朱维明等) 1974, 2269, 2460 (PYU); Yongren (永仁), *idem.* 1583 (PYU); Qiaojia (巧家), *idem.* 5419 (PYU); Binchuan (宾川), Jinshajiang Exped. (金沙江队) 63-6638; Eryuan (洱源), Jinshajiang Exped. (金沙江队) 63-6064; Luquan (禄劝), W. M. Chu et

al. (朱维明等) 1977 (PYU); Heqing (鹤庆), R. C. Ching (秦仁昌) 23556.

本种形体近华中蛾眉蕨 *L. shennongense* Ching, Boufford et Shing, 但羽片较少, 约 12 对, 较短, 长 3 cm 左右, 最长不过 5cm, 基部稍变阔, 羽片上的裂片较少, 只有 5—7 对, 裂片顶端圆钝或近截形, 故易区别。

9. 毛轴蛾眉蕨 新种 图 3: 1—2.

Lunathyrium hirtirachis Ching, sp. nov.; Ching in Y. L. Chang et al., Spor. Pterid. Sin. (中国蕨类植物孢子形态) 234. f. 72, c, t. 46. f. 16—17. 1976. nom. nud.; Ching ex Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 72. 1993. nom. seminud.

Species habitu generali *L. doloso* (Christ) Ching similis, a qua differt superficie sporarum prominentiis rugolosis non auriformibus praeditis. stipite. rachi costisque utrinque densissime villosis.

Yunnan (云南): Gongshan to Fugong (贡山至福贡), N'Maikha-Salwin divide, alt. 3900 m, 1925. 04, G. Forrest 27112 (Holotype, PE).

本种形体接近大理蛾眉蕨 *Lunathyrium dolosum* (Christ) Ching, 但孢子表面具有少数连续的褶皱, 不具有耳片状突起, 叶柄和叶轴混生密的节状长柔毛和鳞片状毛, 在叶片两面也有节状长柔毛, 故易区别。

10. 四川蛾眉蕨 新种 图 3: 3—5.

Lunathyrium sichuanense Z. R. Wang, sp. nov.; Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 73. 1993. nom. seminud.

Species proxime affinis *L. liangshanensi* Ching ex Z. R. Wang, a qua differt lamina utrinque pilis sparsis vestitis. segmentis margine pilis longiusculis multicellularibus destitutis; a *L. shennongensi* Ching. Boufford et Shing pinnis in sinibus inter segmenta pilis articulatis ornatis. rachi costisque pilis longiusculis indutis.

Sichuan (四川): Hongxi (洪溪), alt. 2200 m, 1959. 07. 18, Chuanjingliang (川经凉) (59) 1355 (Holotype, PE); Mt. Emei (峨眉山), C. S. Cheng (郑止善) 630; Z. R. Wang et al. (王中仁等) C175, 900; Daxiangling (大相岭), H. S. Kung (孔宪需) 3706, 3709, 3772, 3785, 3804, 4062; Xiaojin (小金), H. S. Chang (张秀实) 6842; Butuo (布拖), Chuanjingliang (川经凉) (59) 5838; Wuxi (巫溪), B. Y. Zhang (张百誉) 83-1728. **Gansu** (甘肃): Kangxian (康县), Y. P. Hsu (徐养鹏) 1095; Luding (泸定), Zhang Li-bing (张丽兵) 144, 263, 659, 1313 (CDBI); Shimian (石棉), idem. 557, 2026 (CDBI); Jiulong (九龙), idem. 2422 (CDBI); **Guizhou** (贵州): Leigongshan (雷公山), P. S. Wang (王培善) 77120. **Yunnan** (云南): Weixi (维西), W. M. Chu (朱维明) 11700 (PYU); Lijiang (丽江), Y. C. Chao (赵蕴章) 22040; Yulongxueshan (玉龙雪山), W. M. Chu et al. (朱维明等) 264, 659, 732, 1127 (PYU); Yangbi (漾濞), Jinshajiang Exped. (金沙江队) 4264; Daguan (大关), idem. 5238; Luquan (禄劝), idem. 2105; Jingdong (景东), Wuliangshan (无量山), idem. 9348; Dayao (大姚), idem. 2451. **Xizang** (西藏): Zayü (察隅), T. P. Yi (易同培) 79123; Qinghai-Xizang

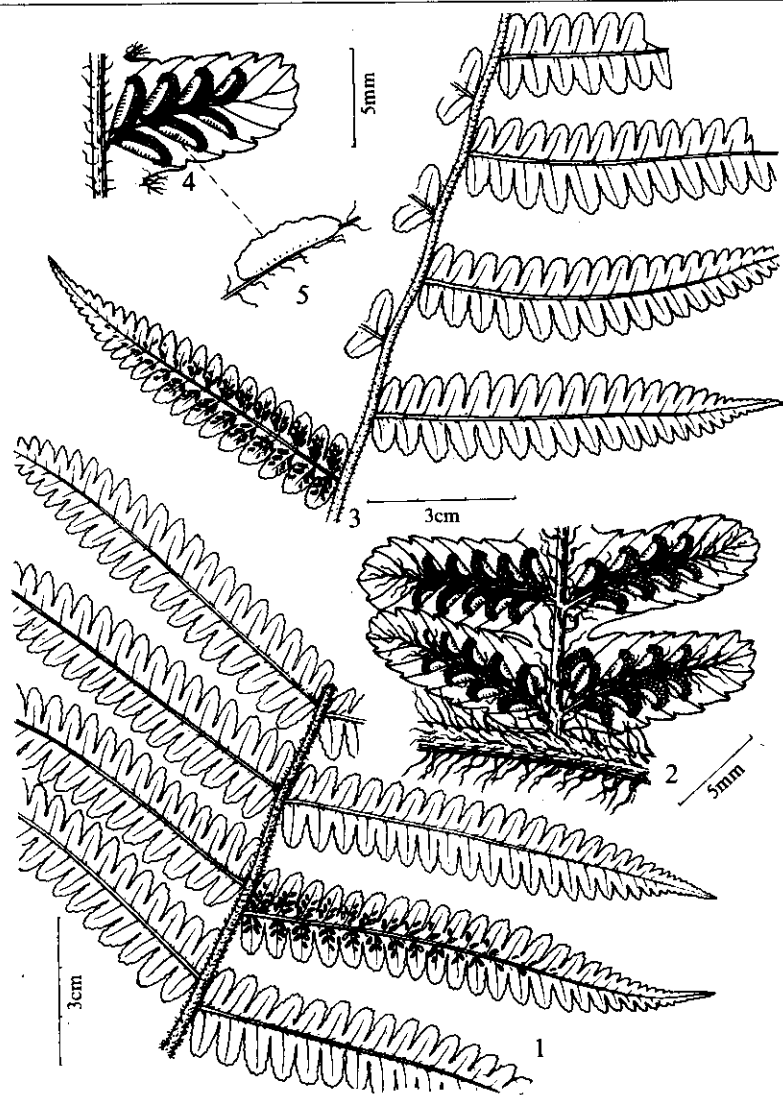


图3 1—2. 毛轴蛾眉蕨 1. 部分叶片; 2. 羽片下部。3—5. 四川蛾眉蕨 3. 部分叶片;
4. 裂片及孢子囊群; 5. 囊群盖放大。(冀朝祜绘)

Fig. 3 1—2 *Lunathyrium hirtirachis* 1. Portion of a blade; 2. Lower portion of a pinna. 3—5. *L. sichuanense*
3. Portion of a blade; 4. A pinna-segment with sori; 5. An enlarged indusium.

Complex Exped. (青藏队) 82-10052.

本种形体近凉山蛾眉蕨 *L. liangshanense* Ching ex Z. R. Wang, 但叶上下两面毛疏, 裂片边缘没有节状长柔毛, 至多在齿缺处偶有个别短毛; 本种形体也近华中蛾眉蕨 *L. shennongense* Ching, Boufford et Shing, 但在裂片间缺刻处生有节状毛, 叶轴及羽轴下面的毛也较粗长, 故易区别。

11. 贡山蛾眉蕨 新变种

Lunathyrium sichuanense Z. R. Wang var. *gongshanense* Z. R. Wang, var. nov.;
Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 73. 1993. nom.
seminud.

A varietate typica differt rachi costisque Pilis sparsis brevissimis tantum vestitis vel subglabris.

Yunnan (云南): Gongshan (贡山), on slopes, under Abies forest, alt. 3500 m, 1982. 06. 30, Qinghai-Xizang Complex Exped. (青藏队) 82-7781 (Holotype, PE; Isotype, KUN).

本变种与原变种不同在于叶轴和羽轴下面的节状毛细短而稀疏, 近无毛。

12. 凉山蛾眉蕨 新种 图 4: 1—4.

Lunathyrium liangshanense Ching, sp. nov.; Ching in Y. L. Chang et al., Spor. Pterid. Sin. (中国蕨类植物孢子形态) 233. t. 46, f. 8—9, 1976. nom. nud.; Ching ex Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 72. 1993. nom. seminud.

Species proxime affinis *L. giraldii* (Christ) Ching, a qua differt pinnis inferioribus ca. 10-jugis deorsum sensim abbreviatis, infimis auriculatis, stipite brevior, tota planta ubique sat dense pilosa, segmentis margine pilis longiusculis multicellularibus indutis.

Sichuan (四川): Leibo (雷波), Gudui (谷堆), Liangshan (凉山), moist place, under dense forest, alt. 2200 m, 1959. 07. 01. T. S. Ying (应俊生) 1029 (Holotype, PE); ibid. idem. 1024; H. S. Kung (孔宪需) 5436, 5550. **Yunnan** (云南): Dagan (大关), W. M. Chu (朱维明) 5307 (PYU); Yongshan (永善), Exped. of Kunming Inst. of Bot., Acad. Sin. (昆明植物所) 昭-155; Qiaojia (巧家), W. M. Chu (朱维明) 5500 (PYU).

本种形体近陕西蛾眉蕨 *L. giraldii* (Christ) Ching, 但叶下部羽片多对渐缩短, 基部一对羽片往往呈耳形, 叶柄较短, 遍体被密毛, 裂片边缘也有节状长柔毛, 故易区别。

13. 绢毛蛾眉蕨 新变种 图 4: 5—6.

Lunathyrium liangshanense Ching ex Z. R. Wang var. **sericeum** Ching et Z. R. Wang, var. nov.; Ching et Z. R. Wang ex Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 73. 1993. nom. seminud.

A varietate typica differt planta multo minore ca. 45 cm alta, pinnis mediis 4—5 cm longis, utrinque densissime sericeis, indusiis postice pilis longiusculis multicellularibus dense indutis.

Yunnan (云南): bor. -occid. H. T. Tsai (蔡希陶) 50941 (Holotype, PE).

本变种与原变种不同在于形体较小, 植株高约 45 cm, 中部羽片长 4—5 cm, 两面密被绢毛, 囊群盖上密被节状长柔毛。

14. 维明蛾眉蕨 新变种

Lunathyrium medogense Ching et S. K. Wu var. **weimingii** Z. R. Wang, var. nov.; Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 72. 1993. nom. seminud.

A varietate typica differt rhizomate adscendente, planta multo majore, usque ad 120—130 cm alta, pinnis mediis usque ad 14—16 cm longis, segmentis 20—25-jugis.

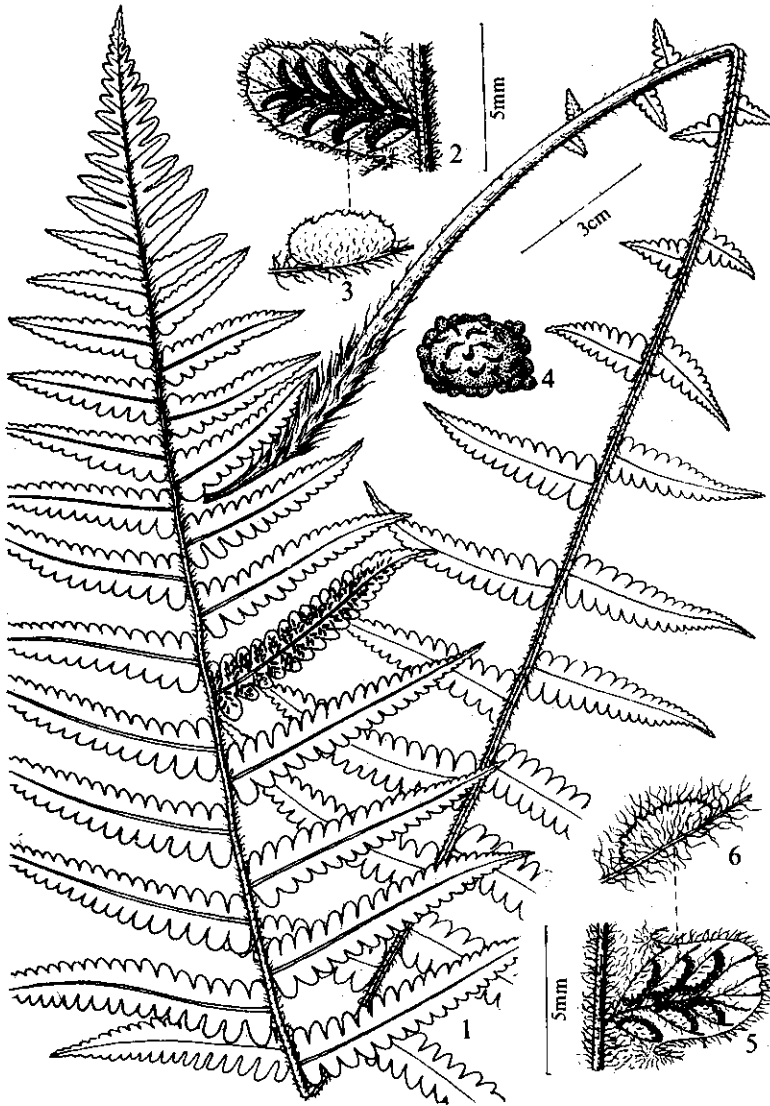


图4 1—4. 凉山蛾眉蕨 1. 叶片; 2. 裂片及孢子囊群; 3. 囊群盖放大; 4. 孢子放大。5—6. 绢毛蛾眉蕨
5. 裂片及孢子囊群; 6. 囊群盖放大。(冀朝棣绘)
Fig. 4 1—4. *Lunathyrium liangshanense* 1. A frond; 2. A pinna-segment with sori; 3. An enlarged indusium. 4. An enlarged spore. 5—6. *L. liangshanense* var. *sericeum* 5. A pinna-segment with sori; 6. An enlarged indusium.

Yunnan (云南): Gongshan (贡山), Sijiduomei (四季多美), alt. 3300 m, 1980. 10.
10. W. M. Chu (朱维明) 11665 (Holotype, PE; Isotype, PYU).

本变种与原变种不同在于根状茎斜升, 植株远较大, 高可达 120—130 cm, 叶中部羽片长达 14—16 cm, 其裂片可达 20—25 对。

15. 黄山蛾眉蕨 新变种

Lunathyrium orientale Z. R. Wang et J. J. Chien var. *huangshanense* Z. R. Wang, var. nov.; Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 73. 1993. nom. seminud.

A varietate typica differt indusiis margine breviter ciliatis, stipite stramineo, pilis arti-

culatis stipitis rachisque rectis.

Anhui (安徽), Shexian (歙县), Huangshan (黄山), 1975. 07. 17, K. J. Kuan (关克俭) 75328 (Holotype, PE). loco dicto, T. N. Liou (刘慎愕) & P. C. Tsong (钟补求) 2724, 2918; P. C. Tsong (钟补求) 4061; P. S. Chiu (裘佩熹) 56, 2541; C. Y. Wu et al. (吴征镒等) 77-68. **Zhejiang** (浙江): Xitianmushan (西天目山), W. K. King (金维坚) K342; Suichang (遂昌), Jiulong (九龙山), P. S. Chiu et al. (裘佩熹等) 5634. **Jiangxi** (江西): Lushan (庐山), P. S. Chiu (裘佩熹) 3225; West Jiangxi (赣西), Y. G. Xiong (熊耀国) 05573; Wuning (武宁), S. S. Lai (赖书绅) 03086. **Sichuan** (四川): Luding (泸定), K. Y. Lang et al. (郎楷永等) 382, 415; Zhang Li-bing (张丽兵) 933, 958, 974, 1135 (CDBI)

本变种不同于原变种在于囊群盖边缘有短睫毛, 叶柄禾秆色, 叶柄及叶轴上的节状毛通直。

16. 六巴蛾眉蕨 新变种

Lunathyrium vegetius (Kitagawa) Ching var. *liubaense* Z. R. Wang, var. nov.; Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 72. 1993. nom. seminud.

A varietate typica differt rachi costisque pilis longiusculis vestitis, pilis articulatis nerorum superfierum ventralium pinnarum fertilibum conspicuis, indusiis margine breviter ciliatis.

Sichuan (四川): Kangding (康定), Sewurong (色物绒), alt. 3300 m, 1981. 08. 08, H. S. Kung (孔宪需) 6015 (Holotype, PYU; Isotype, CDBI),

本变种与原变种不同在于叶轴和羽轴有长毛, 能育羽片的叶脉上面节状毛明显, 囊群盖边缘为短睫毛状, 故易区别。

17. 壳盖蛾眉蕨 新变种

Lunathyrium vegetius (Kitagawa) Ching var. *turgidum* Ching et Z. R. Wang, var. nov.; Ching et Z. R. Wang ex Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 72. 1993. nom. seminud.

A varietate typica differt indusiis valde turgidis, pallide brunneis, postice superficiebus laevibus, persistentibus, rugis sporae paulo brevioribus multioribus.

Sichuan (四川): Li Xian (理县), Miyaluo (米亚罗), under forest in slope, alt. 2750 m, 1956. 09. 25, X. Li (李馨) 46500 (Holotype, PE); ibid. idem. 46502, 46738; Heishui (黑水), X. Li et al. (李馨等) 73817; Chengkou (城口), T. L. Tai (戴天伦) 102439.

本变种和原变种不同在于囊群盖强度膨胀, 灰褐色, 表面较平滑, 孢子囊成熟时仍覆盖在上边, 孢子表面褶皱稍短, 但较多。

18. 哈巴蛾眉蕨 新变种

Lunathyrium wilsoni (Christ) Ching var. *habaense* Ching et Z. R. Wang, var. nov.; Ching et Z. R. Wang ex Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan

Mount. 1: 74. 1993. nom. seminud.

A varietate typica differt segmentis oblongo-deltaideis, sinubus latis interjectis, marginibus inciso-serratis, nervulis saepe 2-furcatis.

Yunnan (云南): Zhongdian (中甸), in wooded ravine, alt. 2800 m, 1959. 06. 29, C. L. Wu (吴中伦) 41832 (Holotype, PE); loco dicto, idem. 41830.

本变种与原变种不同在于裂片长三角形, 互相以宽间隔分开, 边缘有长锯齿, 甚至呈浅裂状, 侧脉常为二叉。

19. 锐裂蛾眉蕨 新变种

Lunathyrium wilsoni (Christ) Ching var. **incisoserratum** Ching et Z. R. Wang, var. nov.; Ching et Z. R. Wang ex Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 74. 1993. nom. seminud. — *L. incisoserratum* Ching in Chang, Y. L. et al. Spor. Pterid. Sin. (中国蕨类植物孢子形态) 232. 1976. excl. tab., nom. nud.

A varietate typica differt pinnis anguste triangularibus, segmentis margine grosse serratis, nervulis interdum 2-furcatis.

Yunnan (云南): Dêqên (德钦), alt. 3200—3500 m, 1940. 08. 10, K. M. Feng (冯国楮) 6487 (Holotype, PE); loco dicto, idem, 6424; Atuntze (阿墩子), T. T. Yü (俞德浚) 9949.

本变种与原变种不同在于羽片狭长三角形, 裂片边缘锯齿明显, 侧脉有时二叉。

20. 大蛾眉蕨 新变种

Lunathyrium wilsoni (Christ) Ching var. **maximum** Ching et Z. R. Wang, var. nov.; Ching et Z. R. Wang ex Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 74. 1993. nom. seminud. — *L. maximum* Ching in Chang, Y. L. et al. Spor. Pterid. Sin (中国蕨类植物孢子形态) 233. pl. 46. fig. 4—5. 1976. nom. nud.

A varietate typica differt planta majore, segmentis margine regulariter serratis.

Sichuan (四川): Lixian (理县), under Abies-Betula forest, alt. 3100 m, 1956. 09. 28, H. S. Kung (孔宪需) 1939 (Holotype, PE). Gansu (甘肃): South Gansu, J. F. Rock 14842.

本变种与原变种不同在于形体较大, 裂片边缘锯齿明显。

21. 木里蛾眉蕨 新变种

Lunathyrium wilsoni (Christ) Ching var. **muliense** Z. R. Wang, var. nov.; Z. R. Wang in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 75. 1993. nom. seminud.

A varietate typica differt rachi costisque pilis paulo crassiusculis longiusculisque vestitis, segmentis margine serratis.

Sichuan (四川): Muli (木里), on slopes, under Abies forest, alt. 3400 m, 1983. 08., Qinghai-Xizang Complex Exped. (青藏队) 83-13059 (Holotype, PE; Isotype, KUN); Yanyuan (盐源), idem. 83-12410. **Xizang** (西藏): Zayü (察隅), idem. 82-10417.

本变种与原变种不同在于叶轴及羽轴下面毛较粗长, 裂片边缘有锯齿。