

对最长,对生,几相等,长2.5—3厘米,宽1—1.5厘米,近于钝头,有短柄,基部近心脏形,羽状分裂,上方各对缩小,长圆披针形,略为浅羽裂,或为波状;末回小羽片长卵形,长1—1.5厘米,浅羽裂或不裂,边缘有密生的小圆齿状齿牙。第二对羽片较短,长3.5厘米,宽约1.5—2厘米,阔披针形,短渐尖头,有短柄,基部心脏形,下先出,一回羽状。叶轴无毛,或稍有疏毛,叶干后坚革质,黄绿色,表面皱凸。叶脉不见。孢子叶总长19—23厘米,直立,孢子囊穗长4—9厘米,宽4—5厘米,圆锥状,散开,2—3回羽状,无毛。

产于东北各省、云南西北部山地(澜沧与怒江分水岭)。生林缘或草坡上,海拔可达4000米。也分布于西伯利亚东部、乌苏里、堪察加、朝鲜。

本种经常与阴地蕨混淆不清,其实除叶缘的锯齿不同外,其形体也比阴地蕨为健强,各回羽片密接,叶质也较坚厚。

13. 四川阴地蕨

Botrychium sutchuenense Ching, sp. nov.

根状茎短小,直立,有较细长的肉质根。总叶柄短,高达4厘米,基部托叶状的苞为灰棕色,长达3厘米。营养叶全长达16厘米,柄长达7厘米,宽2.5毫米,无毛,叶片长达9厘米,宽达10厘米,五角形,短渐尖头,基部三回羽状,向上为二回羽状深裂;羽片5—6对,斜出,几对生,彼此密接成复瓦状,下部三对相距1.2厘米,有柄(长1厘米),基部一对最大,三角形,长达6厘米,宽达5厘米,短尖头,二回羽状分裂;一回小羽片3—5对,几对生,稍下先出,基部下片最长,达4厘米,宽约1厘米,卵状三角形,钝头或急尖头,柄极短,一回羽状,其余各片向上逐渐缩短,阔披针形,急尖头,无柄,羽裂;末回小羽片2—3对,合生,卵形或椭圆形,基部下片较大,长1.2厘米,宽7毫米,稍下先出,边缘有少数不整齐的较大疏锯齿。第二对羽片起向上渐变短,阔披针形,有短柄,急尖头,长达5厘米,宽1.6厘米,一回羽状,下先出。叶为坚纸质,干后褐绿色,表面极为皱凸不平。叶脉不见。孢子叶全长16—32厘米,高出营养叶一倍,孢子囊穗长6—11厘米,2—3回羽状,圆锥状,散开,有灰白色的短毛。

产于四川东部(城口县)。尚未在其他地区发现。

本种形体极似粗壮阴地蕨,但末回小羽片不为浅羽裂,叶缘锯齿稀疏而粗大,故易区别。

14. 多裂阴地蕨(东北草本植物志,第一卷)

Botrychium multifidum (Gmel.) Rupr. Distr. Crypt. Vasc. in Beitr. z. Pflan-

pinnatis, pinnulis ambitu nec ovato-deltoides sed late lanceolatis, segmentis ultimis margine dentibus obtusiusculis instructis et rachi rachillisque pilis albidis fere nullis vel sparsissime obtectis.

Yunnan, Teh-ching Hsien, Tze-chung, on the Tibetan border, leg. K. M. Feng No. 5668, in wooded ravine, alt. 2300—2600 m, VI, 20, 1940.

9. **Botrychium parvum** Ching, sp. nov.

Species gregis *B. lanuginosi* Wall. multo minor, tota planta ad 22 cm alta, lamina 6—9 cm longa, 5—6 cm basi lata, basi tripinnatifida, pinnis infimis ad 5 cm longis, sequentibus minoribus, late lanceolatis, segmentis ultimis subintegris aut breviter pauciserrulatis.

Kweichow, without locality, leg. S. W. Tang No. 41679.

10. **Botrychium officinale** Ching, sp. nov.

Species gregis *B. ternati* Thunb. a quo habitu magis robustiore, textura folii duriore, segmentis ultimis latioribus et marginibus subintegris vel leviter crenato-undulatis recedit.

Szechuan austr.-orient., Nan-chuan Hsien, Ching-fu Shan, leg. C. Pei No. 7299, XI, 1939; ibidem, leg. W. P. Fang No. 938, V, 25, 1928, alt. 1200—1400 m; ibidem, leg. Shiung Chih Hwa No. 93732 (typus), under bamboo grove, alt. 2100 m, IX, 30, 1957.

13. **Botrychium sutchuanense** Ching, sp. nov.

Botrychium obliquum Christ in Bull. Soc. Bot. France LII, Mem. 1 (1905) 75, non Muhl. 1810—*Botrychium ternatum* Christ, l.c. 52, non Sw. 1801.

Species gregis *B. robusti* Underw. differt statura multo graciliore et marginibus segmentorum dentibus majoribus sparsioribus praeditis.

Szechuan Orient., Tchen-keou-tin, leg. R. P. Farges No. 144 (typus); ibidem, R. P. Farges, s.n.

15. **Botrychium longipedunculatum** Ching, sp. nov.

Species gregis *B. multifidi* (Gmel.) Rupr. differt statura minore, petiolo frondis fertilis quam is folii sterilis triplo-longioribus, lamina minore, segmentis ultimis margine solum obscure crenatis.

Yunnan, Environs de Yunnan-sen, herbages de la haute montagne, leg. F. Ducloux No. 14, VIII, 9, 1905.

Angiopteris Hoffm.

1. **Angiopteris pinnata** Ching, sp. nov.

Rhizomate parvo, globoso, 2—5 cm diametro; fronde solitari, 90—120 cm alta, erecta, stipite 50—65 cm longo, ad basin ca. 6 mm crasso, sursum tenuiore, viridi-stramineo vel saepe parte inferiore rubido-stramineo, glabra, ad medium geniculo 1 cm longo tumide nodoso statu sicco fusco-brunneo praedito; lamina deltoideo-ovata, 35—65 cm longa et lata, simpliciter pinnata; pinnis (praeter similem terminalem) 2-6-jugis, alternis, saepe juga basali oppositis, 5—6 cm inter se remotis, obliquis, inferioribus 15—20 cm longis, superioribus majoribus, usque ad 23—36 cm longis, 3.5—5.5 cm latis, pinna terminali etiam majore et basi saepe lobis 2-jugis, parvis instructis, late lanceolatis, apicem versus acuminatis vel caudato-acuminatis, ad basin paulo angustatis, inaequaliter rotundo-cuneatis,