

# ICONES FILICUM SINICARUM

BY

HSIEN S'YU HU, D. S.

AND

REN CHANG CHING, B. S.

PARTICLE I

1930

1930

## 中國蕨類植物圖譜 第一卷

國立中央研究院自然歷史博物館植物技師秦仁昌  
靜生生物調查所植物部主任胡先明 編纂

國立中央研究院自然歷史博物館  
靜生生物調查所 合印

13.713  
9.6

中國蕨類植物圖譜

# ICONES FILICUM SINICARUM

BY

ISEN HSIU HU, D. S.

HEAD OF BOTANICAL DIVISION  
FAN MEMORIAL INSTITUTE OF BIOLOGY

AND

REN CHANG CHUNG, B. S.

BOTANIST OF  
METROPOLITAN MUSEUM OF NATURAL HISTORY  
ACADEMIA SINICA

FASCICLE I PLATES 1-50

第壹卷

057805

PUBLISHED BY  
THE METROPOLITAN MUSEUM OF NATURAL HISTORY  
ACADEMIA SINICA, NANKING, CHINA

AND  
THE FAN MEMORIAL INSTITUTE OF BIOLOGY  
PEIPING, CHINA

October, 1930

國立中央研究院植物研究所及生物調查所合印

TABLE  
PLATES OF FASCICLE I  
Arranged in Numerical Order

Plate	Page	Plate	Page
1	Helmiathostachys zeylanica, 錫蘭七指蕨.....1	26	Phyllitis delaraysi, 荷葉對開蕨.....51
2	Archangiopteris henryi, 亨利馬蹄蕨.....5	27	Phyllitis cardiophylla, 瓊崖對開蕨.....53
3	Trichomanes tereticaulum, 圓柄石衣蕨.....5	28	Blechnum eburneum, 象牙島毛蕨.....53
4	Woodia cinnamomea 赤色蕨.....7	29	Gymnospteris vestita, 金毛提蕨.....57
5	Cystopteris moupinensis, 滇冷蕨.....9	30	Plagiogyria henryi, 亨利瘤足蕨.....59
6	Dryopteris encephalla, 宜昌金星蕨.....11	31	(1-5) Adiantum greenii, 格氏褶扇蕨.....61
7	Aspidium longicirre, 燕尾三叉蕨.....13	(6-9) Adiantum nanum, 矮扇蕨.....63	
8	Aspidium eburneum, 墨柄三叉蕨.....15	32	Pteris deltoides, 巖鳳尾蕨.....65
9	Polystichum duthiei, 杜氏耳葉蕨.....17	33	Pteris hui, 胡氏鳳尾蕨.....67
10	Polystichum acanthophyllum, 刺耳葉蕨.....19	34	Pteris dimorpha, 二形鳳尾蕨.....69
11	Polystichum deltoides, 對生耳葉蕨.....21	35	Pteris actinopteroideis, 精製鳳尾蕨.....71
12	Polystichum hecatopterum, 鋸齒耳葉蕨.....23	36	Pteris paupercula, 貧毛鳳尾蕨.....73
13	Polystichum chunii, 陳氏耳葉蕨.....25	37	Pteris exelsa, 深鳳尾蕨.....75
14	Cyrtomium henrici, 單葉買索.....27	38	Vittaria paucicostata, 圓葉青帶蕨.....77
15	Cyrtomium nephrolepioides, 低頭買索.....29	39	Vittaria nana, 矮葉青帶蕨.....79
16	Cyrtomium loschitoides, 細買索.....31	40	Antrophyum petiolatum, 長柄車前蕨.....81
17	Cyrtomium fraxinellum, 槐葉買索.....33	41	Polypodium dactyloformioides, 烏柄水龍骨.....83
18	Microlepia chrysocarpa, 黃胞鱗蕨.....35	42	Polypodium metzgerae, 柔白水龍骨.....85
19	Lindsaya chienii, 陳氏褶扇蕨.....37	43	Polypodium oblongiorum, 瓊崖水龍骨.....87
20	Lindsaya chinensis, 華製褶扇蕨.....39	44	Polypodium triglossum, 三葉水龍骨.....89
21	Athyrium anisopterum, 岩腳蕨.....41	45	Polypodium ellipticum, 橢圓水龍骨.....91
22	Asplenium finlaysonianum, 網脈單葉蕨.....43	46	Polypodium leveillei, 萊氏水龍骨.....93
23	Diplazium pullingeri, 波氏雙葉蕨.....45	47	Loxogramme chinensis, 華劍蕨.....95
24	Diplazium pelucidum, 脫葉雙葉蕨.....47	48	Neochiropteris palmatopedata, 掌狀扇蕨.....97
25	Diplazium macrophyllum, 大葉雙葉蕨.....49	49	Elaphoglossum austro-sinicum, 華舌蕨.....99
		50	Cheilepennis bicuspis, 二尖燕尾蕨.....101

和 學  
PDG

TABLE  
**PLATES OF FASCICLE I**  
 Arranged in Alphabetical Order

	Page	Plate	Page Plate		
<i>Adiantum greenii</i> , 精武綫蕨.....	62	31	<i>Neochiropteris palmatopedata</i> , 掌狀綫蕨.....	97	48
<i>Adiantum nanum</i> , 矮綫蕨.....	63	31	<i>Phyllitis cardiophylla</i> , 瓊崖對開蓋蕨.....	53	27
<i>Antrophyum petiolatum</i> , 長柄草蓋蕨.....	81	40	<i>Phyllitis delavayi</i> , 有美對開蓋蕨.....	51	26
<i>Archangiopteris henryi</i> , 亨利馬蹄蕨.....	3	2	<i>Plagiogyria henryi</i> , 亨利瘤足蕨.....	59	30
<i>Aspidium eburnium</i> , 墨柄三叉蕨.....	65	3	<i>Polypodium daraeiformisoides</i> , 烏柄水龍骨.....	83	44
<i>Aspidium longicaule</i> , 高尾三叉蕨.....	13	7	<i>Polypodium ellipticum</i> , 橢圓水龍骨.....	97	45
<i>Asplenium finlaysonianum</i> , 劍絲草蓋蕨.....	43	22	<i>Polypodium levoillei</i> , 萊氏水龍骨.....	93	46
<i>Athyrium anisopterum</i> , 宿蹄蓋蕨.....	47	22	<i>Polypodium mengtzeense</i> , 蒙白水龍骨.....	85	42
<i>Blechnum eburneum</i> , 象牙烏毛蕨.....	55	28	<i>Polypodium oblongiosorum</i> , 長帶水龍骨.....	87	43
<i>Chiropteris bicuspis</i> , 二尖燕尾蕨.....	104	50	<i>Polypodium triglossum</i> , 三葉水龍骨.....	89	44
<i>Cystopteris moupinensis</i> , 雲冷蕨.....	9	5	<i>Polystichum acanthophyllum</i> , 刺耳葉蕨.....	19	10
<i>Cyrtomium fraxinellum</i> , 桃葉苣荬.....	33	17	<i>Polystichum chunii</i> , 鍾氏耳葉蕨.....	25	13
<i>Cyrtomium hemispermis</i> , 葱葉苣荬.....	27	14	<i>Polystichum deltoideum</i> , 對生耳葉蕨.....	21	11
<i>Cyrtomium kuschitoides</i> , 樹苣荬.....	31	16	<i>Polystichum duthiei</i> , 杜氏耳葉蕨.....	17	9
<i>Cyrtomium nephrolepioides</i> , 低酒苣荬.....	29	15	<i>Polystichum hecatopterum</i> , 鉅齒耳葉蕨.....	23	12
<i>Diplazium macrophyllum</i> , 大葉雙蓋蕨.....	49	25	<i>Pteris actinopteroides</i> , 翅尾鳳尾蕨.....	71	35
<i>Diplazium pellucidum</i> , 蝦葉雙蓋蕨.....	47	24	<i>Pteris deltoidea</i> , 鉅齒尾蕨.....	63	32
<i>Diplazium pollingeri</i> , 波氏雙蓋蕨.....	45	23	<i>Pteris dimorpha</i> , 二形鳳尾蕨.....	69	34
<i>Dryopteris encephalylla</i> , 宜昌金星蕨.....	11	6	<i>Pteris excelsa</i> , 深尾鳳尾蕨.....	75	37
<i>Elaphoglossum austro-sinicum</i> , 華舌蕨.....	99	49	<i>Pteris hai</i> , 胡氏鳳尾蕨.....	67	33
<i>Gymnopteris vestita</i> , 金毛樺蕨.....	57	29	<i>Pteris paupercula</i> , 貧毛鳳尾蕨.....	73	36
<i>Helminthostachys ayslanica</i> , 佛蘭七指蕨.....	1	1	<i>Trichomanes tereticulum</i> , 圓柄石衣蕨.....	5	3
<i>Lindsaya chienii</i> , 鍾氏假綫蕨.....	37	19	<i>Vittaria zana</i> , 矮葉書帶蕨.....	79	39
<i>Lindsaya chinensis</i> , 華假綫蕨.....	39	20	<i>Vittaria pauciambrata</i> , 圓葉書帶蕨.....	77	38
<i>Loxogramme chinensis</i> , 華劍蕨.....	95	47	<i>Woodia cinnamomea</i> , 赤色蘭蕨.....	7	4
<i>Microlepia chrysocarpa</i> , 黃地綫蕨.....	35	18			

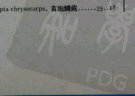


PLATE I.

**HELMINTHSTACHYS ZEYLANICA** Hooker et Bauer.

OPHIOGLOSSACEAE

**HELMINTHSTACHYS ZEYLANICA** Hooker et Bauer in Gen. Fil. t. 47 (1840); HK. in Gard. Ferns t. 28; Bedd. in Ferns S. Ind. t. 69; HK. in 2nd. Cent. Ferns t. 44; Christ in Farnkaut. Erde 365; Diels in Nat. Pfl. Fam. 1. 4. 472; C. Chr. Ind. 344 (1906); v. A. R. in Malay. Ferns 777 (1908).

*Osmunda zeylanica* Linn. Sp. Pl. 2: 1063 (1753).

*Botrychium zeylanicum* Sw. in Schrad. Jour. 1800, 2: 111 (1801).

*Helminthostachys dulcis* Kth. in Enum. 28, t. 1, fig. 1 (1822).

*Botryopteris mexicana* in Rel. Haenk. 1: 76, t. 12, fig. 1 (1825).

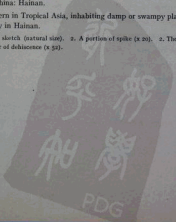
*Helminthostachys mexicana* Spring (1827).

*Rhizome* thick, fleshy, creeping, glabrous; *stipes* erect, 20-30 cm. long, greenish; *sterile segment* palmately pinnate, usually in 3 principal divisions, which are shortly petiolate, forked or pinnate; the ultimate segments lanceolate, 7-15 cm. long, 2-4 cm. broad, acuminate, the edge slightly toothed or entire, the base more or less cuneate; *veins* distinct, erect-patent, pinnate, usually forked; *testure* thin herbaceous; *fertile spike* solitary, arising from the base of *sterile segment*, 7-20 cm. long, 1 cm. broad, on a peduncle of about the same length.

*Distribution*: Australia, New Caledonia, India, Ceylon, Philippines, Queensland, Cochin-China, Formosa; China: Hainan.

A fairly common fern in Tropical Asia, inhabiting damp or swampy places; from China it was collected only in Hainan.

Plate 1. Fig. 1. Habit sketch (natural size). 2. A portion of spike (x 20). 2. The same with sporangia, showing the manner of dehiscence (x 52).



第一圖

錫蘭七指蕨 (猴齒小草科)

*HELMINTHOSYCHYS ZEYLANICA* Hooker et Bauer

地下莖粗壯，肥厚。葉片：無鱗片；葉柄直立，長二十至三十粉，幾綠色；無子囊葉葉狀普通三裂，其短柄，再分叉成二次羽狀；最後葉片披針形，長七至十五粉，寬二至四粉，兩尖端，略成齒牙狀或幾全緣，基部約成楔形；葉脈顯明直立間脈，羽狀，通常分叉；葉體薄草質；孢子囊穗單生，自無子囊葉葉片之基部生出，長七至十二粉，寬一粉，柄長略同。

分布：澳洲，牛加里曾尼亞，印度，錫蘭，菲律賓，臺灣；中國：海南。

本種為亞洲之熱帶常見之蕨，多生於卑濕之地，在中國僅海南島有之。

圖註：1. 植物全形（原大）。2. 孢子囊穗之一部（放大二十倍）。3. 同前之其孢子囊者示其開裂之情形（放大五十二倍）。



PLATE 2.

**ARCHANGIOPETRIS HENRYI** Christ et Giesenhagen

MARATTIACEAE

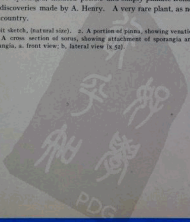
**ARCHANGIOPTERIS HENRYI** Christ et Giesenhagen in Flora Regensh. 73 (1899); Christ in Bull. Boiss. 7: (1899); Diels in Nat. Pfl. Fam. 1.4.439; C. Chr. Ind. 62 (1906); Matthew in Journ. Linn. Soc. 39:342 (1911).

*Rhizome* not seen; *stipe* about 50 cm. long, thick as swan's quill, terete, obscurely green, not articulate to the rhizome, and like rachis and the petioles obscurely hairy with lanceolate scales; *frond* about 50 cm. long, 25 cm. broad, ovate, pinnae remote, alternate, 3-5 on each side, similar to the terminal one, oblong-ovate, acute, 25 cm. long, 6 cm. broad, entire, slightly crenulate above the middle, acutely serrate towards the apex, petiole 1.5-2 cm. long, blackish, inflated, conspicuously pilose; *leaflets* thin chartaceous, light green, stipes and petioles rather succulent; *veins* dense, about 80 in each side, almost horizontally patent, almost extending to the margin; *sori* medial, with a broad free space about  $\frac{1}{2}$  cm. broad from the margin and the costa, linear, reddish-brown, about 80 on each side, to 2 cm. long,  $1\frac{1}{2}$  mm. broad, exinduciate.

Distribution: Yunnan.

This peculiar fern holds a systematic place between *Dawsonia* of America and *Angiopteris* of Tropical Asia, from the latter, it differs in elongate moniliform medial sori consisting of numerous sporangia, inflated petiole and simply pinnate frond. One of the most noteworthy discoveries made by A. Henry. A very rare plant, as not been known elsewhere in this country.

Plate 2. Fig. 1. Habit sketch, (natural size). 2. A portion of pinna, showing venation and a portion of sori (x 16). 3. A cross section of sori, showing attachment of sporangia and paraphyses (x 46). 4. Two sporangia, a. front view; b. lateral view (x 52).



## 第二圖

## 亨利馬蹄蕨 (觀音座蓮科)

## ARCHANGIOPTERIS HENRYI Christ et Giesenhagen.

地下莖未詳，葉柄長約五十粉，形如珊瑚骨，圓筒形，暗綠色，與地下莖不成關節，覆以披針形之鱗片及毛，葉軸及小葉柄亦如之；葉體長五十粉，寬二十五粉，卵圓形，小葉相距略遠，互生，每個有三五枚，與頂端小葉形態相同，長卵圓形，先端，長至二十五粉，寬六粉，全緣，自中部以上略成小圓曲狀，小葉柄長一五至二粉，幾黑色，中空，或有顯明之長毛；葉體薄紙質，淡綠色，葉柄及小葉柄頗肥厚多汁；葉脈密生，每個約八十條，幾平行闊弧，幾達葉緣；子囊群居中部，與中肋或葉緣間成半粉寬之空際，紅褐色；每個有八十個，長達二粉，寬達一粉半，無子囊單五。

分布：雲南。

本種特殊與在系統學之地位在美國之 *Danaea* 及亞洲植物之觀音座蓮 (*Angiopteris*) 之間；與後者差別在長念珠狀生於中間之子囊群，由多數孢子囊集合而成，與其肥大之葉柄及一次羽狀之葉面；此種為 A. Henry 氏最有價值之發見，在雲南省外尚未發見者。

圖註：1. 植物全形(原大) 2. 小葉之一部示葉脈及子囊群之一部(放大十六倍) 3. 子囊群之橫斷面示孢子囊之附着及隔片(放大十六倍) 4. 兩孢子囊，a. 前面，b. 側面(放大五十二倍)。





## PLATE 3.

**TRICHOMANES TERETICAULUM** Ching.

## HYMENOPHYLLACEAE

**TRICHOMANES TERETICAULUM** Ching\* in Sinensia 1:2 (1929)

*Rhizome* naked or nearly so, very short, interwoven in dense wiry fibrous roots; *stipes* densely caespitose-fasciculate, wiry, rigid, terete, not winged or only narrowly winged towards apex, 4-6 cm. long or longer, naked; *fronds* glabrous, subdeltoïd to linear; oblong, 4-6 cm. long, 2-2.5 cm. broad, 3-pinnatifid, rachis narrowly winged throughout; pinnae 3-5 on each side, remote, erect-patent, oblong-ovate, 1-2 cm. long, the upper ones gradually shortened; *texture* thin-herbaceous, translucent, dull green; *veins* distinct, 1 to each segment, spurious veinlets wanting; *sori* terminal on ultimate segments, mostly immersed, 2-3 to each pinna, inducium short funnel-shaped, slightly dilated, obscurely undulate at mouth not bifid, receptacle long-exserted, stout, dark brown.

Distribution: Kwangsi

Plate 3. Fig. 1. Habit sketch, (natural size). 2. A portion of pinna, showing venation and indusia (x 4).

\*For the species by Ching, readers are referred to Sinensia 1: p. 1-13 (1929), the Metropolitan Museum of Natural History, Academia Sinica.

## 第三圖

## 圓柄石衣蕨 (鏡蕨科)

**TRICHOMANES TERETICAULUM** Ching

地下莖短，裸露或微裸露，密被於根絲狀之纖維狀根中；葉柄密生而密，根絲狀，硬直；葉形，無翼或僅頂部有狹翼，通常長四至六吋，或更長，無鱗片；葉體無毛，幾三角形至線長方形，長四至六吋，寬二至二·五吋，三次羽狀分裂，葉軸全體具狹翼，一次小葉每個三至五枚，其間相距頗遠，背面開裂，長方形，長一至二吋，上部者則漸短；二次小葉二至四，全緣或二至三次羽狀分裂，而成線形全緣之小裂片，葉薄膜質，半透明，暗綠色；葉脈清晰，每小葉片僅一徙，無假脈；孢子囊位於最後裂片之頂端，常下陷，每一次小葉二至三枚，孢子囊蓋短，漏斗狀，微張開，其口部或不顯明波狀，不二裂，孢子囊蓋之柄長突出，甚粗大，暗棕色。

分布：廣西。

圖註 1. 植物體全形 (原大) 2. 一次小葉之一部，示葉脈與孢子囊蓋 (放大四倍)。



## PLATE 4.

## WOODSIA CINNAMOMEA Christ

## POLYPODIACEAE

**WOODSIA CINNAMOMEA** Christ in Bull. Geogr. Bot. Man. 122 (1906).

*Rhizome* thick, short, erect or oblique, clothed with pale-red lanceolate or linear-umbulate entire membranaceous scales; *stipes* densely tufted (5-15 together), 2-5 cm. long or much longer in barren leaves, stramineous, densely clothed near the base with scales similar to those on rhizome, ferruginously pilose in other parts, particularly the under surface; *frond* usually oblong-lanceolate, 6-12 cm. long, 1.8-2.5 cm. broad, simply and usually evenly pinnate, slightly reduced towards the base; *pinnæ* sessile or subsessile, horizontally patent, 8-14 cm. on each side, opposite or subopposite, sometimes alternate, 6-8 mm. apart, ovate-oblong, base equal, rounded or somewhat dilated, subtruncate or subcordate-truncate, crenate-serrate or deeply pinnatifid in barren leaves, 8-12 mm. long, 3-5 mm. broad at the base, the barren ones much broader with shortly cuneate base and pinnatifid over half way down into 3-4 rounded, subentire or slightly crenulate lobes on each side; *sori* completely hidden in thick tomentum, *inducium* globose at first, ruptured at last into long-ciliate lacinae; *sporangia* 4-6 to each sorus, dark brown, very shortly stipitate.

Distributions: Szechuan.

This distinct fern belonging to § *Physosabinia* is allied to *Woodsia rosthorniana* Diels, but differs in small more numerous pubescent longer pinnæ, and stiff rachis; with a habit intermediate between *W. polystichoides* Eaton and *W. rosthorniana* Diels.

Plate 4. Fig. 1. Habit sketch (natural size). 2. A pinna with tomentum removed, showing venation and sori (x 5). 3. A portion of pinna, showing disposition of sori and inducia (x 15). 4. Two inducium hairs (x 108). 5. Hairs from the rachis (x 108). 6. Scales from the base of stipe (x 35).

## 第四圖

## 赤色蕨麻(水龍骨科)

WOODSIA CINNAMOMEA Christ

地下莖肥厚而短，直立或斜臥，上覆鱗片，鱗片膜質，色淡紅，披針形或線形；葉柄五至十五，簇生，長一至五粉，其不生孢子囊群者尤長，暗褐色，近基部尚密覆同樣之鱗片，他部則被褐色之薄毛；葉身通常闊披針形，長六至十二粉，寬一八至二·五粉；通常偶數羽狀，鮮奇數羽狀，向基部則略退化；小葉平展，無或幾無葉柄，每個八至十四枚，對生成或對生，鮮互生，其間相距六至八釐，卵長方形，基部對稱，圓形或略擴大，幾截形或幾心臟截形，邊緣具波狀刻齒，其在無孢子囊羣之葉則為羽狀深裂，長八至十二釐，寬三至五釐，無孢子囊者則尤闊，葉基部切楔形，每個具三至四羽狀裂片，各裂片圓形，全緣或稍有小波齒；孢子囊群深藏於密毛之下，子囊群呈粉為球形，破裂後則成具長纖毛之裂片，每孢子囊群中有四至六孢子囊，孢子囊暗褐色，柄甚短。

分布：四川，雲南，貴州。

本種屬於 *Physmatium* 系，與 *Woodsia rosthorniana* Diels 相近，與之異者為較多小形有薄毛而較長之小葉及堅硬之葉軸，其外形在 *W. polystichoides* Eaton 與 *W. rosthorniana* Diels 之間。

圖註：1. 植物體全形(原大)。2. 除去絨毛之葉片，示葉與孢子囊群之分布(放大五倍)。3. 小葉片之一部，示孢子囊群與子囊群蓋之排列(放大十五倍)。4. 二子囊之毛(放大百〇八倍)。5. 葉軸之毛(放大百〇八倍)。6. 葉柄基部之鱗片(放大三十五倍)。

PLATE 5.

**CYSTOPTERIS MOUPINENSIS** Franchet

POLYPODIACEAE

**CYSTOPTERIS MOUPINENSIS** Franch. in Nouv. Arch. Mus. 2. 10: III (1887); C. Chr. Ind. Suppl. 46 (1913-17); Hand-Mat. in Symb-Sinic. VI: 20 (1929).

*Davallia triangularis* Baker in Ann. Bot. 5: 202 (1891).

*Rhizome* slender, wiry, wide, creeping, subglabrous; *stipes* slender, elongate, far apart, 10-15 cm. long, greenish, glabrous; *frond* deltoid-ovate, subtripinnate, 10-17 cm. long, 6-10 cm. broad at the base, attenuate to the fine acuminate or caudate apex; *pinnae* all petiolate, erect-patent, 2-3 cm. apart, alternate, the basal ones lanceolate, 4-7 cm. long, 5-2.2 cm. broad, acuminate, cuneate at the base; *pinnules* subrhombic-ovate-oblong, about 6-11 on each side, the upper inner base straight, the lower cut away to the costa, the lower ones pinnate or deeply pinnatifid towards the base; lobes ovate, with rounded inciso-dentate apex; *texture* thin herbaceous; *sori* mostly 6-8 sometimes only 3 to each pinnule, dorsal on the veinlets; *inducium* glabrous, thin membranaceous, at last evanescent.

Distribution: Szechuan, Yunnan, Tibet.

A fairly uniform and distinct endemic species, closely related to *C. smitica* A. Br. et Mille, differs in glabrous inducium, smaller frond and cutting. First discovered by Père David in Tibet, later by Delavay in Yunnan and again by Wilson in W. Szechuan. Our figure is drawn from Wilson's No. 5311.

Plate 5. Fig. 1. Habit sketch (natural size). 2. A pinnule from basal part of the pinna showing venation and sori (x 16).



## 第五圖

## 滇冷蕨 (水龍骨科)

*CYSTOPTERIS MOUPINENSIS* Franchet

地下常微弱根絲狀，匍匐甚廣，幾光滑；葉柄細長，杵距甚遠，色微綠，無毛，長十至十五粉，葉體三角卵圓形，幾三次羽狀分裂，長十至十七粉，基部寬六至十粉，頂部由尖至稍銳尖或尾狀；一次小葉俱有小葉柄，直而圓扁，其間相距二至三粉，互生，在基部者呈披針形，長四至七粉，寬一·五至二·二粉，頂部尖銳，基部楔形；二次小葉楔形或卵形或長方形，每個六至十一枚，上內基部修直，基部下部割到截至中點，其在下部者每至葉基又呈羽狀或深入之羽狀分裂；裂片卵圓形，具圓形而有深刻之齒之頂部；葉薄革質；孢子囊群通常每二次小葉具六至八枚，有時僅三枚，位於網脈背面；子囊群蓋無毛，薄膜質，終則失去。

分布：四川，雲南，西藏。

此種為一顯明特產之種，與 *C. sudetica* 相近，惟其子囊群蓋無毛，葉較小，而裂片亦不同，Père David 最初發見於西藏，後 Delavay 採得於雲南，Wilson 繼得之於四川，本圖則根據 Wilson 之標本而繪者也。

圖註：1. 植物體全形（原大） 2. 小葉基部之二次小葉，示葉脈與孢子囊群（放大十六倍）。



## PLATE 6.

**DRYOPTERIS ENNEAPHYLLA** (Baker) C. Christensen

## POLYPODIACEAE

**DRYOPTERIS ENNEAPHYLLA** (Baker) C. Chr. Ind. 263 (1905); Matthew in Journ. Linn. Soc. 38:362 (1911).

*Nephrodium enneaphyllum* Baker in Journ. Bot. (1887) 170; Diels in Nat. Fl. Fam. 1. 4. 166.

*Caudex* erect, thick as a thumb, clothed in dense reddish-brown lanceolate acuminate membranaceous scales to 2 cm. long; *stipes* tufted, stramineous, terete beneath, deeply grooved above and so is the rachis, nearly 30 cm. long, densely scaly near the base, become rather sparsely so upward, scales at the base similar to those only rhizome; *frond* deltoid-oblong, 20-30 cm. long and a little less broad, simply imparipinnate, moderately firm in *texture*, green and glabrous on both sides; pinnæ 3-5 on each side, the terminal one similar to the lateral ones, shortly petiolate, lanceolate-oblong, 10-13 cm. long, 2.5 cm. broad, shallowly crenate, truncate or subtruncate at the base, blunt at the apex; *veins* in numerous pinnate subpatent groups, veinlets fine, ascending, 3-4 on each side of the lateral veins; *sori* large, in 3-4 irregular rows, almost restricted to the central half of the pinnæ, leaving a broad free margin, medial on the veinlets, inducium large, peltate, brown, glabrous, with a slightly depressed centre, subsistent.

Distribution: Hupeh, Fukien.

Rather a variable species, evidently intermediate between *D. podophylla* (Hk.) and *D. sieboldii* (van Houtte) with a much stronger approach to the latter. It was discovered by A. Henry around Ichang, W. Hupeh. Henry's No. 3217, which has rather deeply lobato-incised pinnæ with truncate or subtruncate base, while Henry's No. 7881 from the same locality deviates from the type in much larger pinnæ (to 17 cm. long, 3.5 cm. broad) with rounded base, only shallowly crenulato-serrate margin, and 1-2 irregularly seriate sori, confined to the inner half breadth of the pinnæ. Dunn's specimen, No. 3830, from Central Fukien (1905) agrees well with Baker's type except that it has still more finely crenato-serrate margin than Henry's No. 7881, and yet it should belong here.

Plate 6. Fig. 1. Habit sketch (natural size). 2. A portion of pinna showing venation and sori (x 2). 3. A portion of pinna showing inducium and sori in situ on the veinlet and the way of insertion of sporangia (x 6). 4. Scales on the base of stipe (x 8).

## 第六圖

## 宜昌金星蕨 (水龍骨科)

**DRYOPTERIS ENNEAPHYLLA** (Baker) C. Christensen

地下莖直立，大如拇指，密被鱗片，鱗片橢圓，紅褐色，披針形，上部寬銳，長二粉；葉柄簇生，稍彎曲，下面呈圓形，上面與葉柄俱具深溝，長度三十粉；近基部處密覆鱗片，漸上漸稀，其在葉柄基部者，與地下莖之鱗片相同；葉身三角長方形，長二十至三十粉，寬則較高為稍後，一次羽狀分枝，葉頗堅固，上下兩面俱綠色無毛；小葉七至十一枚，頂生者與側生者相似，具短柄，披針長方形，長十至十三粉，寬二、五粉，緣具淺波狀齒，基部截形，頂部鈍形，葉脈分佈成多數羽狀而疏闊之小脈，小脈離葉面上彎，在側脈之兩側各具三至四對；孢子囊群成三至四不整齊之行列，幾全限於小葉中部之半，餘有其間之邊緣，位於側脈之中部，孢子囊群大，盾狀，褐色無毛，中部略凹，幾永存。

分布：湖北，福建。

本種為易於變異之一種，位於 *D. podophylla* (Hk.) 與 *D. sieboldii* (van Houtte) 之間，而尤與後種相近，A. Henry 始發現於鄂西之宜昌附近，Baker 之記述，蓋根據其 3257 號之標本也，小葉具深裂片，基部截形或廣截形為其特徵，而 2581 號亦採自宜昌附近，小葉頗大，(至一七粉寬三、五粉)，基部圓形，僅有淺波齒之緣，孢子囊群分佈為一至二不整齊之列，亦位於小葉主動脈之半程，Dunn 在圖之中部亦採得此種標本，與 Baker 之原式頗似，與 2581 號較則僅波牙較細耳。

圖註 1. 植物全形 (原大)。 2. 小葉之一部表示葉脈與孢子囊群 (放大二倍)。 3. 小葉之一部表示孢子囊群蓋與孢子囊群及孢子囊附著於葉脈上之狀 (放大六倍)。 4. 葉柄基部之鱗片 (放大八倍)。



PDG



## PLATE 7.

**ASPIDIUM LONGICRURE** Christ

## POLYPODIACEAE

**ASPIDIUM LONGICRURE** Christ in Bull. Geogr. Bot. Mans. (1909) Mém. xx. 169; C. Chr. Ind. Suppl. 8 (1906-13); Matthew in Journ. Linn. Soc. 39: 343 (1911).

*Sagresia longicrura* Christ in Bull. Geogr. Bot. Mans. (1906) 250.

*Stipe* to 30 cm. or more long, shining, reddish-brown, glabrous; *frond* deltoid-oblong, 40 cm. long, 35 cm. broad, bipinnate to tripinnatifid in the lower part, rachis and the base of costa shining, light ebeneous, deeply grooved above; terminal pinna large, petiolate, deeply trilobate, deltoid, the central lobe oblong, 15-30 cm. long, 5-10 cm. broad, margin coarsely repando-lobulate, with the base of lobes broadly adnate, cuneate-elongate, repand; lateral pinnae 3 on each side, opposite, 12-16 cm. apart, the lower ones 14 cm. long, the upper ones 8 cm. long, long-petiolate, the uppermost ones subsessile, oblong, caudate, with obtuse hastate base, the middle pinnae deeply 3-lobed down to the base, the lowest pinnate; pinnules 2, far apart, petiolulate, with hastate or deeply lobed base, the terminal pinnules deeply trilobate; all pinnae ascendingly patent, the uppermost pinnules to 10-13 cm. long, 4 cm. broad, margin repando-crenate, all pinnae and pinnules acuminate, or long caudate; lateral veins prominent, almost reaching the margin, areolae irregularly quadrangular, in 2-3 rows between main veins and about 6 between costa and margin, usually without free included veinlets; sori very numerous, campital or dorsal, small, almost punctate, dark brown, irregularly disposed, inducium destitute; *texture* thin herbaceous, hirsute green, surfaces naked but the costa and veins are shortly pubescent.

Distribution: Kweichow, Kwangsi.

A bipinnate species of the group of *A. cicatarium* Sw., very distinct in pinnae and lower pinnules being long-petiolate, narrowly elongate, few-lobed pinnules and segments with very long-acuminate apex, stipes and rachis reddish-ebeneous, polished, and very small irregular exinduciate sori. Collected for the first time by Père Cavalierie in Kweichow, (1904), later by J. Esquirol in the same locality and of very late from Kwangsi.

Plate 7. Fig. 1. Habit sketch of a portion of frond (natural size). 2. A portion of segment, showing venation and sori (x 8). 3. Sporangium (x 166).

## 第七圖

## 燕尾三叉蕨 (水龍骨科)

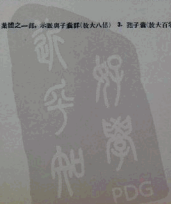
## ASPIDIUM LONGICRURE Christ

葉柄長達三十粉，或較長，光澤無毛，褐紅色；葉體薄脆黃，鮮綠色，僅肋及脈上有短毛，三角長方形，長四十粉，寬三十五粉，生在較下部者具二次羽狀複葉至三次羽狀分葉，軸輪與肋俱光澤，淡黃色，上面具深槽，生於頂上者大而具小柄，深入三裂，三角形，中裂裂片長方形，長十五至三十粉，闊五至十粉，緣有規則不整齊之微裂，裂片下部併生，楔形修長，緣不整齊，側生之一次小葉在每側各三枚，對生，其間相距十二至十六粉，最下者長十四粉，其上者長八粉，具長柄，最上者幾無柄，長方形，頂部尾狀，基部鈍狀形，二次小葉二枚，相距頗遠，微有柄，基部狀形，或深裂，長十至十三粉，緣具不整齊之波狀齒，與一次小葉同具尖銳或長尾狀之頂部，側脈顯明，幾達於葉緣，孢子囊孔是不整齊之四角形，或二至三列分於側脈間，中肋至葉緣之間可容六枚，常無清晰之網脈，孢子囊群頗多生邊緣小脈上或背脊上，小而作點狀，深褐色，呈不整齊之排列，無子囊群蓋。

分布：貴州，廣西。

本種為 *A. cicutarium* 系中具二次羽狀複葉之一種，最顯明者在其一次小葉與下部之二次小葉俱長柄而有長柄，二次小葉之軸分葉者與各裂片俱具長尖銳之頂部，葉柄葉軸俱赤褐色，有光澤；孢子囊群微小不整齊，此種 1904 年 Péez Cavalerie 始發見於貴州，後 Péez Esquirol 亦在貴州採得之，最近則見於廣西。

圖註：1. 植物體之一部(原大) 2. 葉體之一部，示葉與子囊群(放大八倍) 3. 孢子囊(放大百零六倍)。



## PLATE 8.

## ASPIDIUM EBENIUM C. Christensen

## POLYPODIACEAE

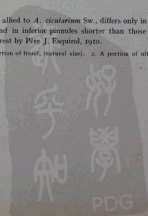
**ASPIDIUM EBENIUM** C. Chr. Bull. Geogr. Bot. Mans (1913) 138; Ind. Suppl. 5 (1913-16).

*Stipes* and rachis shining, ebeneous, very shortly tomentose on the upper side; *frond* ample, deltoid, about 70 cm. long, 60 cm. broad at the base, dark green; *texture* thin herbaceous, costa like the rachis very shortly reddish-tomentose on the upper side, otherwise the entire plant glabrous, bipinnate to tripinnatifid; the lower 2 pairs of pinnae petiolate, alternate, 15 cm. apart, the upper 2 sessile but free, the uppermost broadly adnate or confluent upward, connected by a wing 1-3 cm. broad, the basal pinnae much the largest, pinnate below into sessile or adnate pinnules, pinnatifid upward into 6-8 segments connected by a wing 1-1.5 cm. broad, the basal 2 free pinnules 10-17 cm. long, 5-6 cm. broad, oblong-lanceolate, acuminate, cuncate-rounded at the base, pinnatifid half way down, the middle segments about 10 cm. long, 3-5 cm. broad, broadly lobed or pinnatifid; lobes subfalcate, obtuse, broadly crenate, 1-1.5 cm. broad; the middle pinnae and the segments below the apex of the frond pinnatifid in the similar manner as the basal pinnae; *veins* distinct, reticulate, areolae 5-6-gonous, usually with included free veinlets; *sori* subirregular, on the ultimate lobes, uniseriate, 7-3 on each side of the costule, leaving a broad blank space in the middle, inducium corrugated, persistent, peltate, dark brown.

Distribution: Kweichow.

A large fern in the genus closely allied to *A. cicutarium* Sw., differs only in shining ebeneous stipe, rachis and costa, and in inferior pinnules shorter than those next above. Collected in Kweichow under forest by Père J. Esquirol, 1920.

Plate 8. Fig. 1. Habit sketch of a portion of frond, (natural size). 2. A portion of ultimate segment, showing venation and sori.



PDG

## 第八圖

## 黑柄三叉蕨 (水龍骨科)

ASPIDIUM EBENIUM C. Christensen

葉柄及葉軸深黑色有光澤，上面具短絨毛；葉體三角形頗大，長約七十釐，基部寬約六十釐，深綠色，薄質，主脈亦具綠色之短絨毛，此外則全部光滑，二次至三次羽狀分裂，最下二對一次小葉有柄互生，相距約十五釐，上部二小葉無柄，至最上之小葉則基部連合成連合其較上部分，中間聯結之葉寬一至三釐；基部之一次小葉最大，羽狀分裂至下部成無柄或合着之二次小葉，上部裂片六至八個，各裂片間有翼相連，翼寬一釐至一釐半，葉部兩側立二次小葉長十至十七釐，寬五至六釐，作長方披針形，漸尖頂端，基部楔形，羽狀分裂至一半，中間裂片約長十釐，寬三至五釐，有寬裂片或羽狀分裂，裂片略呈鐘形，鈍頭有圓鈍鋸齒，長一至一釐半，中部一次小葉與頂部之裂片作羽狀分裂與基部一次小葉略同；脈紋顯明，網狀，網孔作五或六角形；子囊群不甚規則，在最頂部之裂片上，成單行，延中脈而生，左右各有七個至三個，中間留有甚顯之空隙；子囊羣蓋永存，盾狀，深褐色。

分布：貴州。

本種為本屬中最大之種，與 *A. cicutarium* Sw. 一極相近，而其異點則在葉無光澤之葉軸與中肋，而下部二次小葉較其上者略短耳，本種最初為 Péro J. Esquirol 于一千九百有十年採於貴州森林中。

圖註：1. 全植物之一部 (原大) 2. 上部之葉片，示其脈絡及子囊群。



PDG

## PLATE 9.

## POLYSTICHUM DUTHIEI (Hope) C. Christensen

## POLYPODIACEAE

**POLYSTICHUM DUTHIEI** (Hope) C. Chr. Ind. 72 (1905), 581 (1906); Medd, Göteborg. Bot. Trädg. 1:94 (1924); Hand-Mat. in Symb. Sinc. vi, 26 (1929).

*Aspidium duthiei* Hope in Journ. Bomb. Nat. Hist. Soc. 12: 532, t. 6 (1900).

*Polystichum glaciale* Christ in Bull. Soc. Bot. Fr. 52. Mém. 1: 28 (1905).

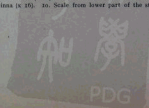
*Sesolepidium glaciale* Christ in Bot. Gaz. 51:350 c. fig. (1911).

*Rhizome* thick, erect, densely rooted; leaves tufted (4-7 together), *stipes* 5 cm. long, covered with dense dimorphic scales, the one short, fibrillose, the other broad, ovate, acuminate, 6 mm. long, ochraceous-yellow; *frond* 12-25 cm. long, 1.5-2.5 cm. broad at the middle, linear-lanceolate, tapering to both ends, simply pinnate, rachis thickly clothed with lanceolate subulate scales; pinnae conferted, the lower ones much reduced, ovate, 4 mm. long, the middle ones to 1.2 cm. long, oblong, equal, margin strongly reflexed, crenate, truncate or cordate at the base; *texture* thick coriaceous, greenish-flavescens, villose with whitish adpressed setaceous scales above, the under surface clothed in dense large lanceolate brown scales from the costa and the smaller ones from the veins, the scales lanceolate-linear, scarious, 2 mm. long; *seis* entirely hidden, forked or subpinnate near the base; *sori* 3-4 cm each side of the costa, almost rounded, hidden, *inducium* large, thin, brown, very fugaceous.

*Distribution*: Yunnan, Szechuan, also N. W. India.

Hope's type from N. W. India was a much smaller plant than the plant from W. China. In general habit, this species resembles *P. Jackenense* (HK.) Bedd., differs in much shorter stiff stipe and stouter rachis, the dense covering of disproportionately large scales, the adpressed white setae on the upper surface and thick coriaceous texture. Its first record from China was credited to Père Delavay, who found it in 1884 at the foot of a glacier in Su-kiang, Yunnan, for which reason, Christ called the plant *P. glaciale* by referring to Hope's *P. duthiei*, to which it was finally reduced by Dr. Christensen.

Plate 9. Fig. 1. Habit sketch (natural size). 2. A pinna from middle part of the frond, upper side (x 4). 3. The same, under side (x 3). 4. The same, showing venation and attachment of sori. 5. A portion of the pinna, showing receptacles of sori with a few scales attached (x 15.). 6. Scale from the under side of pinna (x 16). 7. Scale from rachis (x 16). 8. Smaller scale from the rachis (x 16). 9. Scale from the upper side of the pinna (x 16). 10. Scale from lower part of the stipe (x 16).



## 第九圖

## 杜氏耳葉蕨 (水龍骨科)

POLYSTICHUM DUTHIEI (Hope) C. Christensen

地下莖肥大直立多根；葉叢生四枚至七枚成一簇；葉柄長五粉，密生鱗片，其形可別為二種，一種鱗片短纖維狀，另一種則呈寬大卵形，披針形，長至六粉，紅黃色；葉體長十二至十五粉，中部寬一粉至二粉五，狹長披針形，兩端漸窄，一次羽狀分裂，葉軸覆以披針形具錐頭之鱗片；一次小葉簇生，在下部者甚小，卵圓形，長四粉，中部者長至十二粉，形長圓，基部稍窄，邊緣反卷，波齒狀，基部楔形或心臟形，葉體為厚革質，黃綠色，上部具疏鬆白色緊閉剛毛狀之鱗片，下部則中肋附近密生大形披針形褐色之鱗片，在脈絡附近者則略小，作狹長披針形，膜質，長至二粉；脈紋內陷不顯明，近基部處歧出或輪或羽狀；子囊群中肋兩側各三四枚，其形幾圓，不顯明，子囊群蓋大，黃薄，褐色，最易脫落。

分佈：雲南，四川，印度西北部亦有之。

註：本種經 Hope 氏採自印度西北部者其形比中國西部所產者小，本種性質與 *P. lachreseae* (Blk.) Bedd. 相近，而本種之葉柄較幼葉較硬，且上部密生大形鱗片，及平鋪之剛毛狀之鱗片，葉片為厚革質，此其不同之點也，因 Père Delavay 氏於 1884 年採自雲南冰川之麓，故 Christ 名之為 *P. glaciale*，後 Christensen 仍歸納之於 *P. duthieii* 云。

圖註：1. 植物全體 (原大) 2. 葉體中部之小葉上面 (放大四倍) 3. 同上之背面 (放大三倍) 4. 同上示其托及子囊群附著狀況 5. 小葉之一部示子囊群之托及數鱗片 (放大十五倍) 6. 葉背面之鱗片 (放大十六倍) 7. 葉軸上之鱗片 (放大十六倍) 8. 葉軸上之小形鱗片 (放大十六倍) 9. 葉上面之鱗片 (放大十六倍) 10. 葉柄下之鱗片 (放大十六倍)。

乎  
船  
覺  
PDG

## PLATE 10.

## POLYSTICHUM ACANTHOPHYLLUM (Franch.) Christ

## POLYPODIACEÆ

**POLYSTICHUM ACANTHOPHYLLUM** (Franch.) Christ in Bull. Soc. Bot. Fr. 52: *Mém* I. 30 (1905); C. Chr. Ind. 575 (1906); Matthew in Jour. Linn. Soc. 39: 384 (1901).

*Aspidium acanthophyllum* Franch. in Bull. Soc. Bot. Fr. 32: 18 (1885).

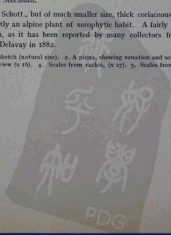
*Polystichum aculeatum* Schott. var. *acanthophyllum* Bedd. in Handb. Suppl. 43 (1892).

*Caudex* short, erect; *stipes* fasciculate, 3-8 cm. long, stramineous, angular, densely paleaceous, paleae yellow, concolored, dimorphic, the one narrow, linear, the other broadly ovate, abruptly cuspidate, slightly imbricate; *frond* narrowly lanceolate, acuminate, slightly reduced downward, 10-20 cm. long including the stipe, scarcely 2.2 cm. broad, bipinnatifid or bipinnate below under the pinnatifid apex, rachis densely scaly, scales yellow, linear-setaceous; pinnae subsessile, close, imbricate, somewhat distant below, *texture* rigidly coriaceous, lustrous green above, pale below, glabrous, ovate, 2-4 on each side, cut straight on the inner side and parallel to the rachis, margin thickened, strongly revolute, apex rigidly spinescent; *sori* uniseriate, dorsal on lateral veinlets, closer to the costa of pinnae or costules on basal pinnules or lobes, dark brown, indacium peltate, orbicular, margin slightly eroded.

Distribution: Yunnan, Szechuan.

Habit of *P. aculeatum* Schott., but of much smaller size, thick coriaceous texture and simpler pinnae. Evidently an alpine plant of xerophytic habit. A fairly common fern in Yunnan and Szechuan, as it has been reported by many collectors from that region since its discovery by Delavay in 1882.

Plate 10. Fig. 1. Habit sketch (natural size). 2. A pinna, showing venation and sori. 3. Two indusia, a, front view; b, lateral view ( $\times 16$ ). 4. Scales from rachis, ( $\times 27$ ). 5. Scales from rhizome ( $\times 27$ ).



## 第十圖

## 刺耳葉蕨 (水龍骨科)

*POLYSTICHUM ACANTHOPHYLLUM* (Franch.) Christ

葉柄厚短而直立；葉柄叢生，長三抄至八抄，稍褐色，有節，密生小銳緣狀鱗片，鱗片黃色，具一色，形式不一，一種細長線形，他種寬大卵形，突或尾狀尖頭，緣散包覆；葉體平披針形，漸尖頭，下部略縮小，長十至十二抄，基部二次羽狀分裂或上部二次下部簡單羽狀分裂，寬至二抄二疊，葉軸密覆以鱗片，鱗片黃色線形剛毛狀；一次小葉時具短柄或無柄，密葉，互和掩覆，在下部則稍疏，硬革質，上面光澤綠色，下面略淺而平滑，葉圓披針形，寬六至八疊，略具羽狀裂片；裂片卵圓形，每個各具二枚至四枚，由中肋分裂，與葉軸平行，邊緣較厚，向內卷，頂部具剛刺狀；子囊群成單列，生於葉脈之上部，近小葉片之中肋或基部小裂片之肋深褐色，子囊群蓋形狀，圓形，邊緣微有缺頭。

分布：雲南，四川。

本種之形態似 *P. aculeatum* Schott., 但較之殊小，而為革質，且葉之分裂比較窄能，此其異點也。就此而言本種實具较早性之高山植物也。在雲南及四川兩省甚為普通，和為 Delavay 氏在 1882 年採得。

圖註：1. 植物之全體 (原大) 2. 一次小葉示葉脈及子囊群 3. a. 子囊群蓋之前面 (放大十六倍) b. 同上側面 (放大十六倍) 4. 葉軸上之鱗片 (放大二十七倍) 5. 地下莖之鱗片 (放大二十七倍)。





## PLATE 11.

**POLYSTICHUM DELTODON** (Baker) Diels.

## POLYPODIACEAE

**POLYSTICHUM DELTODON** (Baker) Diels in Nat. Pfl. Fam. I. 4. 191; C. Chr. Ind. 580 (1905); Matthew in Journ. Linn. Soc. 39: 385 (1911).

*Aspidium deltodon* Baker in Gard. Chron. n. s. 24: 494 (1886).

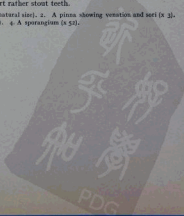
*Hemistichum deltodon* Léveillé, Flore du Kouy-tschou 496 (1915).

*Rhizome* short, erect, scales sparse, small, dark brown, lanceolate, acuminate, membranaceous, basal, rarely extending higher up; *stipes* tufted (5-10 together), 5-15 cm. long, slender, naked, stramineous; *frond* linear, elongate, simply pinnate, 10-20 cm. long, 2.5 cm. broad, scarcely narrowed downward, glabrous, moderately firm in texture; rachis subglabrous with a few small adpressed deltoid dark brown scales; pinnae close, sessile, 20-25 on each side, quadrate-ovate, cut straight on the inner side and strongly auricled on the upper, apex rounded, cuspidate, denticulate on the upper edge, usually entire on the lower; *veins* inconspicuous, pinnate, once forked; *seri* supra-medial, small, dark brown, usually confined to the outer half of the pinnae, 3-6 to a pinna, inducium small, glabrous.

*Distribution*: Szechuan, Yunnan, Hupeh, Kwangsi, and also Formosa.

This fern was first collected by Mariés in Ichang Gorge, about 20 li to the west of the city of Ichang, Hupeh. It is closely related to *P. auriculatum* Presl, differs only in short deltoid pinnae with few short rather stout teeth.

Plate 11. Fig. 1. Habit sketch, (natural size). 2. A pinna showing venation and seri (x 3). 3. A sorus with inducium attached (x 16). 4. A sporangium (x 52).



## 第十一圖

## 對生耳葉蕨 (水龍骨科)

*POLYSTICHUM DELTODON* (Baker) Diels

地下莖短而直立，疏被鱗片，鱗片形小，暗褐色，披針形，漸尖頭，薄膜質，多生基部，稀有延展至上部者；葉柄蓋頭，五枚至十枚，長五至十五粉，寬二粉半，下部略平，光滑，質極堅硬；葉軸幾光滑，具少數緊貼三角形暗褐色之鱗片；一次小葉密接而生，無柄，每個各二十至二十五枚，略呈方形圓形，內邊直截，上有大耳，頂部圓形，其尾狀尖頭，上邊有鋸齒，下邊通常全緣，脈歧不顯，羽狀。支脈一次分叉，子囊群生在中部之上半，形小，暗褐色，常限於小葉之外半部，每小葉具三至六枚，子囊群蓋小而光滑。

分布：四川，雲南，湖北及臺灣。

本種最早由 *Maries* 氏採於雅安昌城二十里之官昌峽，其性質與 *P. auriculatum* Presl 相近而本種之短小三角形之小葉具少數短而顯明之齒則又與後者不同。

圖註：1. 植物全形之一部 (原大) 2. 一次小葉示其脈紋及子囊群 (放大三倍) 3. 子囊群及子囊群之一部 (放大十六倍) 4. 孢子囊 (放大五十二倍)。



## PLATE 12.

## POLYSTICHUM HECATOPTERUM Diels

## POLYPADIACEAE

**POLYSTICHUM HECATOPTERUM** Diels in Engl. Jahrb. 29: 293 (1900); C. Chr. Ind. 582 (1906); Mathew in Jour. Linn. Soc. 39: 386 (1911).

*Polystichum auriculatum* Presl var. *stenophyllum* Baker in Jour. Bot. (1888) 227.

*Hemastium hecatopteron* Léveillé, Flore du Kouy-tschou 456 (1915).

**Rhizome** short, erect, thick as raven's quill, clothed like the stipes with moderately dense membranaceous brown dimorphic scales, the one broad lanceolate, the other linear-subulate, both are hair-pointed; **stipes** tufted [3-4 together], slender, terete beneath, bisulcate above, 5-15 cm. long; **frond** elongate linear, gradually tapering towards both ends, 20-35 cm. long, 2-3 cm. broad at the middle, pinnate; **pinnae** 40-50 on each side, 1.2-2 cm. long,  $\frac{1}{2}$  cm. broad, close or subimbricate, subrhombic-oblong, gradually deflexed downward, but the upper ones horizontally patent, the upper inner side straight and parallel to the rachis, much produced into a triangular auricle, provided at the apex with a bristle, the lower side cut away to the costa, apex rounded, margin spinuloso- or aristato-denticulate; **veins** inconspicuous, fine, pinnate, regularly once forked, except those towards the apex which are simple, the upper pinnae fertile; **sori** between the costa and margin, mostly 6-10 on the upper side and none or 2-4 on the lower side of the costa, inducium rounded, peltate, smaller than the sori, attached by the centre, which is slightly depressed and blackish.

**Distribution:** Szechuan

This is a uniquely distinct species, well marked by short scaly stipe and pectinate-ly close oblong pinnae with 8-10 often incurved long-aristate teeth on each side, the lower pinnae considerably abbreviated and strongly deflexed. This pretty fern was first discovered by Rev. Earnst Faber on Omei Shan early in 1886 and described two years later by Baker as *Aspidium auriculatum* Sw. var. *stenophyllum* in following words: "Approaching to *Aspidium lonchitis* in habit, with a frond a foot long and scarcely above an inch broad at the middle, with subrhomboidal spinulose conspicuously auricled pinnae much cut away on the lower side of the midrib" (Jour. Bot. XXVI, 227, 1888). It was, however, not until 1900 when Herr von Rosthorn's plants collected in Tapao Shan, in Nan-chuan, S. E. Szechuan (1891), was brought under the notice of Dr. Diels, who gave the name as it bears to-day, not quite sure then as to the identity of his species to Baker's var. *stenophyllum*. I have seen Faber's plant (No. 1305) in Hongkong Herbarium and found it is typical of Diels' species except with longer stipe (-12 cm.). Ample materials collected by Wilson in W. Szechuan show that fronds even from same rhizome may vary from 2-3-4 cm. in width, and it is with the broadest frond that the species somewhat approaches *P. auriculatum* Presl in habit but for long-aristate teeth and more sharp auricle. Evidently a fairly common fern in Szechuan, particularly on Omei Shan.—R. C. C.

Plate 12. Fig. 1. Habit sketch (natural size). 2. A pinna from the middle part of the frond, showing venation and sori (x 3). 3. A portion of the pinna, showing venation, sori and scales attached (x 12). 4. Scales from the stipes. (x 31) 5. Scale from the rachis (x 31). 6. Sporangium (x 145).

## 第十二圖

## 鋸齒耳葉蕨 (水龍骨科)

## POLYPODIUM HECATOPTERUM Diels

地下莖短，直立，寬如圓碟，密覆以薄質黃褐色具兩種形態之鱗片，鱗片一係寬披針形，他種尖錐形，皆具短毛狀頭端；葉柄三四枚叢生，細瘦，下面無毛，上面具兩條深溝，長五至十五份；葉條長線形兩端漸尖，長二十至三十五份，寬二至三份，一次羽狀分裂；一次小葉每個各約四十至五十個，小葉長十二至二十份，寬五份，密生或略相掩覆，略成長菱形，下部小葉漸向下彎，但上部者則中伸而出，小葉上方之內邊與葉軸平行，形成一三角形之耳，其尖端具刺，下方至中肋而漸尖，小葉之尖端圓形，邊緣具有刺頭之小鋸齒；葉脈甚細不明顯，支脈羽狀，作頗規則之一次分叉，但近頂部之支脈則為單行，上部之葉片具子囊群，子囊群生於中肋及葉緣之腋，在中肋之上方有六至十個，下方有二至四或全無，子囊群近圓形，盾狀，小於子囊群，中央用着點略陷入，深褐色。

分布：四川。

本種為最特殊之種，其短而有鱗片之葉柄密生細長圓形之小葉，每個具八枚至十枚彎曲而有長刺之側面，及下部漸向下彎之小葉，皆為最顯著之特性也。本種標本早經 E. Faber 氏採自峨嵋，Baker 氏定之為 *Aspidium auriculatum* Sw. var. *stenophyllum*。至 1900 年 Von Rostkorn 氏又採之於南川，由 Diels 定今名，但當時尚不知與 Baker 氏之變種是一是二也。前著者於香港植物園中得見 Faber 氏所採之標本，其葉柄似較 Diels 之記載略長，本種之具寬葉者似與 *P. auriculatum* 之習性相近，但本種尖銳之齒及上方深刺之耳狀裂片則又與後者不同，此種在四川分布甚廣，尤多見於峨嵋山。—仁昌

圖註：1. 植物全形 (自然大) 2. 一生於中部之一次小葉示其脈絡及子囊群 (放大三倍) 3. 一次小葉之一部示脈紋，子囊群及鱗片 (放大十二倍) 4. 葉柄上之鱗片 (放大三十一倍) 5. 葉軸上之鱗片 (放大三十一倍) 6. 孢子囊 (放大一百四十五倍)。

## PLATE 13.

**POLYSTICHUM CHUNII** Ching

## POLYPODIACEAE

**POLYSTICHUM CHUNII** Ching in Sinesia 1:2 (1929).

*Rhizome* thick strong, woody, rather short, oblique-ascending; scales large, dense, imbricate, membranaceous, ferruginous, broad ovate, long acuminate, 6-10 mm. long, 3-5 mm. broad; *stipes* fasciculate, 5-10-clustered, 8-12 cm. long, 2 mm. thick, rufo-stramineous, densely clad in dimorphic scales, the one similar to the rhizomatic ones, the other smaller, fibrillose-subulate or linear-subulate, extending throughout the rachis; *fronds* linear-lanceolate, 35-42 cm. long (including stipes 9-11 cm. long) 4-2.5 cm. broad, bipinnate, abbreviate towards base, long attenuate towards apex, gemmiferous and radicans at tip or a considerable distance backward; gemmae globular, densely clad with imbricate scales similar to the rhizomatic ones; pinnæ sessile, alternate or sub-opposite, rather conferted, horizontally patent, with the lower ones deflexed, numerous, 30-35 on each side of the rachis, glabrous above, fibrillose beneath, clad at the point of insertion beneath with a few ovate, acuminate, ciliate scales, 2-2.5 cm. long, 1 cm. broad at base, oblong-lanceolate, pinnate (except the terminal ones which are only aristate-crenate, or -serrate) below the middle, pinnatifid towards apex, strongly auricled on the anterior side; i.e., the basal pinnule on the upper side of the costa much the largest with its inner side cut parallel to the rachis with aristate-acute apex; pinnules 5-7, conferted, basal ones free, sessile, upper ones adnate, rhomboidal-ovate, entire or crenate, rounded and aristate at apex; *texture* thick coriaceous, shining green above, pale below; *veins* inconspicuous, lateral veinlets in the pinnules 3-5-jugate, free, mostly once-forked; *sori* small, uniseriate, 2-3 on each side of the costule, medial, dorsal on the veinlets, indusium small, coriaceous, persistent.

Distribution: Kwangsi.

Plate 13. Fig. 1. Habit sketch, natural size. 2. A pinna (x 2). 3. A pinnule from the base of pinna, showing venation and sori (x 12). 4. Scales from stipe (x 24). 5. Scale from rachis (x 24).

## 第十三圖

## 陳氏耳葉蕨 (水龍骨科)

## POLYSTICHUM CHUNII Ching

地下莖肥壯，木質，頗短，向上稍伸；鱗片大，密生，覆瓦狀排列，膜質，鐵青色，圓卵形，長漸尖頭，長六至十粉，闊三至五粉；葉柄密生，成五至十葉，長八至十二粉，粗二種，紅褐色，密被黃形之鱗片，鱗片一種似地下莖者，一種較小，纖維針狀或尖線狀，環葉軸之上；葉體線狀披針形，連葉柄共長三十五至四十粉，闊四·二至五粉，二次羽狀，向基部縮小，向頂部展長，在頂部或枝下之處發芽生株，芽圓形，密生如地下莖上所生之鱗片；一次小葉脫無柄，互生或近對生，頗窄葉，極剛強，下部者向下彎，在葉軸每側有三十至三十五枚，上面光滑，下面被纖維狀鱗片，在與下面葉軸連接處有數個半圓形突頭有纖毛之鱗片，長二至二·五粉，基部圓一粉，長圓狀針形，下部或頸狀復葉，頂端者僅有芒狀波齒或鋸齒，近頂部則頸狀分裂，在前部成耳狀；二次小葉五至七枚，窄葉，生基部者獨立，無柄，生上部者基部稍著，呈卵形半圓形，全緣或具波齒，頂部圓而作芒狀；葉體厚革質，上面光綠色，下面較淺；葉脈不顯明，二次小葉上之支脈三至五對，分佈，通常一次分叉；孢子囊狹小，一列，在中部兩個各二至三枚，生支脈背面之中部，子囊單室小，革質，永存。

分布：廣西。

圖註：1. 植物全形（自然大） 2. 一次小葉（放大二倍） 3. 一次小葉基部之二次小葉，示葉脈與孢子囊（放大十二倍） 4. 葉柄上之鱗片（放大五倍） 5. 葉軸上之鱗片（放大二十四倍）。



## PLATE 14.

## CYRTOMIUM HEMIONITIS Christ.

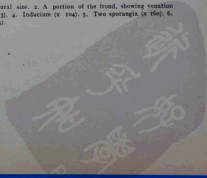
**CYRTOMIUM HEMIONITIS** Christ in Bull. Geogr. Bot. Mans. (1900) 138; Chr. Ind. Suppl. 101 (1906-13).

*Rhizome* oblique or erect, thick as man's finger, black, covered with the vestiges of persistent stipes; leaves fasciculate (3-6 together); *stipes* slender, but rigid, stramineous, blackish at the base,  $1\frac{1}{2}$  mm. thick, 10-15-18 cm. long, clothed near the base with ovate-lanceolate dark brown entire subulate scales  $2/3$  cm. long, the parts near the base of frond clothed with black setae, the matured plant almost glabrous; *frond* simple, hastato-triangular, base deeply cordate with narrow or close sinus, broadly auriculate, on each side, shortly acuminate or acute at the apex, 8 cm. long and broad, margin perfectly entire; *texturae* rigid, coriaceous, color light green above, paler and opaque below; *veins* conspicuous, close, flabellato-pinnate, very oblique, anastomosing into elongate large areolae with 1-2 excurrent included soriferous veinlets; *sori* numerous, brown, sparsely and irregularly disposed all over the under surface,  $1\frac{1}{2}$  mm. broad, subrounded, inducium peltate, larger than sorus, turgid, gray, with denticulate margin and raised black centre, persistent or falling off at last.

Distribution: Kweichow.

This interesting fern differs from all known species in the genus by its simple entire, broadly hastato-cordate leaves, resembling our *Phyllitis cardiophylla* (Hance) Ching in outline. It was first discovered in Pin-fa, Kweichow, by Père J. Cavalerie in 1908 and later in 1911 by Père J. Esquirol in the same locality. The addition of this species to the genus *Cyrtomium* has practically completed the uninterrupted line of development of all the types represented in the genus from the very simple form to pinnate and more ample bipinnate forms.

Plate 14. Fig. 1. Habit sketch, natural size. 2. A portion of the frond, showing venation and sori, natural size. 3. The same (x 3). 4. Inducium (x 104). 5. Two sporangia (x 106). 6. Scales from rhizome and base of stipe (x 5).



## 第十四圖

## 單葉蕨衆 (水龍骨科)

## CYTOMIUM HEMIONITIS Christ

地下莖斜生或直立，粗如人指，黑色，被有葉柄之殘餘；莖三至六個簇生；葉柄細硬，稍帶色，基部微黑，長十至十五或十八份，基部被有卵圓披針形暗褐色全緣尖銳之鱗片，鱗片長三分之二份；其在葉體基部下之部分被有黑色刺毛，或熟之植物則幾無毛；葉體單葉，戟狀三角形，基部深心臟形，具有淺或緊密之刻溝，兩側有寬耳，而部短漸尖頭，耳闊各八分，全緣；葉體硬革質，上面淡綠色，下面尤淡，不透明；葉脈顯明，葉生，扇狀羽狀，甚傾斜，聯結成大型長網孔，包有一二伸出至孢子囊群之支脈；孢子囊群甚多，褐色，不規則疏散於小葉下面全部，圓一粉字，幾圓形；子囊單五至狀，較子囊群為大，短，灰色，邊緣有小齒，中部突起黑色，永存或久而脫落。

分布：貴州。

此種特殊之蕨與此屬中各種常異者在其體呈全緣圓狀心臟形之葉，外形與 *Phyllitis cardiophylla* (Hance) Ching 相似，最初為 Pée J. Cavalerie 於 1908 年在貴州探得，後經 Pée I. Esquirol 在原地探得，此種之探得可謂此種發達由單葉單一次羽狀復葉終至二次羽狀復葉之程序完全表明。

圖註：1. 植物全形（自然大） 2. 葉體之一部示葉脈與孢子囊群（自然大） 3. 全上（放大三倍）  
4. 子囊單五（放大百〇四倍） 5. 二孢子囊（放大百六十倍） 6. 地下莖與葉柄基部上之鱗片（放大五倍）。





## PLATE 15.

## CYRTOMIUM NEPHROLEPIOIDES (Christ) Ching.

## POLYPODIACEAE

## CYRTOMIUM NEPHROLEPIOIDES (Christ) Ching, comb. nov.

*Polystichum nephrolepioides* Christ in Bull. Geogr. Bot. Mass (1902) 258, t. fig; C. Chr. Ind. Ind. 582 (1906); Matthew in Journ. Linn. Soc. 39: 387 (1911).

*Rhizome* short, strong; *stipes* mostly fasciculate, 3-9 cm. long, curved or erect, densely clothed with reddish-brown, ovate diaphanous scales 3 mm. long, subglabrous upward, terete below, sulcate above; *frond* nutant, linear-lanceolate, 5-28 cm. long, 3-4 cm. broad, simply pinnate under the terminal pinna; pinnae 4-25 on each side, imbricately confluent, the lower ones scarcely reduced, deflexed, subequal, ovate, strongly cordate at the base, very obtuse or rounded at the apex, shortly petiolate, entire, opaque, brownish-green, thick coriaceous, glabrous smooth above, corrugated beneath, margin narrowly reflexed; *veins* hidden, close, anastomosing in a row of large oblique hexagonal areolae each with 1 included soriferous veinlet, free towards margin with thickened apex; *sori* uniseriate or 2 at the base, 5-6 on each side, medial, 1½ mm. broad rounded, inducium small, peltate, deciduous.

Distribution: Kweichow.

A rare little fern endemic in the province of Kweichow, and its discovery is indebted to Père J. Esquirol, 1898. It differs from all its relatives by nodding character of its frond with rather small ovate-cordate entire pinnae of a thick coriaceous texture. Its anastomosed veins unmistakably indicate its proper genus, and a correction regarding venation in Christ's diagnosis must be made.—R. C. C.

Plate 15. Fig. 1. Habit sketch (natural size). 2. A pinna, showing venation and sori (x 5). 3. A detached sorus with inducium (x 52). 4. Scales from stipe (x 8).



## 第十五圖

## 低頭貫衆（水龍骨科）

CYRTOMIUM NEPHROLEPIOIDES (Christ) Ching

地下莖粗而壯；葉柄通常叢生，長三至九粉，彎生或直立，葉被亦褐色卵圓形透明長三瓣之鱗片上部脫光澤，下部圓筒形，上面有槽；葉體微隆，線披針形，長五至二十八粉，闊三至四粉，一次羽狀，小葉在每個四至二十五枚，排覆葉基，下部者略小，向下彎，幾相稱，卵圓形，基部顯著心臟形，頂端甚鈍圓或圓形，有短柄，全緣，不透明，黃綠色，厚革質，光澤，上面平凸，下面微凹，邊緣微卷，葉脈不顯明，密集，聯絡成一行大形傾斜六角之網孔各有一內伸至子囊葉之支脈，在邊緣葉部具有加厚之頂端；孢子囊葉成一列或在基部成二列，每個五六個，生於中部，圓一至五機，圓形，子囊群蓋小形，盾狀，易脫落。

分布：貴州。

一稀有之種獨生於貴州，為 Père J. Esquirol 在 1898 年所發見，其與他種異者其具葉體微隆之性質與其厚革質小卵圓心臟形全緣之小葉。

圖註：1. 植物全形（自然大） 2. 小葉表示葉脈與孢子囊葉（放大三倍） 3. 脫落之子囊葉與孢子囊蓋（放大五十二倍） 4. 葉柄上之鱗片（放大八倍）。



## PLATE 16.

**CYRTOMIUM LONGIHOIDES** Christ.

## POLYPODIACEAE

**CYRTOMIUM LONGIHOIDES** Christ in Bull. Geogr. Bot. Mans (1902) 264; C. Chr. Ind. Suppl. 101 (1906-13).

*Polystichum longioides* Diels in Nat. Pfl. Fam. I. 4. 195; C. Chr. Ind. 585 (1926).

*Aspidium longioides* Christ in Bull. Boiss. 7: 16 (1899).

*Rhizome* short, erect, covered with large dark brown lanceolate, membranaceous scales and so is the stipe, scales about 1 cm. long, 3 mm. broad, with entire or scarious margin; *stipes* 5-10 cm. long, dark stramineous; *frond* 20-30 cm. long, 4-5 or 6 cm. broad, elongate lanceolate, narrowed downward, pinnate under the deeply pinnatifid short apex; rachis covered with stiff spreading linear-subulate light brown scales; *pinnæ* 16-20 on each side, shortly petiolate or sessile, remote, subopposite or alternate, unequal, patent, the lower ones much reduced, triangular-auriculate with a sharp deflexed apex on the upper side, the lower side cut away to the costa, to 3 cm. long, 1.2 cm. broad, entire or more or less sinuate-crenulate; *textura* thin herbaceous; *vein* very oblique, dense, copiously anastomosing usually with one rarely 2 excurrent included soriferous veinlets in each areola; *sori* very small, numerous, in 3 rows on each side of the costa, indusium very thin, peltate or reniform.

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

This species was first discovered by Pire Bodinier in Kweichow. It is most closely related to *Cyrtomium fortunei* J. Sm. var. *polypterum* Diels, differs in elongate lanceolate frond of almost membranaceous texture and numerous smaller undulate-crenate pinnæ.

Plate 16. Fig. 1. Habit sketch (natural size). 2. A pinna, showing venation and sori (x 2). 3. A Scales from stipe (x 5). 4. Scales rachis (x 5). 5. A detached sorus with indusium (x 46).

## 第十六圖

## 擬貫衆 (水龍骨科)

## CYRTOMIUM LONCHITIOIDES Christ

地下莖短而直立，與葉柄同被有大形暗褐色披針形覆瓦之鱗片，鱗片長約一分，闊約三厘，邊緣完全成波狀，葉柄長五至十份，暗褐色；葉體長二十至三十份，闊四或五至十份，長披針形，下部較窄，一次羽狀，頂端小葉短，深羽狀分裂，葉軸被有堅硬而硬尖披針形淡褐色之鱗片；小葉每個十六至二十個，具短柄或幾無柄，相距甚疏，幾對生或互生，不等稱，兩強，下部者顯縮小，上部者具一有翼狀之頂之三角形耳，下部削去至中肋，長至三份，闊一、二份，全緣或圓波齒狀；葉體薄革質；葉脈甚顯明，密集，聯絡複雜，每網孔中有一或二內特至子囊群之小脈；孢子囊群小，多數，中肋每個各三兩，子囊群蓋薄，盾狀或腎狀。

分布：四川，湖北，貴州，雲南。

此種最初為 Père Boinier 在貴州發見，與 *Cyrtomium falcatum* Presl var. *polypterum* (Diels) 相近，與之異者在長披針形幾覆瓦之葉體與多數較小波齒狀之小葉。

圖註：1. 植物全形(自然大) 2. 一小葉表示葉脈與子囊群(放大二倍) 3. 葉柄上之鱗片(放大五倍) 4. 葉軸上之鱗片(放大五倍) 5. 子囊群與子囊群蓋(放大四十六倍)。



## PLATE 17.

## CYRTOMIUM FRAXINELLUM Christ.

## POLYPODIACEAE

**CYRTOMIUM FRAXINELLUM** Christ in Bull. Geogr. Bot. Mans (1902) 264; C. Chr. Ind. Suppl. 101 (1906-13).

*Polystichum fraxinellum* Diels in Nat. Pfl. Fam. 1. 4. 494; C. Chr. Ind. 582 (1906); Matthew in Journ. Linn. Soc. 39: 386 (1911).

*Aspidium fraxinellum* Christ in Bull. Boiss. 7: 15 (1896).

*Rhizome* short, thick, oblique, strong, scales dense, broad, acuminate, inflated, reddish-brown; *stipes* 2-6 clustered, 10-25 cm. long, dark brown at the base and covered with numerous small subulate-lanceolate dark brown deciduous scales, growing pale gray and sparse upward; *frond* simply pinnate, oval-oblong, to 20 cm. long, 8 cm. broad, scarcely reduced at the base, terminated at the apex sometimes by an entire of sometimes pinnatifid pinna; *rachis* gray, sparsely scaly or glabrous; *pinnae* few, usually 5-10 on each side, erect-patent, remote, alternate, lanceolate, acuminate, cuneate and attenuate towards the base on short petiole, the edge almost entire but distinctly crenate towards the apex; *texture* thick coriaceous, smooth, dark glossy green above very pale and somewhat corrugated (upon drying) below, glabrous, margin slightly reflexed; *veins* not prominent, numerous, close, anastomosing in a row of narrow areolae almost reaching the margin without included free veinlets or often imperfectly pinnate or rather 2-3-bifurcate in each group; *sori* 2-3 mm. across, rounded, blackish-brown, uniseriate, terminating a short lateral veinlet in the areola, about 18-30 on each side, placed midway between the costa and margin.

*Distribution*: Yunnan, Kweichow, Szechuan, and Kwangsi.

This distinct species was first collected by A. Henry in Yunnan, on wooded cliff, later (1889) by Père Bodinier in Kweichow, and still later by Wilson in Szechuan. It was of very late (1928) collected in N. W. Kwangsi, where it is a fairly common fern, inhabiting the crevices and niches in limestone cliff. In habit this fern is closely allied to some from of *C. fortunei* J. Sm., differs in blackish-brown uniseriate sori, thick leathery glossy green leaves and cuneate base of the pinnae.

Plate 17. Fig. 1. Habit sketch (natural size). 2. A pinna, showing venation and sori (x 2). 3. A detached indusium (x 52). 4. Scales from the base of stipe (x 8).

## 第十七圖

## 槐葉貝葉 (水龍骨科)

## CYRTONIUM FRAXINELLUM Christ

地下莖短而粗壯，斜生，鱗片密生，圓形，漸尖頭，膨大，赤褐色，葉柄成二重五葉，長十至二十五份，基部暗褐色，被有多數小形尖披針形暗褐色脫落之鱗片，上部則鱗片漸少而作淡灰色，葉體一次羽狀，長卵圓形，長至二十份，闊八份，基部略縮小，頂部有一全緣或羽狀分裂之小葉；葉緣灰色，微被鱗片或毛沿；小葉少，每側通常五與十個，直立剛強，相距甚遠，互生，披針形，漸尖頭，基部楔形，縮小或短葉柄，翅全緣，近頂端則具波齒；葉體厚革質，光滑，上面暗光綠色，下面色甚淡而微皺摺，光滑，邊緣微卷；葉脈不顯明，多而密，聯結成一行狹長網孔幾達於葉緣，無內伸齒緣之支脈，或不完全羽狀，或一葉中二三次分叉，孢子囊單直徑二至三個，圓形，黑褐色，成一列，生於網孔中之翅脈上，每側有十八至三十個，生於中間與邊緣之間。

分布：雲南，貴州，四川，廣西。

此種植物先為 A. Henry 在雲南發見，後在 1889 年 Père Bodinier 在貴州發見，最後 Wilson 在四川發見，在 1903 年作者在廣西西北部發見，在該地此種甚為普通，生於石灰巖之裂縫中，此植物之外形頗似 *C. falcatum* Presl，其區別在葉褐色之一列孢子囊，厚革質光綠色之葉與小葉楔形之基部，一仁昌。

圖註：1. 植物全形(自然大) 2. 一次小葉表示葉脈與孢子囊群(放大二倍) 3. 腋生之孢子囊蓋(放大五十二倍) 4. 葉柄基節之鱗片(放大八倍)。



## PLATE 18.

**MICROLEPIA CHRYSOCARPA** Ching

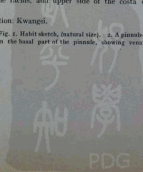
## POLYPODIACEAE

**MICROLEPIA CHRYSOCARPA** Ching in *Sinensia* 1:3 (1929).

*Rhizome* wide-creeping, 3-4 mm. thick, densely hirsute, sparsely rooted; *stipes* uniseriate, scattered, 1.5-2 cm. apart, strong, rigid, densely shaggy hirsute near the base, sparsely hirtellous upward, light lustrous, castaneous, sulcate, 32-40 cm long, as thick as or slightly thicker near the base than the rhizome; *frond* broadly oblong-lanceolate, not abbreviate towards base, 35-42 cm. long, 10-12 cm. broad, gradually acuminate towards apex, tripinnatifid or almost tripinnate towards the base of the lower pinnae; pinnae shortly petiolate, (petiole 3-4 mm. long), 14-17 on each side below a deeply pinnatifid acuminate apex, the lower ones much remoter than the upper (5-6 cm. apart), erect-patent, confluent above the middle, the lower ones 10-12 cm. long, 4-4.5 cm broad, oblong-lanceolate, slightly narrowed toward base, pinnate; pinnules 14-17 on each side below a short deeply pinnatifid acuminate apex, confluent, shortly petiolulate, oblong-lanceolate, strongly unequal at base, 2-2.5 cm. long, 7-10 cm broad pinnatifid almost down to the costa into oblong, rounded, more or less crenate lobes; lobes pectinate, the basal ones on the anterior side much the largest with straight inner margin parallel to the rachis of pinnae, 5-7 mm. long, 3-4 mm. broad, about 7 on each side under the acute serrate apex; *veins* in the ultimate lobes distinct, free, pinnate, 4-5-jugate, each again once-forked; *sori* dark brown, dense, submarginal, terminating the veinlets in the ultimate lobes, 5-6 on the basal lobes, fewer on the upper ones, unisorous on the uppermost lobes, indusium brown, persistent, almost rounded; *texture* thick, coriaceous, light green, sparsely hairy along costa above, densely hirtellous on the rachis, and upper side of the costa of the pinnae, much less so beneath.

Distribution: Kwangsi.

Plate 18. Fig. 1. Habit sketch, (natural size). 2. A pinnule from the basal part of pinna (x 2). 3. A segment from the basal part of the pinnule, showing venation and sori (x 6). 4. Hair from rhizome (x 48).



## 第十八圖

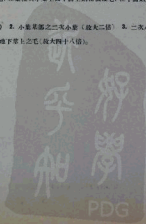
## 黃胞鱗蕨 (水龍骨科)

*MICROLEPIA CHRYSOCARPA* Ching.

地下莖節節甚廣，葉三至四輪，密被硬毛，生髮甚少；葉柄成一列，散生，相距一·五至二份，沿面硬基部密被不整齊硬毛，向上則毛稀薄，有光澤，葉褐色，有槽，長三十二至四十份，粗與地下莖等或近基部者較粗；葉體圓長圓披針形，近基部處不短縮，長三十五至四十二份，闊十至十二份，頂端漸尖頭，三次羽狀分裂成至下部小葉基部處成三次羽狀：一次小葉具短柄，(葉柄長三四份) 每個十四至十七個，頂上具一深羽狀分裂漸尖頭之羽葉，下部小葉相距較上部者為遠(相距五至六份) 直立開展，在中部葉下部小葉長十至十二份，闊四至四·五份，長圓披針形，近基部頗窄，羽狀；二次小葉在一幼深羽狀分裂漸尖頭之下每側十四至十七個，寬窄，具短柄，長圓披針形，基部甚不等緣，長二至二·五份，闊七至十份，羽狀分裂展至中部，裂片長圓，具圓頂，緣具波齒狀，裂片條狀分裂，在前面生基部者最大，其內面邊緣直，與小葉葉軸平行，長五至七份，闊三至四份，在裂片頂部齒狀之下每側有七個，最小裂片上之葉脈顯明，清晰，羽狀，或四五對，每葉脈再分叉一次；孢子囊群暗褐色，密生於最小葉葉近葉緣處支脈之頂上，在基部裂片上有五六個，在上部裂片上較少，在頂上葉生上一個；子囊群直褐色，永存，與圓形；葉體厚革質，淡綠色，上面節中肋微有毛，在葉柄與小葉上面中肋上則密被硬毛，在下面則絲絨。

分布：廣西。

圖註：1. 植物全形(自然大) 2. 小葉基部之二次小葉(放大二倍) 3. 二次小葉基部之裂片表示葉脈與子囊群(放大六倍) 4. 地下莖上之毛(放大四十八倍)。





## PLATE 19.

## LINSAYA CHIENII Ching

## POLYPODIACEAE

LINSAYA CHIENII Ching in Sinensia 1:4 (1929)

*Rhizome* moderately wide-creeping, oblique-ascending, 1.5-2 mm. thick, thinly covered by small adpressed subulate ferruginous scales; *stipes* subcaespitose, slender, 15-26 cm. long, grooved above, polished, dark chestnut brown, and so is the rachis, rarely sparsely scaly near the base, otherwise glabrous in all parts; *fronds* oblong-deltoid, 11-14 cm. long, about 7 cm. broad at base, bipinnate, with a short simple pinnate apex; the basal pinnae much the largest, 5 cm. long, 2 cm. broad, pinnate, the upper ones gradually shorten and less compound, subsessile, alternate, erect-patent, the lower 4-6 pairs pinnate, oblong-lanceolate, with an acuminate pinnatifid apex, secondary rachis castaneous beneath; the pinnules subsessile, oblique rhomboid with basal ones often suborbicular, cuneate, cut on the outer and upper margin into few broad short truncate soriferous lobes, entire and straight on the lower and inner sides, 1-1.2 cm. long, 5 mm. broad, alternate, 5-6 pairs in the basal pinnae; the terminal pinnae are of same shape and size; *texture* thin herbaceous, light green above, paler below, rather pellucid, midrib distinct only in larger pinnules; *veins* all free, flabellate, translucent, 1-2 forked; *sori* 5-7 on each pinnule, short, not confluent, submarginal, transversely linear-oblong, mostly uniting the apices of two veins, but not uncommon apical on single veins; *indusium* membranaceous, narrow, grayish.

Distribution: Kwangsi.

Plate 19. Fig. 1. Habit sketch, (natural size). 2. A pinnule, showing venation and sori (x 4). 3. Scales from rhizome (x 16).



## 第十九圖

## 錢氏假鐵線蕨 (水龍骨科)

LINDSAYA CHENII Ching.

地下莖匍匐或斜向上伸，粗約一五至二釐，疏被有小形緊貼針狀鱗片；葉柄從叢生，細瘦，長十五至二十五粉，上面有棱，平滑，暗褐色，葉軸亦如之，稀基部微被鱗片，此外各部皆光滑；葉體長圓三角形，長十一至十四粉，基部闊約七粉，二次羽狀，頂端有一裂狀之頂；基部一次小葉最大，長五粉，闊二粉，羽狀，上部者漸小漸狹窄，幾無柄，互生，直立或強，下部四至六對，羽狀長圓披針形，有一端尖頭羽狀分裂之頂，二次葉軸下面葉色；二次小葉幾無柄，斜菱形，基部者常作幾圓形，楔形，外面上部分裂為數個圓盤形生孢子囊群之裂片，下部與內面全緣，長一至一.二粉，闊五釐，互生，在基部一次小葉上有五六對；頂端一次小葉之形狀大小與剛生者相若；葉體兩草黃，上面淡綠色，下面較淡，幾透明，中脈僅在較大之小葉上顯明；葉脈完全網脈，扇狀，半透明，一至二次分叉；孢子囊群在每二次小葉五至七個，短不相連，生近邊緣處，橫線長圓形，通常連接二葉脈之頂部，有時亦生於葉脈之頂部；子囊蓋圓形，革，灰色。

分布：廣西。

圖註：1. 植物全形(自然大) 2. 二次小葉表示葉脈與孢子囊(放大四倍) 3. 地下莖上之鱗片(放大十六倍)。



## PLATE 20.

## LINSAYA CHINENSIS Ching

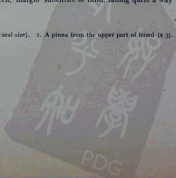
## POLYPODIACEAE

LINSAYA CHINENSIS Ching in Sinensia 1:5 (1929).

*Rhizome* creeping, about 3 mm. thick, scales dense, spreading, dark shining brown, linear with rather a blunt apex, 1-1.5 mm. long; *stipes* approximate, 4-10 mm. apart, slender, glabrous throughout, dark shining chestnut brown and become lighter upward, to 9 cm. long, and 1 mm. thick at base; *fronds* deltoid-lanceolate, 10-16 cm. long, about 5.5 cm. broad at base, 1.2-1.8 cm. broad in the middle, glabrous, bipinnate in the lower one-third, the remaining upper two-thirds simply pinnate, or sometimes the whole frond simply pinnate, gradually diminishing towards apex; pinnae spreading, petiolate, alternate, the lower 3-6 pairs oblong-lanceolate, 2-3 cm. long, 6-10 mm. broad, pinnate under a pinnatifid rather blunt apex; pinnules 5-8 pairs, almost equilateral triangular, petiolulate, cuneate at base, and cut on the rounded outer margin about  $\frac{1}{2}$  way down into 2-4 short broad more or less dilated segments with a blunt or more or less eroded truncate apex, the upper ones often subentire, to 4 mm. long, about as broad; the upper pinnae numerous (about 22-30 pairs), reniform to flabellate-cuneate, to 1 cm. long and as broad, variously cut along the rounded outer edge into 4-6 oblong more or less dilated segments which are often again bifid and of the same shape as, but larger than, those in the pinnules of lower pinnae; rachis slender, terete, more or less channelled above, light green, except the lower part which is dark stramineous-brown, glabrous; *veins* slender, free, rather distinct, flabellate, mostly once-forked or simple, 1-2 (never 3) to each ultimate segment; *texturae* pellucido-herbaceous, thin, but rigid; *sori* orbicular to transverse-oblong, one to each segment, terminating 1-2 veinlets, indusium membranaceous, pale green, margin subentire or bifid, falling quite a way short of the margin.

Distribution: Kwangsi.

Plate 20. Fig. 1. Habit sketch (natural size). 2. A pinna from the upper part of frond (x 3). 3. Scales from rhizome (x 24).



## 第 二 十 圖

## 華假鐵線蕨 (水龍骨科)

LINDSAYA CHINENSIS Ching.

地下莖匍匐，粗約三釐，鱗片衛生，圓錐，暗褐色，有光澤，線形，鈍尖頭，長一至一五釐；葉柄粗約四至十釐，細瘦，完全光滑，暗栗色，有光澤，漸上色漸淡，長至九呎，基部粗一釐，葉體三角披針形，長十至十六呎，基部闊五十五釐，中部闊十二至十八釐，尖形，下部三分一二次羽狀，上部三分二一次羽狀，有時全體一次羽狀，向頂部逐漸減小；一次小葉開張，有柄，互生，下部三至六對長圓披針形，長二至三釐，闊六至十份，羽狀，上有一柄狀分叉鈍尖頭之頂；二次小葉五至八對，短等稱三角形，有葉柄，基部楔形，自外緣深裂至三分一或為二至四個短圓裂片，裂片有鈍而或缺刻截形之頂端，上部者常全緣，長四釐，闊如之；上部一次小葉有二十二至三十對，腎狀形，全緣狀楔形，長一釐，闊如之，兩翼形外緣分裂為四至六個長圓形之裂片，裂片有時再二裂，與下部一次小葉之二次小葉同形而較大；葉軸細瘦，圓筒形，上面微有槽，淡綠色，下部則暗褐色，光滑；葉脈細，淺綠，頗明顯，扇狀，通常一次分叉或總單，每裂片有一至二條；葉體透明厚質，薄而硬；孢子囊群圓形或廣長圓形，每裂片一個，生一二葉脈之頂上；子囊蓋軟質，淡綠色，度全緣或二裂，距裂片邊緣頗遠。

分布：廣西。

圖註：1. 植物全形（自然大） 2. 葉體上部之一小葉（放大三倍） 3. 地下莖上之鱗片（放大二十四倍）。



## PLATE 21.

## ATHYRIUM ANISOPTERUM Christ.

## POLYPODIACEAE

**ATHYRIUM ANISOPTERUM** Christ in Bull. Boiss. 6:162 (1898), Bull. Geogr. Bot. Mans (1907) 133; C. Chr. Ind. 139 (1906); Matthew in Jour. Linn. Soc. 39: 348 (1911).

*Athyrium fauriei* Mak. var. *clavus* Christ in Bull. Boiss 6:193 (1898).

*Rhizome* thick, short, oblique; *stipes* slender, fasciculate, but few (3-4) together, base incrassate, dark brown or blackish, clothed with moderately dense brown scales, stramineous upward, 25 cm. long, glabrous in other parts; *frond* to 28 cm. long, to 8 cm. broad, somewhat broader towards the base, gradually attenuate towards the apex, oblong-lanceolate, bipinnatifid or sparsely bipinnate near the base; pinnæ about 17 on each side, alternate, petiolate, the lower ones horizontally patent, remote, the lowest much the largest, oblong-deltoid, strongly unequal, truncate or cuneate on the under side at the base, auricled on the upper side, apex rather acute or shortly acuminate, the largest to 5 cm. long, 2.5 cm. broad, pinnate near the base, deeply pinnatifid above; pinnules or lobes oblique, oblong-ovate, obtuse, about 7 on each side, the basal pair in the lower pinnæ usually free, the superior one much the largest, thus making the pinnæ appearing auricled, contiguous to or somewhat imbricate on the rachis, inciso-crenate or deeply pinnatifid, the other lobes adnate to the broad winged costa and only deeply incised towards the apex, the upper pinnæ deeply inciso-lobed, lobes obtuse, obscurely crenate; *sori* numerous, large, 8, 7, 5 or 3 to each lobe, 1.5-2 mm. long, usually hippocrepiform or ovate, inducium persistent, gray, reniform; *texture* thin herbaceous, color obscurely green on both sides.

*Distribution*: Yunnan, Hupeh, and also Luzon of the Philippine Islands.

A medium-sized fern of an elegant habit, easily recognized by its rather unequal pinnæ, which are prominently auricled above and truncate or cuneate below and by large gray horseshoe-shaped sori with persistent indusia. It was first collected by A. Henry in Man-mei, Yunnan, and later by Pere Ducloux in the same province; and also recorded in Luzon, the Philippine Islands, by Tonglon and Copeland.

Plate 21. Fig. 1. Habit sketch (natural size). 2. A pinna from the basal part of frond (x 2). 3. A pinnule, showing venation and sori (x 5). 4. Scales from rhizome (x 50).

## 第二十一圖

## 宿蹄蓋蕨 (水龍骨科)

## ATHYRIUM ANISOPTERUM Christ

地下莖和根斜生；葉柄細瘦，莖生，三四株集生，基部較粗，暗褐色或淡黑色，密被褐色鱗片，上部葉柄褐色，長二十五粉，其他部分光滑；葉闊長至二十八粉，圓至八角，向基部較闊，向頂部逐漸收窄，長圓披針形，二次羽狀分裂或近基部處微作二次羽狀；一次小葉每個約十七個，互生，有柄，下部者橫張，相並排連，最下者最大，長圓三角形，極不等稱，基部下面截形或楔形，上面有耳，頂部急尖頭或短漸尖頭，最大一次小葉長五粉，闊二-五粉，基部羽狀，上部深羽狀分裂，二次小葉成裂片斜長卵圓形，鈍圓，每個約七枚，下部一次小葉所有之基部一到通常分期，上部者較之殊大，使一次小葉呈耳狀，與葉輪相連，或掩覆其上，缺刻波面狀或深羽狀分裂，其除裂片附着於有圓翼之中脈上，惟至近頂處有缺刻，上部小葉深缺刻分裂，裂片鈍頭，微有波齒；孢子囊羣多數，大形，每裂片有八、七、五或三個，長一-五至二個，通常馬蹄狀或卵圓形，子囊群蓋永存，灰色，腎狀形；葉體薄草質，二面皆暗綠色。

分布：雲南，緬北；菲律賓之呂宋亦有之。

此種葉頗美觀，其最特別處莫不等稱在基部上面截形或楔形之小葉，與大形灰色馬蹄狀之子囊群與永存之子囊群蓋，此種先由 A. Heary 在雲南採得，後經 P. D. D. DuRoi 在同名採得，Tonglon 與 Copeland 復在呂宋採得。

圖註：1. 植物全形（自然大） 2. 葉體基部之小葉（放大二倍） 3. 二次小葉示葉脈與子囊群蓋（放大五倍） 4. 地丁當之鱗片（放大三十倍）。

## PLATE 22.

**ASPLENIUM FINLAYSONIANUM** Wallich

## POLYPODIACEAE

**ASPLENIUM FINLAYSONIANUM** Wall., HK. Ic. Pl. t. 937 (1854); HK. BK. Syn. Fil. 245; Christ Farnkraut. Erde. 199; Diels in Nat. Pfl. Fam. 1. 4. 339; C. Chr. Ind. III (1906); v. A. v. R. in Malay. Ferns 476 (1908).

*Rhizome* short, thick, obliquely ascending, densely clothed with rigid blackish lanceolate scales; *stipes* 15-23 cm. long, green, subcompressed, densely clothed near the base in the scales similar to those on the rhizome, the upper part and rachis subglabrous or clothed in blackish subulate-lanceolate scales; *fronds* 20-45 cm. long, 10-20 cm. broad, simply pinnate under an entire or subrepand or 3-lobed terminal pinna which is much the largest, lateral pinnae 1-6, subopposite or alternate, the lower ones somewhat larger than the ones next above, 7-12 cm. long, 2-4 cm. broad, the point very acuminate, the base equal or subequal, very gradually narrowed on both sides to a distinct petiole, the edge entire or subrepand; *texture* subcoriaceous or chartaceous; *veins* subflabellate, very oblique, slightly anastomosing towards the edge, sometimes bounded by an irregular intramarinal line; *sori* often 3.5-5 cm. long, scattered irregularly, near the costa, but falling short far off from the margin.

Distribution: India, Malaya, China: Yunnan.

Evidently rather a rare plant in China, recorded so far only from Yunnan by A. Henry.

Plate 22. Fig. 1. Habit sketch (natural size). 2. A pinna, showing venation and sori (natural size). 3. Scale from rhizome (x 30).

## 第二十二圖

## 網脉單蓋蕨 (水龍骨科)

**ASPLENIUM FINLAYSONIANUM** Wallich.

地下莖短，粗壯，斜向上伸，密覆以堅硬暗黑披針形之鱗片。葉柄長十五至二十三粉，綠色，稀編，基部被以類似地下莖所有之鱗片，上部及葉緣微光滑或被以暗黑色針狀披針形之鱗片，葉體長二十至四十五粉，寬十至二十粉，一次羽狀，頂部小葉甚大，全緣或稍有缺刻或成三裂片，兩個小葉一至六個，旋對生或互生，下部之小葉較在次上部者略大，長七至十二粉，寬二至四粉，先端長漸尖頭，基部稍等或幾相等，漸漸變平頂或葉柄，基部全緣或稍有缺刻；葉體幾革質或紙質；葉脈略成扇狀，長斜，近葉緣處稍聯結，有時並以不規則之線內網；子囊即長三粉至五粉，稀散少規則，生近中肋，延至葉緣甚遠處而沒。

分布： 印度，馬來，在中國則雲南有之。

本種在國內稀見，惟 A. Henry 氏在雲南採得之。

圖註： 1. 植物全形（自然大） 2. 一次小葉示其脈及子囊等（自然大） 3. 地下莖之鱗片（放大三十倍）。





## PLATE 23.

## DIPLAZIUM PULLINGERI (Baker) J. Smith

## POLYPODIACEAE

**DIPLAZIUM PULLINGERI** (Baker) J. Sm. in Ferns Brit. and For. ed. II. 315 (1877); C. Chr.

Ind. 238 (1906); Matthew in Jour. Linn. Soc. 39:358 (1911).

*Asplenium pullingeri* Baker in Gard. Chron. n.s. 4:484 (1875).

*Asplenium biceps* Wright in Kew Bull. (1908) 182.

*Asplenium chlorophyllum* Baker in Jour. Bot. (1883) 104; Bodd. in Handb. Suppl. 39 (1892).

*Caudex* rather thick, oblique; scales none or very small and obscure; *stipes* densely tufted (3-5 together), 12-17 cm. long, sordid blackish at the base, growing greenish upward, densely clothed like the entire main rachis with shaggy rather stiff, brown glandular hairs; *frond* 20-38 cm. long, 12-15 cm. broad at the middle, which is the broadest part, ovate-oblong, narrowed very gradually towards the apex and reduced towards the base, simply pinnate, rachis densely pilose; *pinnæ* 20-25 cm on each side, alternate, moderately close, lanceolate, acuminate, crenate, the lower ones sessile, the middle ones adnate, the uppermost ones connected by a broad wing under the pinnatifid acuminate apex, those in the upper half of the frond horizontally patent, the basal ones strongly deflexed, the largest to 7 cm. long, 1.5 cm. broad, distinctly auricled on the upper side at the base, rounded or slightly cut away below; *seis* distinct to the margin, translucent, forked once or twice, but pinnate in the auricles; *sovi* linear, borne on the anterior veinlets and extending from the costa to more than half way to the margin, slightly curved, about 5 mm. long, rarely diplazioid, *inducium* moderately broad, persistent, not ciliate; *texture* thin papery, bright green, densely villose on both surfaces, and especially along the costae beneath.

*Distribution*: Kwangtung, Kwangsi, also Formosa and Penang.

A medium-sized and very distinct fern, characterized by all parts being densely villose and rarely diplazioid *sori*. Baker's diagnosis for his *Asplenium pullingeri* was evidently based upon a rather smaller plant than grown in Kew Gardens perhaps from the rootstocks sent to that institution by Mr. Pullinger from Hongkong, 1871. His statement, "its very short stipes" is certainly incorrect, as the specimens collected in Tai-mo-shan, Hongkong New Territory, where most likely be the type locality for Baker's species, by E. H. Wilson and W. T. Tutcher, upon which Wright based the description for his *Asplenium biceps*, has stipes to 30 cm. long, and Matthew's plant, No. 280 (February 4th, 1907), from Ma on-shan in the same locality, upon which our present figure is based, has stipes from 12 to 17 cm. long.

Plate 23. Fig. 1. Habit sketch (natural size). 2. A pinna, showing venation and *sori*. 3. Scales from rachis (x 48).

## 第二十三圖

## 樓氏雙蓋蕨 (水龍骨科)

DIPLAZIUM PULLINGERI (Baker) J. Smith

根莖肥壯，斜生，無鱗片，或有極小不明顯之鱗片；葉柄密生，三五叢生，長十二至十七粉，基部暗黑色，向上漸淡綠色，與主葉柄俱被有粗韌堅硬之線狀毛。葉體長二十至三十八粉，中葉四十二至十五粉，卵長圓形，向基部漸狹，向基部漸減縮，一次羽狀，葉軸密生毛；小葉每個二十至二十五個，互生，顯齒緣，披針形，漸尖頭，邊緣波齒狀，下部者無柄，中部者短生，最上者在羽狀分葉具漸尖頭之頂之下以圓翼相連，上半小葉擴張，中部者甚向下彎，最大者長七粉，闊一五粉，上面基部有耳，下面圓形或微倒去；葉脈主葉緣皆明顯，半透明一次或二次分叉，但在耳上則成扇狀；孢子囊線形，生於前部之支脈上，由中部延至距葉緣處一半以上，微彎，長約五種，稀類似 *Diplazium* 所有者；子囊群蓋球圓，永存，不生纖毛；葉體薄紙質，鮮綠色；兩面皆密生軟毛，尤以下面葉中肋處為甚。

分布：廣東，廣西，臺灣，檳榔嶼亦有之。

此特殊種類最顯著之性質為全部密生軟毛與類有似 *Diplazium* 之孢子囊羣。Baker 所以初稱之為 *Asplenium pullingeri* 者因其記載完全本於一其小之植物就植於阿皇家植物園而後自 Pullinger 在 1871 年由香港寄去之地下莖產生者。樓氏所稱此種之名稱固不其確，蓋 Wilson 與 Tatcher 在香港所採者葉柄長至三十粉，而 Matthew 在同地所採之二八〇號之其吾蘭所採者，其葉柄亦長二十至十七粉也。

圖註：1. 植物全形(自然大) 2. 小葉表示葉脈與孢子囊羣，3. 葉柄上之鱗片(放大四十八倍)。



## PLATE 24.

**DIPLAZIUM PELLUCIDUM** Ching

## POLYPODIACEAE

**DIPLAZIUM PELLUCIDUM** Ching in *Sinensia* 1: 7 (1929).

*Rhizome* short, thick, obliquely erect; *stipes* densely tufted, clad rather sparsely in membranaceous brown subulate ciliate spreading scales, 20-23 cm. long, blackish on the lower half, dull stramineous upward, deeply channelled above; *fronds* oblong-ovate, 30-32 cm. long, 17-20 cm. broad in the middle, which is much the broadest, slightly abbreviate towards base, simply pinnate, rachis stramineous, scaly; *pinnæ* 10-12 pairs under a broad pinnatifid acuminate apex, the middle ones 9-11 cm. long, 1.6-1.8 cm. broad near the base, lanceolate, subhorizontally patent, the basal ones shorter (8-9 cm.) and as broad, only slightly deflexed, alternate, rather approximate, the lower ones sessile, the upper ones broadly adnate, subtruncate, or rounded at base, dilated on both sides, apex acuminate, remotely and rather irregularly crenate below the middle, but distinctly and regularly serrate towards apex, *costa* slender, lateral veins translucent, distinct, free, 4-5 mm. apart, 2-jugate, except the basal pair which is mostly 3-jugate, very ascending, extending to the margin; *texture* thin, pellucido-chartaceous, lustrous, light green above, paler below (when living); *sori* linear, 3-5 mm. long, slightly curved, oblique, following the anterior veinlet of the group, placed midway between costa and margin, very rarely diplazoid, indusium moderate broad, persistent.

Distribution: Kwangsi.

Plate 24. Fig. 1. Habit sketch (natural size). 2. A portion of *pinnæ*, showing venation and sori (x 7). 3. Scales from *rhizome* (x 24).



## 第二十四圖

## 膜葉雙蓋蕨

DIPLAZIUM PELLUCIDIUM Ching.

地下莖切面壯，斜向上伸；葉柄密生葉生，緣被以質質褐色尖線形有纖毛開張之鱗片，長二十至二十三粉，下半部幾黑色，上部稍褐色，上面有深槽；葉體長圓卵形，長三十至三十二粉，中部十七至二十粉，近基部微縮小，一次羽狀，葉軸暗褐色，有鱗片；小葉在一個羽狀分裂漸尖頭之下有十至十二對，中部者長九至十一粉，近基部圓一六至一八粉，披針形，極強，基部者略短（八至九粉）而與之等闊微向下彎，互生，珠葉葉，下部者無柄，上部者短生，基部幾戟形或圓形，在兩面俱擴張，頂部漸尖頭，中部以下緣生不整齊波狀齒，葉頂部則顯明具整齊之鋸齒，中肋極強，脈半透明，顯明，透嫩，相距四五種，或二對，基部者則多或三對，直至葉緣；葉體質薄，透明紙質，上面淡綠色，有光澤，下面較淡，孢子囊線形，長三至五種，微彎，斜列，胚生於每群中最前面之支脈上，生於中肋與葉緣之間，其種類 *Diplazium* 屬所有者，子囊蓋顯明，永存。

分布：廣西。

圖註：1. 植物全形(自然大) 2. 小葉之一部表示葉脈與孢子囊(放大七倍) 3. 地下莖上之鱗片(放大二十四倍)。



## PLATE 25.

**DIPLAZIUM MACROPHYLLUM** Ching

## POLYPODIACEAE

**DIPLAZIUM MACROPHYLLUM** Ching in *Sinensia* 1: 6 (1929).

*Rhizome* thick, short, woody, erect, scales dense, imbricate, linear-lanceolate to linear-subulate, 1.5-2 cm. long, with long hair-pointed frizzy apices, often 2-cleft, blackish, ciliate; *stipes* strong, 50-85 cm. long, about 1 cm. thick, dark brown, and paleaceous near the base, greenish upward, turning dark stramineous upon drying, broadly channelled above, scales similar to the rhizomatic ones, sparse on the basal part of the stipe, glabrous upward; *fronds* ample, 40-60 cm. long, 20-26 cm. broad, simply pinnate, broadly oblong, slightly abbreviate towards base, glabrous on both surfaces; *texture* herbaceous, moderately firm, glossy green above, paler below (when living); *pinnae* 7-9 cm each side below a broad and shallowly pinnatifid acuminate apex, 2-3 cm. apart, oblong-lanceolate, petiolate (petiole 5 mm. long), the uppermost ones adnate, 17-19 cm. long, 3-4 cm. broad, base subtruncate to subrotund, apex acuminate, margin remotely lobato-crenate into broad rounded short lobes; *midrib* prominent, lateral veins spreading about 7 mm. apart, veinlets 5-6-jugate, free, very ascending; *sori* dense, confluent at last, oblong, 5-7 mm. long, following the lower 2-4 veinlets of the group, falling considerably short from the margin, indusium broad, spurious.

Distribution: Kwangsi.

Plate 25. Fig. 1. Habit sketch (natural size). 2. A portion of pinna, showing venation and sori (x 2). 3. Scale from the base of stipe (x 24).



## 第二十五圖

## 大葉雙蓋蕨 (水龍骨科)

**DIPLAZIUM MACROPHYLLUM** Ching.

地下莖粗壯而短，木質，直立；鱗片密生，覆瓦狀排列，線披針形，葉尖線形，長一、五至二粉，頂端尖長有毛，每二裂，深褐色，有纖毛；葉柄強壯，長五十至八十粉，圓一粉，暗褐色，基部有數種狀鱗片，上部深綠色，乾燥後則成暗紅褐色，上面有圓點；鱗片與地下莖上者相似，疏生於基部，上部則光滑；葉體大，長四十五至六十粉，闊二十至二十六粉，一次羽狀，圓長橢圓形，基部很縮小，兩面皆光滑；葉薄革質，頗堅實，上面光綠色，下面色較淡；小葉在圓形淺羽狀分裂葉尖頭之頂下每側七至九個，相距二至三粉，長圓披針形，有柄長至五粉，最上者顯著，長十七至十九粉，闊三至四粉，基部截形或幾圓形，頂端漸尖頭，邊緣深裂為圓錐形短裂片；中脈甚顯著，側脈圓頭，相距約七粉，支脈五至六粉，邊緣，上伸；孢子囊密生，終至連合，長五至七粉，沿每葉之下部三四支脈而生，距邊緣頗遠；孢子囊蓋圓。

分布：廣西。

圖註：1. 植物全形 (自然大) 2. 小葉之一部表示葉脈與孢子囊 (放大二倍) 3. 葉柄基部之鱗片 (放大二十四倍)。



## PLATE 26.

## PHYLLITIS DELAVAYI (Franch.) C. Christensen

## POLYPODIACEAE

**PHYLLITIS DELAVAYI** (Franch.) C. Chr. Ind. 492 (1906); Matthew in Journ. Linn. Soc. 39: 376 (1911).

*Scolopendrium delavayi* Franch. in Bull. Soc. Bot. Fr. 32: (1885); Christ in Farnkraut, Erde 213; Diels in Nat. Pfl. Fam. I. 4. 233.

*Rhizome* short, small, erect, clothed up to the collum with blackish lanceolate subulate scales; *stipes* tufted, shining ebeneous, glabrous, slender, channelled above, 7-12 cm. long; *frond* simple, entire, orbicular or suborbicular, obscurely undulate, deeply cordate at the base with broad or rarely close sinus, 3-6 cm. across, *texture* pellucid, light green; *veins* flabellate, repeatedly dichotomous, free; *sori* borne on the secondary or tertiary veins, elongate, not attinent at the ends, *inducium* thin membranaceous, persistent, opening towards each other.

*Distribution*: Yunnan, Szechwan, Kweichow, also Burma.

Distinct for its simple orbicular deeply cordate leaves, resembling those of our water lilies. The size of leaves and the length of stipes vary great deal, some plants having leaves as small as 1.5 cm. across, provided with rather a long stalk, others having stalks not exceeding 1 cm. in length but with rather large leaves. A fairly common fern in W. China, thriving best in moist shades in wooded gorges and ravines.

Plate 26. Fig. 1. Habit sketch (natural size). 2. A portion of frond, showing venation and sori (natural size). 3. Scales from rhizome (x 20).



## 第二十六圖

## 荷葉對開蓋蕨(水龍骨科)

PHYLLITIS DELAVAYI (Franch.) Christensen.

地下莖短小直立，被有黑色尖狀針形鱗片；葉柄叢生，光黑色，光滑，細瘦，上面有槽，長七至十二  
 粉；葉體簡單，全緣，圓形或幾圓形，不顯明波狀，基部心臟形，四角圓或殊平，直徑三至六粉，透明，膜質  
 淺綠色；葉脈扇狀，多次分出，邊離；孢子囊群生於第二次或第三次支脈上，長形；子囊羣蓋薄紙質，永存  
 無對開。

分布：雲南，四川，貴州；種甸亦有之。

此種之特性其莖形具深心臟形基部之葉，形狀類似肺葉，其葉之大小與葉柄之長短變異甚大，  
 葉體有小葉一五粉直徑，而有頗長之葉柄，或葉柄有長止一特而葉體頗大者；此種在中國西部頗普通，喜  
 生有樹木山峽之陰濕處。

圖註：1. 植物全形(自然大) 2. 葉體之一部表示葉與孢子囊群(自然大) 3. 地下莖上之鱗片(放  
 大二十倍)。





## PLATE 27.

## PHYLLITIS CARDIOPHYLLA (Hance) Ching

## DOLYPODIACEAE

## PHYLLITIS CARDIOPHYLLA (Hance) Ching, Comb. nov.

*Micropodium cardiophyllum* Hance in Journ. Bot. (1883) 268.

*Asplenium cardiophyllum* Baker in Ann. Bot. 5: 311 (1891); C. Chr. Ind. (1906); Matthew in Journ. Linn. Soc. 39: 344 (1911).

*Rhizome* terete, wide-creeping, 3-4 mm. across, clad in dense, minute shining brown, spreading setae; *stipes* 2-5 cm. apart, uniseriate, slender, flexible, somewhat incrassate at the base, shining ebeneous, 3-sulcate on the upper side with the middle groove the broadest, all extending from the base up to the apex, broadly keeled on the under side, to 20 cm. or more long, scarcely 2 mm. broad at the base, not articulate to the rhizome; *frond* simple, deeply cordato-ovate in outline, acuminate, with broad rounded, sometimes rotundo-truncate auricle on each side at the base, 10-15 cm. long, 7-10 cm. broad, margin entire, usually somewhat obscurely undulate, very rarely sinuate, basal sinus 5-10 mm. broad, 2-3 cm. deep, usually open, sometimes close by the imbrications of the auricles; *texture* chartaceous, glabrous, pellucid, light green above, pale below, *costa* rather prominent below except towards the apex, the lower half similar to the stipe in coloration, inconspicuous above, lateral veins very fine, scarcely seen on the under surface, but very distinct when held up against light, obliquely patent, 1.5-2.2 mm. apart, parallel, 3-4-dichotomously branched and meeting once or twice near the margin forming mostly one sometimes two rows of narrowly linear areolae between the costa and margin; with somewhat thickened mostly free or sometimes connivent apex ended submarginally; *sori* linear, 2-3 cm. rarely more long, nearer to the costa than the margin, about 1-1.5 cm. from the margin, 3-5 mm. or farther from the costa, the lower ones often scolopendrioid, the upper ones usually asplenoid, *inducia* of the same shape as the sori, membranaceous, grayish-white, margin entire.

*Distribution*: Endemic in the Island of Hainan, S. China, also known in Formosa.

Plate 27. Fig. 1. Habit sketch (natural size). 2. A lower portion of frond, showing venation and sori (x 2½). 3. Sporangia (x 12½). 4. Scale from rhizome (x 40).

This interesting little fern was first collected in the Island of Hainan by Rev. B.C. Henry, November 25, 1882 and named by Dr. Hance as *Micropodium cardiophyllum* which was changed later to *Asplenium* by Baker and has remained as such ever since. A recent careful examination of an ample stock of materials from Hainan\* has vividly convinced me of considering this species most fit as a legitimate member of *Phyllitis* by the presence of its scolopendrioid sori on the lower part of the frond, although they all gradually become asplenoid as go upward. Of about 50 plants examined by me, I found that about one-third, which are in full fructification, exhibits the character peculiar to the genus, and, moreover, that the scolopendrioid sori seem mostly confined to the lower one-third of the frond, while those in the upper 2-3 are almost all strictly of asplenoid nature. It is most likely that the type specimens for *Micropodium cardiophyllum* Hance are plants with sori in asplenoid condition as I have seen most of the plants are in, that perhaps chiefly accounts for the uncertainty of systematic position for the present species. Besides the asplenoid character of the sori on the upper part of the frond, it is very interesting, however, to note that while some of the sori are strictly scolopendrioid nature, i. e. they are in opposite pairs, with their *indusia* directly opening towards each other, there are good many others, which are separated by one or more intervening veins of the same group and still some others which are not in consecutive pairs, opening face to face, but either opening downward or upward singly. In spite of this deviation the reason for which was quite explicitly explained by W. J. Hooker (cf Sp. Fil. IV. p. 1), it seems most fit to incorporate this plant in *Phyllitis* or probably better still to remove into a distinct genus intermediate between *Asplenium* and *Phyllitis* as the nature of its *indusia* indicate. In view of the presence of distinct midrib and the anastomosis of the veins towards the margin, the present species naturally falls in *ANTIGRAMME* Presl, Diels in Engl. and Prantl, Nat. Pl. Fam. 1: 4, 932 f. 124, E., a section of about 4 or 5 species endemic in Borsil. The present species differs from its far-off relatives by wide-creeping rhizome, deeply cordate-ovate frond of pellucid chartaceous texture, etc. The Japanese *P. ibonoi* (Mak.) C. Chr. exhibits, among other characters identical to the present species, the same irregularity in the nature of sori, and might perhaps be well regarded as identical to our species.—R. C. C.

\*I wish to tender my heartiest thanks to Prof. F. A. McClure, the College of Science, Lingnan University, Canton, for his courtesy in handing over to me for examination all the material at his disposal.—R. C. C.

## 第二十七圖

## 瓊崖對開蓋蕨(水龍骨科)

## PHYLLITIS CARDIOPHYLLA (Hance) Ching.

地下莖管狀，如芎藭狀，直徑約三四釐，密覆以小形光澤褐色開張之刺毛狀鱗片；葉柄相距二至五粉，疏生，細瘦，柔韌，基部略粗，黑色有光澤，上面具三棱，中間者最寬，背向基部直達尖端，下面隆起，長達二十粉，有時更長，稀基部寬達二釐者，與地下莖不成關節；葉體簡單深心臟形圓形，漸尖頭，基部截形或扁圓形有時截圓形之耳，長十至十五粉，寬七至十粉，全緣，通常或不顯明之淺波狀，稀有成深缺刻者；基部闊寬五至十釐，深二至三粉，通常開張，有時為基部之耳所遮掩；葉體紙質，光滑，透明，上面淺綠色，下面尤淡，中肋在下面甚顯明，近頂部則不顯明，下半部顏色與葉柄相同，在上面不顯明，側脈甚細，在下面幾不能見，稍持之向日光則立現，斜行間脈，初離一脈者二穗半，平行，三四次歧出，至邊緣處常二股相合，形成一行有時疏行半線形之網孔，葉脈稍疏通常略粗，簡單，有時兩股相交，不及葉緣而止；子囊單線形，長二三粉，稀有更長者，生中肋及葉緣之間，距葉緣一粉至一粉半，距中肋不過三五下部子囊單形似 *Scolopendrium* 而上部者則通常似 *Asplenium* 所有者，子囊群蓋之形狀一如子囊單，薄膜質，灰白色，全緣。

分布：海南島原產，臺灣亦有之。

圖註：1. 植物全形(自然大) 2. 葉體之下部表示葉脈與子囊群(放大二倍半) 3. 孢子囊(放大一百十六倍) 4. 地下莖之鱗片(放大四十倍)。

本種初為 B. C. Henry 氏採自海南島，由 Hance 氏定為 *Micropodium cardiophyllum*，其後 Baker 氏改定為 *Asplenium cardiophyllum*，但作者在審慎研究多數海南標本之後，確定本種當歸於 *Phyllitis* 一屬，因葉體下半部之子囊群通常類似 *Scolopendrium*，逐漸向上轉變為 *Asplenium* 之模式也，作者研究標本中三分之一皆具此特性，且 *Scolopendrium* 模式之子囊群皆生於葉基三分之二部分，故 Hance 氏檢定之標本之定名為 *Micropodium cardiophyllum* 者，實本種多數僅具 *Asplenium* 格式子囊群者，故其系統關係在當時不能決定之，本種性質介乎 *Asplenium* 與多數 *Phyllitis* 之間，與後者之近屬 *Antigramme* 之性質最近，但其質處則在如芎藭狀之地下莖與深心臟形圓形紙質之葉體，產於日本之 *Phyllitis* *Renéi* (Mak.) C. Christensen 一種亦有具兩種子囊群之特性，習性亦同，故當歸於本種色一仁焉。

## PLATE 28.

**BLECHNUM EBURNEUM** Christ.

**BLECHNUM EBURNEUM** Christ in Bull. Geogr. Bot. Mans (1902) 233, c. fig.; C. Chr. Ind.

153 (1906); Matthew in Journ. Linn. Soc. 39: 351 (1911).

*Rhizome* rather long, 4 mm. thick, oblique, clothed with dark brown, lanceolate subulate scales  $\frac{1}{2}$  cm. long, entirely glabrous in other parts; *stipes* fasciculate, those of the sterile fronds 48 cm. long, those of the fertile somewhat longer, rigid, thick as raven's quill, reddish stramineous; the sterile *frond* 20-30 cm. long, 2.5-4 cm. broad, elongate lanceolate, acuminate, gradually attenuate towards the base, pinnate; rachis quite distinctly sulcate above, terete underneath; pinnae 30-58 on each side, the lower ones strongly reduced into auricles, the upper ones closely pectinato-patent with very narrow acute sinuses, linear-lanceolate, falcate, broadly adnate but not decurrent and dilated on the upper side at the base, 1.8-2.5 cm. long, 4 mm. broad, very entire and acute, *texture* toughly coriaceous, whitish below and pale green above, margin strongly reflexed, provided at the point of insertion with the rachis with a dark brown deciduous linear scale; veins hidden completely; fertile *frond* as long as or slightly longer than the sterile, strongly attenuate towards the base, pinnate, pinnae numerous, remote, the lower ones about 1 cm. apart and much closer upward, adnate but contracted above the base with round broad sinuses, linear, pod-like, apiculate,  $1\frac{1}{2}$  cm. long, 2 $\frac{1}{2}$  mm. broad, plane above, inflated below; inducium persistent, shining green, convex, covering the entire sorus.

Distribution: Szechwan, Hupeh, Kweichow.

To characterize this very distinct species, it seems fit to quote Christ's states ment, "Espèce tres particuliere par son tissu durement coriace, sa couleur claire, se-pinnæ fertiles enfilees par des sores cylindrique a indusie persistent". This unique fern was first collected by Pere J. Bodinier, Nov. 4, 1897, in the vicinity of Kweiyang, Kweichow, on rocks by the stream, and about simultaneously by Rev. E. Faber in Omei Shan, W. Szechwan, the latter specimen was identified by Baker at Kew as *B. spicant* (L.) Wither. It is most likely as Dr. Christensen remarked that all *B. spicant* reported from W. China by earlier collectors is *B. eburneum* Christ.

Plate 28. Fig. 1. Habit sketch (natural size). 2. A fertile pinna (x 6). 3. The same, a cross section, showing inducium and attachment of sporangia (x 16). 4. Two sporangia with spores (x 75). 5. Scales from rhizome (x 30).

## 第二十八圖

## 象牙烏毛蕨 (水龍骨科)

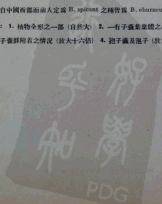
## BLECHNUM EBURNEUM Christ.

地下莖細長，徑約三釐，斜行，被以暗褐色放射狀針形之鱗片，鱗片長五釐，其餘部分則完全光滑，莖柄叢生，在無孢子囊葉莖柄長四十八釐，有孢子囊葉莖柄略長，堅硬，類似錫管，紅褐色；無孢子囊葉莖長二十五至三十釐，寬二分半至四分，長披針形，漸尖頭，至尾部漸窄縮，一次羽狀；葉軸上面有顯明之槽，下面則圓柱狀，小葉每個有三十至五十八個，在下部者短縮成耳狀，在上部者則漸展成線狀，開展，其羽脈中脈，小葉線形披針形，緣狀彎曲，基部寬而端則何不上延展，上側基腳膨脹，長約十八至二十五釐，闊四釐，全緣，銳尖頭，葉面厚革質，下面呈白色，上面深綠色，邊緣反卷，在葉體與葉軸相連處生一暗褐色易脫落之鱗片，葉脈完全不顯，有孢子囊葉略長，基部頗寬，一次羽狀，小葉多數，線生，近基部者相距至一釐左右，近頂部者則較密集，無柄，但附着部分較窄，其間廣鈍圓而寬，小葉線形，形如葉，尖頭，長十五釐，闊二釐半，上面扁平，下面略起，子囊群蓋永存，綠色有光澤，凸圓形，完全包圍子囊群。

分布：四川，湖北，貴州。

本種為一特殊之種類，最早在 1897 年 *Père J. Bodinier* 採於貴州附近深野石上，同時 *Rev. E. Faber* 又採得於四川之峨嵋山，後者經 *Baker* 氏定為 *Blechnum spicant* (L.) *Wittler*，但經 *Christensen* 氏證明凡產自中國西部而前人定為 *B. spicant* 之種皆為 *B. eburneum* *Christ.*

圖說：1. 植物全形之一部 (自然大) 2. 一有子囊葉葉體之小葉 (放大六倍) 3. 同上橫切面示其子囊蓋及子囊群附着之情況 (放大十六倍) 4. 孢子囊及孢子 (放大七十五倍) 5. 地下莖之鱗片 (放大三十倍)。



## PLATE 29.

## GYMNOPTERIS VESTITA (Wall.) Underwood

## POLYPODIACEAE

**GYMNOPTERIS VESTITA** (Wall.) Underw. in Bull. Torr. Club. 29:627 (1902); C. Chr. Ind. 342 (1906); Matthew in Journ. Linn. Soc. 39: 369 (1911).

*Grammitis vestita* Wall., List 12 (1828).

*Gymnogramma vestita* Presl, Tent. 218 (1838); HK. Ic. Pl. t. 115; HK. BK. Syn. Fil. 379; Christ Farnkraut, Erde 66.

*Syngnema vestita* Moench, Ind. LX (1857).

*Neurogramma vestita* Diels in Nat. Pfl. Fam. I. 4, 262

*Rhizome* rather thick, short, obliquely ascending, clothed with dense silky yellow linear-subulate scales; *stipes* 7-15 cm. long, wiry, but rigid, shining ebeneous, more or less furfuraceous, the scales at the base are dense and similar to those on rhizome; *fronds* 15-30 cm. long, 3-4 cm. broad, simply pinnate under a larger terminal pinna, pinnae 7-14 on each side, in distinct subopposite or alternate pairs, ovate or cordate-ovate or oblong, entire, often with an auricle at the superior base, obtusish, the lower ones distinctly stalked, the upper sessile, the middle 2-2.5 cm. long, 7-12 mm broad; *texture* thick, but flaccid, both sides, especially the under, densely coated with fine velvety ferruginous hairs; *veins* flabellate towards the edge; *sori* forked, on the veins, almost completely hidden in hairs, indusium destitute.

Distribution; Himalayas to China: Yunnan, Szechwan, Shensi, Kansu, Chihli.

Plate 29. Fig. 1. Habit sketch (natural size). 2. A pinna, showing venation and disposition of sori (x 3). 3. Sporangium (x 149). 4. Scale from the base of stipe (x 27). 5. Hair from the under side of pinna (x 27). 6. Hair from the upper side of pinna (x 27). 7. Scales from rhizome (x 27).



## 第二十九圖

## 金毛裸蕨(水龍骨科)

*GYMNOPTERIS VESTICA* Underwood.

地下莖短而肥壯 斜向上伸密覆以黃色絲狀長尖披針形之鱗片；葉柄長七至十五粉，圓錐狀，甚堅硬，黑色有光澤，密被披針狀鱗片，基部之鱗片一如地下莖上所生者；葉體長十五至三十粉，寬三至四粉，一次羽狀，頂部小葉甚大，兩個小葉各四至七個，是對生或互生，卵圓形心臟形或長圓形，全緣，在上部基部具一耳，鈍圓，上部小葉有顯明之柄，下部者則無柄，中部小葉長約二十至二十五粉，質厚而硬，兩面皆被絨狀紅色之毛，葉脈近邊緣處作扇狀，子囊群分叉，生於脈上，幾全被其毛包圍，無子囊群蓋。

分布：自喜馬拉耶山至中國雲南四川陝西甘肅河北皆有之。

圖註：1. 植物全體(自然大) 2. 小葉示其葉脈及子囊群之位置(放大三倍) 3. 子囊群(放大一百四十九倍) 4. 葉柄基部之鱗片(放大二十七倍) 5. 葉體下面之茸毛(放大二十七倍) 6. 葉體上面之茸毛(放大二十七倍) 7. 葉基之鱗片(放大二十七倍)。



## PLATE 30.

## PLAGIOGYRIA HENRYI Christ

## POLYPODIACEAE

**PLAGIOGYRIA HENRYI** Christ in Bull. Boiss. 7:8 (1899); Diels in Nat. Pfl. Fam. 1. 4 282; C. Chr. Ind 496 (1906).

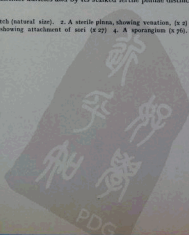
*Lomaria decurrens* Baker in Kew Bull. (1906) 9.

*Caudex* erect, naked; *stipes* tufted, castaneous, base incrassate, sharply trigonous, those of the sterile frond 10-13 cm. long, those of the fertile frond 30-37 cm. long; sterile frond oblanceolate, thin membranaceous, simply pinnate, 37-45 cm. long, 6-10 cm. broad at the middle, gradually attenuate towards the base with the lowest 3 pairs reduced to distinct and broadly adnate auricles, the central pinnæ lanceolate, confluent with very narrow sharp sinuses, 3-5 cm. long, 8-12 mm. broad at the base, which is broadly adnate, margin prominently serrate towards the apex and obscurely crenate below; *veins* lax, distinct, mostly once-forked or simple; fertile frond about 7 cm. broad, pinnæ far apart, 4 cm. long, 3-4 mm. broad, reduced towards the base, linear, distinctly stalked and beaked at the apices.

Distribution: Yunnan, Anwei, Chekiang, and also Annam.

Distinguished by its long oblanceolate frond, gradually attenuate downward with the lower pinnæ reduced to distinct auricles and by its stalked fertile pinnæ distinctly beaked at the apex.

Plate 30. Fig. 1 Habit sketch (natural size). 2. A sterile pinna, showing venation, (x 2). 3. A cross section of fertile pinna, showing attachment of sori (x 27). 4. A sporangium (x 76). 5. Two spores (x 145).



## 第三十圖

## 亨氏瘤足蕨 (水龍骨科)

## PLAGIOGYRIA HENRYI Christ.

莖直立，徑數無鱗，葉柄疏生，紫褐色，基部粗壯，三棱，無子囊葉長十至十三粉，有子囊葉長達三十至三十七粉，無子囊葉葉間波狀形，薄膜質，一次羽狀，長三十七至四十五粉，中部闊六至十粉，近基部漸窄縮，最低三對小葉有顯明寬形附着之耳，中部小葉狹針形，其闊隨葉平而縮，長三至五粉，基部闊八至十二粉，無柄，近頂部邊緣波狀而狀，下部不顯明圓曲狀；葉脈細稀，顯明，不分叉或一次分叉；有子囊葉葉間約寬七粉，小葉相形較遠，長四粉，闊三四粉，基部窄瘦，線形，有柄，尖端喙狀。

分布：雲南，安徽，浙江，在安徽亦有之。

本種特著之性質為長狹針形之葉體漸向下窄瘦，至基部小葉則直成耳狀，有子囊葉之尖端或喙狀。

圖註：1. 植物全形之一部（自然大） 2. 無子囊葉之小葉示其葉脈（放大二倍） 3. 有子囊葉之橫斷面示其子囊群着生狀況（放大二十七倍） 4. a. (下圖) b. (上圖) 孢子囊（放大七十六倍） 5. 兩孢子（一百四十五放大倍）。





## PLATE 31.

**ADIANTUM GREENII** Ching (fig. 1-5)

## POLYPODIACEAE

**ADIANTUM GREENII** Ching in Sinensia 1: 8 (1929).

*Rhizome* short, profusely fibrous-rooted, scales blackish, dense, ascending, linear-subulate; *stipes* 2-3 cm. long, caespitose-fasciculate, dark ebeneous, naked, capillaceous and so is the rachis; *fronds* 1.5-3.5 cm. long, rarely longer, about 2 cm. broad, simply pinnate; *pinnae* 3-4, sometimes 2 only, 6-8 mm. apart, petiolate (petioles  $1\frac{1}{2}$  mm. long), erect-patent, the terminal one with a petiole 5-7 mm. long, articulate at base, leaving a persistent petiole upon falling, broadly short-triangular, rarely oblong-obovate, rotundocuneate and entire at base, truncate and very obscurely undulate on the broad truncate apex, 6-9 mm. long, 7-10 mm. broad; *veins* 4-5, flabellate from the base, each again 3-5 forked, veinlets fine, distinct; *sori* large, solitary, placed at the apex, indusium transversely oblong-reniform, 4-6 mm. long, 1.3 mm. broad, dark brown, attached to a broad shallow sinus; *texture* subcoriaceous, translucent, bluish on both sides.

*Distribution*: Kwangsi.

Plate 31. Fig. 1. Habit sketch (natural size). 2. A pinna, showing venation and sori (x 3). 3. Scales from rhizome (x 48). 4. Sporangia (x 100). 5. Dorsal side of *indusium*, showing attachment of sori (x 10).

## 第三十一圖 (一至五圖)

## 格氏鐵線蕨 (水龍骨科)

*ADIANTUM GREENII* Ching.

地下莖短，多根狀，鱗片黑色，密生向上，線形，尖端細針狀；葉柄長二三份，蓋生初草蓋，深黑色，無鱗片，纖維如絲狀，葉軸亦如之；葉闊長十五至三十五釐，稀有時長者，寬二釐，一次羽狀；小葉三四個，有時僅兩個，相距約六至八釐，有柄，柄長一釐半，直立舒展，頂部小葉長五至七釐，基部耳狀，脫落時葉柄殘留葉軸上，寬短三角形，稀有時倒卵形者，基部圓楔形全緣，頂部截形，隱約成波狀，長六至九釐，寬七至十釐，主脈四五條從基部展開成扇狀，每條再三次或五次分叉，支脈細微不顯明，子囊群大，單生於頂部，子囊蓋扁長卵狀，長四至六釐，寬一三釐，暗褐色，着生於寬而淺之透絲缺刻上，輪帶單直，稍透明，兩面皆呈藍色。

分布：廣西。

圖註：1. 植物全形 (自然大) 2. 小葉一片示其脈及孢子囊群 (放大三倍) 3. 地下莖上之鱗片 (放大四十八倍) 4. 孢子囊 (放大一百倍) 5. 子囊群蓋之背面，表示子囊群附着之狀 (放大十倍)。



## PLATE 31.

**ADIANTUM NANUM** Ching (fig. 6-9)

## POLYPODIACEAE

**ADIANTUM NANUM** Ching in *Sinensia* 1: 9 (1929).

*Rhizome* very short, small, scales stiff, ascending, dense, subulate, blackish; *stipes* numerous, fasciculate-rosulate; capillaceous, but stiff, dark ebeneous, naked, so is the rachis, 1 cm. or less long; *fronds* 1-1.5 cm. long, 7 mm. broad, simply pinnate, glabrous, deep shining green above, bluish beneath; *pinnae* 3-5, rarely more, alternate, petiolate (petioles 1-2 mm. long, persistent), spreading orbicular to subtriangular, rounded or shortly cuneate at base, entire, obscure undulate on the outer margin, 2-4 mm. long, rarely longer; *texture* thick, stiff, coriaceous; *veins* fine, free, principal veins 2, radiating from the apex of petiole, erect-ascending, each again 1-2-forked towards outer margin, translucent; *sovi* solitary, one to each pinna, small, inducium orbicular, entire, dark brown, coriaceous, attached to a rounded shallow sinus of the crenature, springing from veins and parenchyma, and reaching down as far as the centre of the pinnae.

Distribution: Kwangsi.

Plate 31. Fig. 6. Habit sketch (natural size). 7. A pinna, showing venation and sovi ( $\times 8$ ). 8. Scales from rhizome ( $\times 45$ ). 9. Sporangium ( $\times 1000$ ).

## 第三十一圖 (六至九圖)

## 矮鐵線蕨 (水龍骨科)

ADIANTUM NANUM Ching.

地下莖甚短小，鱗片剛硬，逆生向上，針狀，微黑；葉柄多數，叢生，纖維如絲，堅硬，深黑色，無鱗片，葉軸亦如之，長一粉弱；葉體長十至十五厘米，寬七厘米，一次羽狀，光滑，上面深綠色，下面稍帶紫色，小葉三五個，稀更多，互生，有柄，柄長一二厘米，永存，向外傾斜，圓形全緣或三角形，基部圓形或短楔形，全緣，外緣稍微波狀，長二至四厘米，稀更長，厚革質，脈紋甚細，具兩條斜脈，自小葉柄基部射出，直行向上，至邊緣再一次或二次分叉，稍透明，孢子囊群單生，每小葉上僅一枚，子囊圓形，全緣，暗褐色，革質，附着於圓齒之間面淺之缺刻上，由葉脈及薄膜組織生出，直達小葉之中部。

分布：廣西。

圖說：6. 植物全形(自然大) 7. 一小葉示其脈及子囊群(放大八倍) 8. 地下莖之鱗片(放大四十八倍) 9. 孢子囊(放大一百倍)。



## PLATE 32.

## PTERIS DELTODON Baker

## POLYPODIACEAE

**PTERIS DELTODON** Baker in Journ. Bot. 26: 226 (1888); C. Chr. Ind. 596 (1906); Matthew in Journ. Linn. Soc. 39: 389 (1911).

*Pteris nana* Christ in C. Chr. Ind. 603 (1906).

*Pteris trifoliata* Christ in Bull. Boiss. 7: 7 (1899); Diels in Nat. Pfl. Fam. 1. 4. 292 (non Fée 1857).

*Rhizome* short, erect, densely fibrous-rooted; *stipes* tufted (4-7), slender, naked, shining stramineous, 10-30 cm. long; *frond* deltoid-ovate, simply pinnate, of thick coriaceous texture, 10-20 cm. long, green and glabrous on both sides; *pinnae* 3-5, with the terminal one much the largest, oblong-ovate to broad lanceolate, 5-15 cm. long, 1.2-2.5 cm. broad in the middle, sessile except the terminal one, which is cuneate at base and usually shortly petiolate, conspicuously inciso-dentate at the sterile tips, which is acuminate in the terminal pinna, and usually acute in the lateral ones; *veins* lax, branching at angles of 75° from the costa, simple or forked, very distinct; *sovi* continuous from the base up to within a short distance of the tip of pinnae, indacium narrow, glabrous, dark-brown.

*Distribution*: Szechwan, Kweichow, Yunnan, Kwangtung.

This species is nearest to *Pteris cretica* L. from which differs in but fewer pinnae, of which the lowest are simple, the serrations in sterile parts are also different and farther differs by laxer veins. The frond is generally trifoliate but larger forms often have five leaflets with the lower pair separate from the one next above by a wingless rachis about 1-2 cm. long. *Pteris nana* Christ from Yunnan is perfectly identical with Baker's type from Omei Shan, Szechwan, differing only in somewhat broader pinnae. A specimen, No. 8366, in Hongkong Herbarium from Kwangtung (without precise locality) appears almost congeneric with the present species, differing only by perfect entire sterile pinnae. *Pteris nana* Christ var. *quiquefoliata* Copel. from Fukien, a plant larger than the type having lateral pinnae cleft at the base, should be called *P. deltodon* Baker var. *quiquefoliata* (Copel.) Ching, if it does not represent a mere vigorous form of *P. cretica* L.—R. C. C.

Plate 32. Fig. 1. Habit sketch (natural size). 2. A portion of fertile pinna, dorsal side (x 2). 3. A fertile pinna, ventral side (x 2).

## 第三十二圖

## 鳳凰尾蕨 (水龍骨科)

**PTERIS DELTODON** Baker.

地下莖短，直立，密生鬚狀根；葉柄簇生（四至七枚），細瘦，無鱗片，有光澤，船形，長十至三十公分，葉片三角卵形，一次羽狀，厚革質，長十至二十公分，兩面皆綠色光滑，小葉三五個，頂端一個異常寬大，長卵圓形至廣披針形，長五至十五公分，中部寬十二至二十五公分，兩個小葉均無柄，頂端小葉楔形具短柄，其兩端漸尖，無子囊群，缺刻齒狀，兩個小葉則端急尖，緣稍圓，葉脈稀疏，由中肋分出成或七十五度斜角，單股或分叉，甚明顯，子囊群由基部延展至小葉頂端之下，子囊群蓋平，光滑，暗褐色。

分布：四川，貴州，雲南，廣東。

本種與 *Pteris cretica* L. 相近，其異點為小葉數較少，基部簡單，葉脈較疏，至於葉頂缺刻形狀亦不同。葉體通常俱生三小葉，但大者亦有時生五葉，基部一對小葉與中部小葉相隔至一二公分，產自雲南之 *Pteris nana* Christ. 與 Baker 氏採自四川峨嵋之標本完全相同，此小葉略寬耳，香港植物院中採自廣東之第八三六六號標本亦同此種，但葉體全緣而無子囊群，*Pteris nana* Christ. var. *quiquefoliata* Copel. (福建產) 比 *Christensen* 之原種稍大，若非 *P. cretica* L. 之流傳品種，當改名為 *Pteris deltodon* Baker var. *quiquefoliata* (Copel.) Ching.—仁昌。



## PLATE 33.

**PTERIS HUI** Ching.

## POLYPODIACEAE

**PTERIS HUI** Ching in *Sinensia* 1: 9 (1929).

*Rhizome* very short, upright; scales linear-subulate, dark brown, rather thick, 2-3 mm. long; *stipes* tufted, 4-8 together, naked, stramineous, flattend upon drying, broadly channelled above, 6-17 cm. long, 2 mm. broad; *fronds* short deltoid, uniform, bipinnate, 5-10 cm. long, a little less broad, glabrous on both sides; lateral pinnae 1-2 pairs, opposite, petiolate; the lower pair much the largest, with petioles 5-10 mm. long, 2-3-partite, pinnules oblong-lanceolate to oblong-ovate, 2.5-6 cm. long, 1.5-2 cm. broad at the middle, shortly petiolate or subsessile, distinctly inciso-dentate on the upper sterile portion; the middle pair (if there any) simple, shortly petiolate or subsessile, of same shape and size as the lower ones; the terminal pinna always simple, of same shape, but much longer (-9 cm.) petiolate; rachis stamineous, naked, wingless; *texture* thick, stiff, coriaceous, shining light green (when living); *midrib* prominently raised below, rather flattened above, lateral veins numerous, distinctly raised above, patent, 1-1.5 mm. apart, ended near the base of the teeth, never in the mucron; *sovi* dark brown, linear, continuous from the base to within a short distance from the tip, or only up to the middle of the margin, or sometimes only a short way upward from the base, indusium narrow, rather thick, rigid, dark gray, continuous.

Distribution: Kwangsi.

Plate 33. Habit sketch (natural size).



## 第三十三圖

## 胡氏鳳尾蕨(水龍骨科)

## PTERIS HUI Ching.

地下莖甚短，直立，鱗片線形，尖刺頭，暗褐色，頗厚，長二至三粉，葉柄四至八枚簇生，無鱗片，棕褐色，乾時扁平，上面有棱，長六至十七粉，圓二邊；葉體短三角形，兩次羽狀，長五至十粉，暗綠，兩面皆光滑，兩個小葉一二對，對生，有柄，基部一對頗大，葉柄長五至十粉，小葉再分裂成二三級二次小葉，二次小葉長圓披針形，至長圓卵形，長二粉半至六粉，中部寬一粉半至二粉，具短柄或幾無柄，頂端無子囊群，顯然或缺刻齒牙狀，中部一對小葉簡單，具短柄或幾無柄，與基部一對形態僅廣各相同；頂部小葉水瀉簡單，形態亦類斯，但柄較長，達九粉；葉輪深褐色，無鱗片，亦甚重；葉體厚革質，堅硬，綠色，有光澤，中肋在下面隆起，上面平滑；支脈頗多，上面顯明，隆起，間強，相離一穗至一穗半，直達葉緣則葉之基部而止，復不突出成刺頭，子囊群暗褐色，圓形，由下部直走至葉中部或近頂端而沒，有時僅在近基部處子囊群蓋平而頗厚，堅實，暗灰色，連續。

分布：廣西。

圖註：植物全形(自然大)。





## PLATE 34

## PTERIS DIMORPHA Copeland

## POLYPODIACEAE

**PTERIS DIMORPHA** Copel. in Phil. Journ. Sci. Bot. 3 C: 282 (1908); C. Chr. Ind. Suppl. 66 (1906-12); Matthew in Journ. Linn. Soc. 39: 389 (1911).

*Rhizome* short, ascending, about 4 mm. thick, densely fibrous-rooted, clad at the apex in minute subulate castaneous scales; *stipes* shining, reddish towards the base, dark stramineous upward, narrowly winged on the uppermost part; *frond* strongly dimorphous, the sterile ones 10-15 cm. long, the fertile 25-30 cm. long, the sterile oblong-deltoid, tripartite, glabrous, of chartaceous texture, shining light green on both surfaces, lateral pinnae ovate, falcate, to 5 cm. long, deeply incised, segments about 5 on each side, close, oblong, obtuse, the terminal one much the largest, to 2 cm. long, sharply serrate or subentire, the middle pinna the largest, to 10-15 cm. long and 3-4 cm. broad, broad lanceolate, gradually acuminate, with 6-10 segments on each side, the lowest ones reduced and narrowly decurrent along the rachis; fertile frond 10-15 cm. long (sometimes only 5 cm. long), pinnate like *Pteris ensiformis* Burm., with 1-2 pinnae on each side under the terminal one, the lowest ones forked or simple, 6 mm. broad, all decurrent in a narrow wing, the terminal pinna the largest, to 10 cm. long, often irregularly pinnatifid; *inducium* narrow, continuous to the blunt serrate apex, dark gray.

Distribution: Kwangtung.

This distinct and rather uniform species was first discovered by Dr. Charles G. Matthew of the British Navy in the mountains in southeastern Kwangtung, and later in 1927 was collected in the mountains on North River by Prof. W. Y. Chun, of Botanical Laboratory, Canton, whose copious materials have recently been received by me. The specimens match the type very well, except that it shows somewhat less dimorphism and in this respect it may be well considered as an intermediate between *P. multifida* Poir and *P. ensiformis* Burm.—R. C. C.

Plate 34. Fig. 1. Habit sketch (natural size). 2. A portion of sterile segment, showing venation and serrations (x 4). 3. A portion of fertile segment, showing venation and *inducium* (x 4).

## 第三十四圖

## 二形鳳尾蕨 (水龍骨科)

*PTERIS DIMORPHA* Copeland.

地下莖短，上升，深約四種，具密生根，頂部密被小形葉色針形之鱗片，葉柄有光澤，近基部略帶紅色，上部暗紅褐色，頂部有窄翼；葉體顯然具兩種形態。無子囊葉長十至十五粉，有子囊葉長二十五至三十粉，無子囊葉長三角形，三出，光滑，紙質，上面淺綠有光澤，側生小葉呈伏卵圓形，長五粉，有深缺刻，裂片每個五枚，長圓形，鈍頭，頂端一片最大長二粉，缺刻曲狀或幾全緣，中央小葉最大，長十至十五粉，寬三四粉，廣披針形，漸尖頭，每個有六至十個裂片，基部裂片窄細，葉軸向下延展；有子囊葉長十至十五粉，有時僅長五粉，羽狀一如 *Pteris ensiformis* Burm.，頂端小葉之下每個各具一二枚小葉，基部小葉分叉，或簡單，寬達六粉，皆向下延長，形成窄翼，頂端小葉最大，長達十粉，通常不規則羽狀分裂；子囊葉近快平源續連山狀之鈍圓葉端，暗灰色。

分布：廣東。

本種為 Charles G. Matthew 博士發見於廣東東南部之山中，其後陳煥堯教授又採之於北江附近，作者詳為審定與 Matthew 之標本無異，但其無子囊葉及有子囊葉之差別較少耳，本種位置當合乎 *Pteris multifida* Polr. 與 *Pteris ensiformis* Burm. 之間一仁品。

圖註：1. 植物全體 (自然大) 2. 無子囊葉之裂片示其葉脈及鋸齒 (放大四倍) 3. 有子囊葉之一部示其葉脈及子囊群蓋 (放大四倍)。



## PLATE 35.

## PTERIS ACTINIOPTEROIDES Christ

## POLYPODIACEAE

**PTERIS ACTINIOPTEROIDES** Christ in Bull. Boiss. 7: 6(1899); Diels in Nat. Pfl. Fam. 1. 4. 292; C. Chr. Ind. 591 (1906); Matther in Journ. Linna. Soc. 39:388 (1911); C. Chr. in Medd. Göteborg. Bot. Trädg. I. 96 (1924).

*Rhizome* short; *stipes* in dense tuft, upright or spreading, slender, angular, 3-6 cm. long, reddish-stramineous or light ebeneous, polished; *frond* dimorphic, the sterile one much shorter than the fertile, quiquefoliate, the 7-15 cm. long, broadly deltoid, bipinnate, pinnae 2-3 on each side under the tri-foliolate terminal one, the basal ones shortly petiolate, usually 2-3-forked, the middle ones forked or simple, the uppermost ones always simple, segments equal, linear, 4-6 cm. long, 1-2 mm. broad, margin entire except the apex, which is usually sharply serrate, *texture* chartaceous, glossy, entirely glabrous, rachis reddish; *inducium* rather broad ( $\frac{1}{2}$  mm. broad), whitish, continuous with entire margin, not extending to the serrated apex of the segment.

Distribution: Yunnan, Szechwan, Hupeh.

A very interesting little fern, which is, in habit, somewhat intermediate between *P. multifida* Poir. and *P. dactylina* Hk., from both of which differs, by smaller size, very narrow fertile segments and castaneous stipes and rachis. It was first collected in Mengtze, Yunnan, by A. Henry and reported ever since from Szechwan and Hupeh. According to Christensen the plant from W. szechwan grows to 40 cm. tall including the stipe, with 6-7 pairs of lateral pinnae under a fan-shaped apex consisting 7 segments; but all the specimens, No. 2965, collected by Prof. K. K. Tsoung (1921) on Tai Hwa Shan, Yunnan, perfectly agree with Christ's type in dimension, and it is evidently a common fern, growing in the crevices of exposed rocky cliff as his notes indicate.—R. C. C.

Plate 35. Fig. 1. Habit sketch (natural size). 2. An ultimate segment, showing venation and inducia, ( $\times 3$ ). 3. A cross section of fertile segment, showing inducia and sori ( $\times 5$ ).

## 第三十五圖

## 豬鬃鳳尾(水龍骨科)

*PTERIS ACTINOPTEROIDES* Christ.

地下草莖：葉柄簇生，直立或開張，細瘦有稜，長三里六分，紅褐色，或淺黑色，平滑；葉體具兩種形態，無子囊葉較有子囊葉短，具五個小葉，有子囊葉長十至十五分，廣三角形，二次羽狀，頂端小葉三出分裂，以下側生小葉每個葉有二三個，在基部者具短柄，二或三出，中部者簡單或分叉，最上者背側單，小葉裂片等長，線形，長四至六分，寬一二釐，全緣，近前緣則作波狀齒狀，紙質，有光澤，完全光滑，葉軸紅色；子囊葉蓋甚寬，約半圓白色，經葉緣附着，止於裂片之齒狀頂端。

分布：雲南，四川，湖北。

本種習性介乎 *Pteris multifida* Poir. 及 *Pteris dactylina* HK. 之間，但其葉則其形態較小，無子囊裂片較短，及葉柄葉軸作栗色，此種首由 A. Henry 發見於雲南，按 Christensen 之記載，產於四川者部者高至四十分，上着六七對小葉，但據觀光教授由雲南採得之標本(第二〇六十五號)與 Christensen 氏之記錄幾全相同，在雲南殊為罕見之種也。

圖註：1. 植物全形(自然大) 2. 小葉最上裂片示其脈紋及子囊群(放大三倍) 3. 有子囊葉之橫切面示其子囊群及子囊群蓋(放大五倍)。



## PLATE 36.

**PTERIS PAUPERCULA** Christ

## POLYPODIACEAE

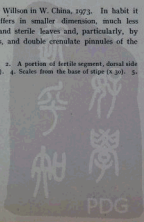
**PTERIS PAUPERCULA** Christ in Bull. Geogr. Bot. Mans (1906) 131; C. Chr. Ind. Supl. 67 (1906-13); Matthew in Journ. Linn. Soc. 39:389 (1911).

*Rhizome* thick, short, densely clothed in brown lanceolate subulate scales and so is the stipe; leaves densely fasciculate, numerous; *stipes* erect, reddish-straminous, terete, rigid and like rachis densely asperous with subulate and setaceous short spreading brown slender scales, falling off at distance of 2-3 cm. above the base; stipes of sterile leaves 6 cm. long, those of the fertile 15 cm. long, the sterile *frond* 6 cm. long, 3 cm. broad, oval-oblong, bipinnatifid; pinnae remote, about 5 on each side, the lowest shortly petiolate, cut down nearly to the costa with lower segments forked again, the upper ones adnately decurrent, simple or forked, segments obtuse,  $\frac{1}{2}$  cm. long and broad, margin double crenulate; the fertile frond 11 cm. long, 6 cm. broad, bipinnate; pinnae remote, 5-6 on each side, the lower ones pinnate into 5-6 pinnules, the upper ones simple, pinnules linear, 4-5 cm. long, 2-3 mm. broad, acute, entire; *veins* hidden, twice or thrice forked; color light green, surfaces glabrous, *textura* herbaceous, somewhat pellucid; *sori* continuous to the apex,  $\frac{1}{2}$  mm. broad, indusium membranaceous, narrow, lacerato-fimbriate.

Distribution: Szechwan.

A remarkable fern discovered by E. H. Willson in W. China, 1973. In habit it closely allied to *P. ensiformis* Burm. but differs in smaller dimension, much less pronounced dimorphism between the fertile and sterile leaves and, particularly, by densely scaly reddish-brown stipes and rachis, and double crenulate pinnules of the sterile leaves.

Plate 36. Fig. 1. Habit sketch (natural size). 2. A portion of fertile segment, dorsal side (x 20). 3. Scale from the upper part of rachis (x 105). 4. Scales from the base of stipe (x 30). 5. Venation and attachment of sori (x 40).



## 第三十六圖

## 黃毛鳳尾蕨 (水龍骨科)

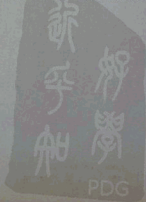
*PTERIS PAUPERGULATA* Christ.

地下莖肥短，密覆以褐色尖狀針形之鱗片，葉柄如之，簇生，多數，直立，紅褐色，管狀，堅硬，密被以針狀，有刺頭，短小，間強，褐色之鱗片，鱗片至距基群二三分處則脫落；無子囊葉柄長六分，有子囊葉達十五分；無子囊葉柄長六分，寬三分，長卵圓形，二次羽狀，小葉波曲，每個有五個，近基部者有柄，削去至中部，而下部之小裂片更分叉，上部裂片附着向下延長，簡單或分叉，裂片鈍頭，修廣各約半份，邊緣波曲狀；有子囊葉長十一分，寬六分，一次羽狀，小葉波曲，每個五六個，最下一個再裂成五六個二次小葉，在上部者則簡單，二次小葉錢形，長四至五分，寬二至三個，鈍頭，全緣；葉脈不顯明，二三次分叉；葉柄淡綠色，光滑，橫質，頗透明；子囊群連續及頂部，寬半個，子囊群呈沿橫質，夜寧，不規則波曲狀分裂。

分布：四川。

本種在 1913 年為 W. H. Wilson 氏發見於四川，其習性與 *Pteris ensiformis* Barm. 相近，但較小，有子囊葉與無子囊葉之差異較少，尤顯著之異點為赤紅褐色鱗片葉柄及葉軸與無子囊葉之位置由狀之裂片。

圖註：1. 植物全形（自然大） 2. 有子囊葉裂片之一部正面（放大二十倍） 3. 葉軸上部之鱗片（放大一百零八倍） 4. 葉柄基部之鱗片（放大三十倍） 5. 葉脈及子囊群之附着狀況（放大四十倍）。



## PLATE 37.

**PTERIS EXCELSA** Gaudichaud-Beaupré

## POLYPODIACEAE

**PTERIS EXCELSA** Gaud. in Freyc. Voy. Bot. 388 (1824); HK. Sp. Fil. II. t. 136; HK. BK. Syn. Fil. 159; Bedd. Ferns S. Ind. t. 218, Handb. 114 (1892); Christ, Farnkraut. Erde. 167; Diels in Nat. Pfl. Fam. I. 4. 292; C. Chr. Ind. 597; v. A. v. R. Malay. Ferns 368 (1908); Matthew in Journ. Linn. Soc. 39: 389 (1911).

*Pteris terminalis* Wall. List 102 (1828); Ag. Rec. 20 (1839).

*Rhizome* short, thick, erect, densely clothed in narrow lanceolate brown scales; *stipes* tufted, stout, to 90 cm. long, 6-10 mm. thick, erect, naked, glossy, green or stramineous or brownish, scales sparse and brown; *frond* 1½-2 m. long, broadly deltoid, terminal pinna to 30 cm. long or longer, 7.5 cm. broad, cut down to the costa into numerous rather closely placed falcate lanceolate segments on each side 4 cm. long, 6-10 mm. broad, dilated, narrowly oblique decurrent, slightly serrated on the barren parts, lateral pinnae 5-10 on each side, similar to the terminal one, the lowest much the largest, over 30 cm. long, 15 cm. apart, oblong-lanceolate, pinnatifid down to the rachis under the entire lanceolate caudate apex, sometimes forked in the basal pinnae; *leaflets* chartaceous, light green above, pale or glaucescent beneath, naked on both surfaces; *veins* once-forked, 3 mm. apart at the base; *sori* not reaching the apex of the segments, inducium gray, membranaceous, entire.

*Distribution*: India, the Philippine Islands, Malayasia, Sandwich Islands, Corea, China: Szechwan, Yunnan, Kweichow, Hupeh, Kwangsi.

Plate 37. Fig. 1. A portion of the plant (natural size). 2. Two ultimate segments, showing venation and sori, (enlarged).



## 第三十七圖

PTERIS EXCELSA Gaudichaud-Beaupre

## 溪鳳尾蕨 (水龍骨科)

地下莖短，粗壯，直立，密覆以披針形褐色鱗片；葉柄簇生，粗壯，長達九十公分，徑六至十公分，直立，裸露，有光澤，綠色或暗褐色或淺褐色，鱗片甚稀，褐色；葉柄長一尺又四分之三至二尺，廣三角形，頂端小葉達三十餘，或稍長，闊七公分，側至中肋形成多數密生線狀披針形之裂片長約四份，寬六至十份，狹窄，窄斜向下延長，在側子囊葉略成鋸齒狀，側生小葉每個各五至十個，形與頂端小葉相同，在基部之小葉最大長約三十公分，闊約十五公分，長闊披針形，頂端簡單披針狀，頂端以下羽狀分裂直至葉軸，有時基部小葉分叉；葉質紙質，上面淺綠色，下面色較淡或有光，無毛，葉脈一次分叉，脈基每肋三脈；子囊群不達到裂片之頂端，子囊群呈灰色，薄膜質，全緣。

分布：印度，菲律賓群島，馬來群島，檳香山，高麗，與中國四川，雲南，貴州，湖北，廣西等處。

圖註：1. 植物全形之一部（自然大） 2. 小葉頂端裂片示其葉脈及子囊群（放大）。



PDG



## PLATE 38.

**VITTARIA PAUCIAREOLATA** Ching.

## POLYPODIACEAE

**VITTARIA PAUCIAREOLATA** Ching in Sinensia 1: 11 (1929).

*Rhizome* creeping, rather thick; scales dense, blackish; lanceolate with a long hair-pointed apex, distinctly reticulate, 5 mm. long; *fronds* remote, grass-like, 90-130 cm. long (including stipes, which are 10-14 cm. long, terete, naked), 1.3-1.5 cm. broad, linear, tape-like, pendulous, gradually attenuate from 2/3 way downward into the stipe, but not or very slightly narrowed towards a broad rounded or blunt apex; *texture* subcoriaceous, translucent, flaccid, *midrib* flattened and indistinct on both surfaces, lateral veins slender, 3-4 subparallel to the midrib, translucently distinct and connected by a transverse intramarginal vein, not rarely forked and often towards the apex of the frond scantily anastomosing into narrow linear meshes; *sori* long, reaching from near the base to the very apex, sunk in an extrorse marginal groove, 1/10 cm. deep.

*Distribution*: Kwangsi, Hainan.

Plate 38. Fig. 1. Habit sketch (natural size). 2. A cross section of frond (x 7). 3. A cross section of soriferous margin, showing indusium (x 36). 4. Scales from rhizome (x 36).



## 第三十八圖

## 圓葉書帶蕨(水龍骨科)

*VITTARIA PAUCIAUREOLATA* Ching.

地下莖匍匐，頗粗壯，鱗片密生，幾黑色，披針形，尖端細長，引線或長鬚，脈造網狀，長五釐，葉體疏離，禾草狀，長九十至一百三十釐（包括長十至十四釐之葉柄，葉柄圓筒狀，無鱗片）寬十三至十五釐，線形，下垂，向距基腳三分之二部分漸向下平縮形成葉柄，但上部稍擴張成廣圓形或鈍形尖端，幾革質，略透明，乾後，中肋扁平，在兩面皆不顯明，側脈僅三四條，與中肋幾平行，不甚透現，但橫斷可辨，由近葉緣之橫脈相連貫，有時分叉，近葉柄處通常無并成少數窄線形之網孔，子葉斜橫裂，從葉基直達頂端，陷入向外彎折之地中，深一釐。

分布： 廣西，海南島。

圖註： 1. 植物全形（自然大），2. 葉之橫斷面（放大七倍），3. 葉緣有子囊體部分之橫斷面示子囊單室（放大五十倍），4. 地下莖上之鱗片（放大三十六倍）。



## PLATE 39.

**VITTARIA NANA** Ching.

## POLYPODIACEAE

**VITTARIA NANA** Ching in *Sinensia* 1: 11 (1929).

*Rhizome* creeping, slender, clad in moderately dense dark short, castaneous, linear-subulate scales with obscurely denticulate margin; *fronds* numerous, caespitose, erect, 3-7 cm. long, 1-1.5 mm. broad, linear, gradually narrowed into the base of a short stipe, slightly narrowed towards a blunt, rarely acuminate apex, margin revolute, midrib deeply sulcate above, broadly keeled below; *testae* subcoriaceous, flaccid, glabrous; *veins* hidden; *seri* short, confined to upper 1/3, and quite a way short from the apex, often one-sided, and placed midway between costa and margin, which is at first rather broadly revolute, and finally relaxed.

Plate 39. Fig. 1. Habit sketch (natural size.) 2. Fronds, showing different stages of opening induciate margin, [enlarged]. 3. A cross section of frond, showing disposition of seri (x 30). 4. Scales from rhizome (x 20).



## 第三十九圖

## 矮葉書帶蕨 (水龍骨科)

*VITTARIA NANA* Ching.

地下莖匍匐，細瘦，莖密覆以棕色，短毛，葉色，尖橢形，略成短齒狀之鱗片；葉體多數，簇生，直立，長三至七吋，寬一至一五釐，線形，漸向下平縮形或短柄，向下漸窄，成鈍形稀至漸尖頭之葉端，邊緣透緣反卷，中間上面或深緣，下面隆起，葉體薄革質，軟弱，光滑；葉緣反卷，其後展舒，葉脈不顯；子囊群殊短，僅生於上部三分之二部分至近葉端而止，往往僅一遇有之，生在中肋與邊緣之間。

分佈：廣西。

圖註 1. 植物全形(自然大)。2. 葉體示子囊群蓋及葉緣展開之情形(放大)。3. 葉體橫斷面示子囊群之位置(放大三十倍)。4. 地下莖之鱗片(放大二十倍)。



## PLATE 40.

**ANTROPHYUM PETIOLATUM** Baker

## POLYPODIACEAE

**ANTROPHYUM PETIOLATUM** Baker mss. Christ in Bull. Geogr. Bot. Mans: (1902) 202; Baker in Kew Bull. (1906) 14; Matthew in Journ. Linn. Soc. 39: 342 (1911).

*Rhizome* short, erect; scales basal, dark brown, linear-subulate, rather dense, membranaceous; leaves several together, *stipes* naked, green, compressed, 7-14 cm. long; *frond* obovate-cuneate, long-cuspidate, 10-13 cm. long, 5-6.5 cm. broad, broadest at the upper 2/3 or still higher up; *texture* carnosu-coriaceous, green and glabrous on both surfaces; *vein* rather distinct, vertical, rarely anastomosing, areolae narrow, above 2 cm. long, 3 mm. broad; *sori* copious, slightly immersed in broad shallow grooves, sometimes jointed at the ends.

Distribution: Yunnan, Kweichow, Kwangsi.

Nearest to *A. plantagineum* Kl., yet distinct for its much longer stipe, broadly obovate-cuneate frond with cuspidate apex and much broader, closer sori only superficially immersed in broad shallow grooves. First collected in Yunnan by A. Henry, later in 1898 by Père Bodinier in Kweichow and recently known from several localities in Kwangsi. As seen in its natural habitat, it generally grows on dripping or shaded rocky cliff by mountain torrents.

Plate 40. Fig. 1. Habit sketch (natural size.) 2. A portion of the frond, showing venation and sori (x 2). 3. Sporangium (x 76) 4. Hairs from the roots (x 76) 5. Scales from rhizome (x 30)

## 第四十圖

## 長柄車前蕨 (水龍骨科)

**ANTROPHYUM PETIOLATUM** Baker.

地下莖短，直立；鱗片在近基部，暗褐色，尖線形，頗密，膜質；葉體數個叢生，葉柄無鱗片，綠色，扁圓，長七至十四呎；葉體倒卵狀形，頂端長尾狀，長十至十三呎，寬五至六呎半，頂端三分之二部分或更近頂部處最寬，肥厚革質，兩面皆綠色，光滑；脈狀極顯明，直行，稀有聯絡者，網紋罕見，長約二呎，寬三呎；子囊群頗多，微陷入寬淺之槽中，有時頂端相連。

分布：雲南，貴州，廣西。

本種與 *Antrophyum plantagineum* Ktze. 相近，但異點在較長之葉柄，寬倒卵狀形頂端長尾狀之葉體，子囊較密並微陷入寬而淺之槽中，此種最初 A. Henry 採自雲南，其後 P. de B. 又採之於貴州，今在廣西各地亦發見之，最喜生由峽兩側危巖之石上。

圖註：1. 植物全形(自然大)，2. 葉體之一部分示脈紋及子囊群(放大二倍)，3. 孢子囊(放大七十六倍)，4. 葉上之毛(放大七十六倍)，5. 地下莖之鱗片(放大三十倍)。



## PLATE 41.

**POLYPODIUM DAREAEFORMIOIDES** Ching**POLYPODIUM DAREAEFORMIOIDES** Ching in *Sinensia* 1: 12 (1929).

*Rhizome* wide-creeping, thick, densely covered with imbricate shining brown scales, which are to 4 mm. long, broadly rounded at base, gradually narrowed upward to a linear-subulate apex with ciliate margin, attached to the rhizome by a dark brown centre of the broad base; *stipes* remote, rigid, to 18 cm. long, naked, lustrous castaneous and so is the entire rachis, articulated to the rhizome; *fronds* deltoid, shortly acuminate, 22 cm. long, 15 cm. broad at base, quadripinnate; pinnae about 10 on each side, the lower ones much the largest, petiolate, erecto-patent, 8-9 cm. long, 6-7 cm. broad, deltoid, secondary rachis naked, shining castaneous, 3-4 cm. long, 1.2-1.5 cm. broad, the upper ones gradually smaller, pinnate, the pinnules of third order oblong, on a winged petiole, costule shaded castaneous near base, pinnate, segments linear-oblong, clavate, 2-3 mm. long, often bifid into short lobes of unequal length; *texture* thin herbaceous; *veins* forked, veinlets simple, 1 to each segment, obscure, diaphanous; *sori* placed mostly some distance below the branching of veins, medial, small, round, about 1/3 as broad as the segment.

Plate 41. 1. Habit sketch (natural size.) 2. A pinna (x 2). 3. A pinnule, showing venation and sori (x 4). A scale from rhizome (x 24).



## 第四十一圖

## 烏柄水龍骨(水龍骨科)

POLYPODIUM DAREAEFORMIOIDES Ching.

地下莖如芎藭狀，粗壯，密覆以覆瓦狀，有光澤，褐色之鱗片；鱗片長達四邊，基部廣圓形，漸向上平薄，或線形利頭邊緣有纖毛之頂端，在葉柄基部與地下莖附着點作暗褐色；葉柄遠端，堅硬，長達十八粉，無鱗片，有光澤，栗色，葉柄亦如之，與地下莖相連處有關節，葉體三角形，短漸尖端，長二十二釐，基部寬十五釐，兩次羽狀：一次葉每側約有十個，在基部者最大，有柄，直立而張，長八至九粉，寬六至七粉，三角形，二次葉軸無鱗片，栗色有光澤，長三至四粉，寬十二至十五釐，上部者則漸小，羽狀，三次小葉長圓形，生於有翼之柄上，其中肋基部栗色，羽狀，裂片長圓形，有爪，長二至三釐，通常二裂為不等長之短裂片；葉體草質，主脈分叉，支脈簡單，每裂片有一縱，不顯明，半透明，子囊部位於主脈分叉之相反部位，形小而圓，寬約當裂片三分之一。

分布：1. 植物全形(自然大)；2. 一小葉片(放大二倍)；3. 二次小葉示其及脈紋子囊部(放大四倍)；4. 地下莖上之鱗片(放大二十四倍)。





## PLATE 42.

## POLYPODIUM MENGZEENSE Christ.

## POLYPODIACEAE

**POLYPODIUM MENGZEENSE** Christ in Bull. Boiss. 6:869 (1898); C. Chr. Ind. 544 (1906)  
Matthew in Journ. Linn. Soc. 39: 381 (1917).

*Polypodium asperum* Baker in Kew Bull. (1898) 231 (non *P. asperum* Schrad. 1818, nec Blume 1825).

*Polypodium argutum* Wall. var. *akazianum* Clarke in Ferns N. Ind. (1880).

*Rhizome* creeping, epigeaeous, flexuose, 4 mm. thick, clad in moderately dense deltoid-subulate dark brown clathrate scales; *stipes* 1.4-2 cm. apart, slender, naked, shining, pale stramineous, 9-12 cm. long; *fronds* lanceolate-oblong, simply pinnate, 26-35 cm. long, 12-15 cm. broad; *texture* almost membranaceous, green and glabrous on both surfaces, rachis slender and naked; *pinnae* 6-10 on each side under the long attenuate deeply inciso-crenate apex, subopposite, 2-2.5 cm. apart, lanceolate, acuminate, obscurely inciso-crenate, base obliquely truncate, somewhat cordate, dilatato-auricled on both sides, auricles rounded, the lower one more developed than the upper, the lower pinnae as long as the upper ones, horizontally patent, free, sessile, with the lower auricle usually imbricating the rachis, 6-8 cm. long, 8-14 mm. broad above the base, the upper ones more or less adnate, the uppermost one pair below the apex broadly adnate and decurrent some distance along the rachis, the terminal pinna the largest, 9-12 cm. long) and generally deeply inciso-crenate near the base; *veins* slender but distinct, costa raised on both surfaces, areolae large, uniseriate along both sides of the costa usually with 1 included soriferous veinlet, or very rarely 2, or forked at the apex, the other veinlets free falling some distance short from the margin, all with clavate apex; *sori* small, globose, superficial, sparsely disposed midway between the costa and margin.

*Distribution*: Yunnan.

A very distinct, elegant fern and evidently a close ally to *P. subauriculatum* Blume, from which differs in slender habit, smaller size, fewer and shorter pinnae of still thinner texture, uniseriate large areolae along the both sides of the midrib and a few sparse smaller and remote sori midway between the midrib and margin. It was discovered by A. Henry in Mengtze, Yunnan, on wooded rocks or on the trunk of trees. *P. asperum* Baker is conspecific with Christ's type.

Plate 42. Fig. 1. Habit sketch (natural size.) 2. A pinna, showing venation and sori (x 2). 3. A scale from the rhizome (x 75).

## 第四十二圖

## 蒙自水龍骨(水龍骨科)

## POLYPODIUM MENGZEENSE Christ

地下莖如筍生於地上，屆折，徑四釐，覆以珠密三角形刺繡暗褐色鱗片狀之鱗片；葉柄相距一四至二吋，細瘦，無鱗片，有光澤，淡紅褐色，長九至二十吋；葉體似針長圓形，一次羽狀，長二十六至三十五吋，寬十二至十五吋，幾為膜質，綠色，兩面光滑，葉軸稍瘦無鱗片，每個小葉六至十個，生於長尖且深缺刻圓曲之頂端小葉下，幾對生，相距二至二五吋，披針形，漸尖端，不顯著缺刻圓曲狀，基部斜截形，略成心臟形，兩個皆具擴大之耳，耳圓形，在下側者較在上側者稍發達，下部小葉與上部小葉長短相同，橫列開展，無柄，獨立，下側之耳常掩覆葉軸，長六至八吋，近基部寬八至十四釐，上部小葉多少附著，最近頂端之一對側生小葉基部附著甚固，向葉軸延長甚長；頂端小葉最大，長九至十二吋，近基部作深缺刻圓曲狀；脈紋甚顯而清晰，中肋兩面隆起，網孔頗大，中肋之兩側各有一行，包括一具子囊群之網脈，稀具兩條或近頂端處又分叉，其餘支脈遊離，支脈至近葉緣處而止，皆具顆肥頂端；子囊群形小而圓，生於表面，總散於中肋及葉緣之間。

分布：雲南。

此特殊美國之種與 *Polypodium subauriculatum* Blume 相近，但本種形小，細瘦，黃薄，小葉亦短而少，葉脈網孔大，單行排列，子囊群亦較小，在中肋與葉緣之間甚疏，此種最初為 A. Henry 發見於雲南，生於樹幹或林中巖石上，*Polypodium aspersum* Baker 與 Christ 氏之原型種相符合。

圖註 1. 植物全形(自然大) 2. 一小葉示其葉脈及子囊群(放大二倍) 3. 地下莖上之鱗片(放大七十六倍)。



## PLATE 43.

**POLYPODIUM OBLONGISORUM** C. Christensen

## POLYPODIACEAE

**POLYPODIUM OBLONGISORUM** C. Chr. Ind. 549 (1906); Matthew in Journ. Linn. Soc. 39:381 (1911).

*Polypodium subintegrum* Baker in Kew Bull. (1898) 231 (non 1877).

*Rhizome* epigeous, wide-creeping, clothed with broad lanceolate blackish membranaceous clathrate dense scales; *frond* 1-2 cm. apart, narrowly linear, coriaceous, 25-40 cm. long, 3-8 mm. broad at the middle, gradually attenuate towards the base into a short stipe (2-4 cm. long), apex longacuminate, green and glabrous above, the under side sparsely covered with minute peltate brown deciduous scales, margin obscurely repandulous, narrowly revolute; *veins* obscurely immersed except costa, which is prominent, particularly underneath; *sori* large, marginal, 1-2 cm. apart, subopposite or alternate, oblong, superficial, bullate, short oblong, 4 mm. long, prominently projecting beyond the margin of the frond when mature, in consequence of the free parts of the margin becoming revolute.

*Distribution*: Yunnan.

A very remarkable plant, first discovered by A. Henry in Man-mei, Yunnan, epiphytic on the trunk of forest trees, and easily distinguished by its relatively large bead-like sori projecting well beyond the margin of long linear frond. From *P. esophyllum* Diels to which the present species is closely allied, it differs in narrower, less revolute frond and the projecting marginal sori.

Plate 43. Fig. 1. Habit sketch (natural size.) 2. Scales from rhizome (x 30). 3. A portion of frond, showing venation (x 30).



## 第四十三圖

## 珠帶水龍骨 (水龍骨科)

POLYPODIUM OBLONGISORUM Christensen.

地下莖生於地上，匍匐甚廣，密覆以廣披針形幾黑色膜質繖孔狀之鱗片，葉體相離一至二粉，窄線形，革質，長二十五至四十粉，中部寬三至八個，漸向下窄縮，形成短柄（柄長二至四粉），長漸尖頭，上面綠色光澤，下面綠色幼小而形褐色脫落之鱗片，邊緣或不顯著波狀，反卷疏罕；葉脈通常皆隱沒，中肋則顯明，下面尤甚，子囊群寬大，生於邊緣，相離一二粉，幾對生或互生，長圓形，生於表面，泡囊狀，長圓筒，成熟時突出葉緣，殊顯明，因而無子囊群之部分乃成反卷狀。

分布：雲南。

本種最初為 A. Henry 在雲南發見，生於樹幹上，其大形子囊群突出於長線形葉體之外，最易在野外識別也。本種習性與 *Polypodium filophyllum* Diels 最相近，但葉體較窄，反卷較少，子囊群突出葉緣之外。

圖註：1. 植物全體（自然大），2. 地下莖之鱗片（放大三十倍），3. 葉體之一部示其葉脈（放大三十倍）。



## PLATE 44.

## POLYPODIUM TRIGLOSSUM Baker.

## POLYPODIACEAE

**POLYPODIUM TRIGLOSSUM** Baker in Kew Bull. (1898) 232; C. Chr. Ind. 571 (1906);  
Matthew in Journ. Linn. Soc. 39: 383 (1911).

*Selliguea triphylla* Christ in Bull. Boiss. 6: 878 (1899).

*Rhizome* creeping, epigeous, clothed with small lanceolate, membranaceous, ferruginous dense scales; *stipes* subnaked, slender, brown, 30-45 cm. long; *frond* deltoid, 30-40 cm. long, trisect into 3 ascending lanceolate segments, the middle one the largest, to 40 cm. long, the two lateral ones somewhat shorter, 4-5.5 cm. broad, gradually tapering towards both ends, sinuses rounded, cleft down to 2-3 cm. from the base of the frond, margin entire or obscurely undulate; *texture* chartaceous, green and glabrous above, pale and sparsely clothed near the costa beneath with adpressed membranaceous dark-brown peltate or ovate-cuspidate scales; *venations* prominent, the lateral veins parallel, erect-patent, extending almost to the margin, intermediate veinlets anastomosing copiously into small hexagonal areolae with free included veinlets; *sori* small, oblong, superficial, scaly, uniseriate or tending to be biseriate along the costa between main veins.

Distribution: Yunnan.

The discovery of this beautiful species was indebted to Dr. A. Henry, who found it in the mountain forest in the district of Mile, Yunnan, and so far not yet known elsewhere. It is nearest to the large trifid forms of *P. pteropus* Blume, differs in larger sori, the presence of ovate-lanceolate dentate-ciliate dark brown scales on the under surface, the strongly dentate and conspicuously clathrate peltate scales in the sori and by the veinlets not forming a distinct series of large areolae. It is perhaps most interesting to note that this species is distinct from most of the members in § *Selliguea* in rather very short sori, which vary from oblong to almost globular towards the apex of the segments; a few short linear ones are, however, occasionally present near the basal part and very close and parallel or subparallel to the costae. In this respect it is not perhaps without reason to consider it as a linking species between § *Selliguea* and § *Pleopeltis*, which generally has sori not more than three times as long as broad.

Plate 44. Fig. 1. Habôt sketch (natural size). 2. A portion of pinna, showing venation and sori (x 2½). 3. Scales from rhizome (x 30).



PDG

## 第四十四圖

## 三葉水龍骨（水龍骨科）

POLYPODIUM TRIGLOSSUM Baker.

地下莖匍匐，生於地上，覆以小披針形或腎臟形褐色之鱗片；葉柄幾無鱗片，細瘦，褐色，長三十至四十五粉；葉體三角形，長三十至四十粉，三裂或三個向上披針形之裂片，中央裂片最大，長達四十粉，兩側者略短，寬四至五·五粉，兩端漸窄縮，中間凹處圓形，削入至距葉基二三粉處，全緣或不起波紋狀；葉體紙質，上面平滑，綠色，下面淡色，中肋緣被以堅硬質黃褐色盾形或卵圓形刺狀之鱗片；脈紋甚顯明，個脈平行直伸向外開張，幾達葉緣，中肋緣緣緣成小六角形之網孔，包有內伸過細之網脈；子囊群形小，長圓形，生於表面，有鱗片，一列或近中肋處成二列。

分佈：雲南。

本種最初為 A. Henry 博士發見於雲南山地森林中，但至今尚無採之於他地者；本種習性與 *Polypodium pteropus* Blume 之壯大者相近，但異處則為殊大之子囊群，葉下面生長之卑圓披針形，其纖毛附褐色之鱗片，及子囊群中間深處芽狀，顯然成齒狀或紋狀之鱗片；本種之子囊群比別屬他種所有者皆窄，在基部者為長圓形，在頂端乃成幾圓形，短線形者亦幾或有之，多在基部近中肋處，與中肋幾成平行，以是本種當視為 *Sellignea* 及 *Pleopeltis* 兩系之中間種。

圖註：1. 植物全形（自然大）。2. 小葉之一部示葉脈及孢子囊群（放大二倍半）。3. 地下莖之上鱗片（放大三十倍）。



## PLATE 45-

## POLYPODIUM ELLIPTICUM Thunberg.

## POLYPODIACEAE

**POLYPODIUM ELLIPTICUM** Thunb., Fl. Jap. 335 (1784); Christ, Farnkraut, Erde 107; Diels in Nat. Pfl. Fam. 1. 4. 318; v. A. v. R., Malay. Ferns 677 (1908).

*Gymnogramme elliptica* Baker in Syn. Fil. 388.

*Selliguea elliptica* Bedd., Handb. 392

*Gymnogramme decurrens* Hook., Spec. Fil. 5: 161

*Selliguea decurrens* Bedd., Ferns Brit. Ind. t. 150.

*Grammitis decurrens* Wall., HK. et Grev. in Ic. Fil. t. 6.

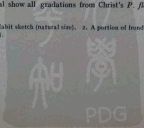
*Gymnogramme pentaphylla* Baker in Kew Bull. (1868) 233.

*Rhizome* thick, woody, wide-creeping, blackish, clad in dense lanceolate acuminate, blackish, clathrate more or less adpressed scales; *stipes* scattered, 20-40 cm. long, firm, erect, naked, pale or straw-coloured; *fronds* 20-50 cm. long, 13-25 cm. or more broad, oblong-ovate, pinnatifid down to the rachis into 4-10 rarely more pinnae on each side under the terminal segment similar to the lateral ones; pinnae linear-lanceolate or lanceolate-oblong, acuminate, 1-3 cm. broad, 5-20 cm. long, horizontally patent, the lower ones scarcely reduced, mostly connected by decurrent oblique bases, which form a wing to the rachis, margin usually entire, sometimes obscurely undulate or repand; *texture* herbaceous, quite glabrous; *main veins* slender, not distinct to the edge, intermediate veinlets anastomosing copiously with a row of large costal areolae with included bifid veinlets, all jointed near the margin; *sovi* linear, oblique, almost reaching the midrib, but not the margin.

*Distribution*: Tropical Asia; China: Kwantung, Kwangsi, Yunnan, Szechwan, Hupeh, Kiangsi, Anwei, Chekiang, Kiangsu, Fukien, also in Korea and Japan.

A Common but most variable fern in South and Central China. It often varies from 15-80 cm. tall with 2-10 lateral pinnae 5-25 cm. long, 0.8-4 cm. broad. In extreme forms, the pinnae are only about 5 mm. broad. *P. flexilobium* Christ and *P. fawcii* (Christ) Nakai are better regarded as reduced forms of the present species, as the ample materials at my disposal show all gradations from Christ's *P. flexilobium* upward.—R. C. C.

Plate 45. Fig. 1. Habit sketch (natural size). 2. A portion of frond, showing venation (x 2). 3. Scales from rhizome (x 16).



## 第四十五圖

## 橢圓水龍骨（水龍骨科）

**POLYPODIUM ELLIPTICUM** Thunberg.

地下莖粗壯，木質，匍匐甚廣，幾黑色。密覆以披針形漸尖端幾黑色齒孔狀貼附之鱗片，葉柄疏生長二十至四十粉，堅實。直立無鱗片，淡黃或紅棕色，葉體長二十至二十五粉，寬十三至二十五粉，或略寬，長卵圓形，羽狀深裂至中肋，每個約有小葉四至十個，頂端之小葉與兩側相同；小葉細披針形或披針長圓形，漸尖端，寬一至三粉，長五至二十粉，平行開張，近基部者形體極短小，多數以斜向下延之基部相連，形成葉軸之翼，小葉全緣，或有不顯著波狀或鋸波狀；葉面草質，疎光滑，主脈細，至近葉端不顯明，中間細脈羽狀成一排大形網孔，中含支脈皆雙叉狀，在近邊緣處相連，子囊單線形，斜生，長達中肋側距葉緣稍較遠。

分布：◎熱帶及中國：廣東，廣西，雲南，四川，湖北，安徽，浙江，江蘇，福建；高麗及日本亦有之。

本種在中國南部及中部分布甚廣，形體複雜之變異亦多，高者達八十粉，矮者僅十五粉，側生小葉自二十個，長五至二十五粉，寬乃由八粉至四粉，*Polypodium flexibiliam* Christ 及 *Polypodium fauriei* (Christ) Nakai。當認爲本種之形態相異者，此由作者比較多數標本而知之。——仁昌。





## PLATE 46.

**POLYPODIUM LEVEILLEI** (Christ) C. Christensen

## POLYPODIACEAE

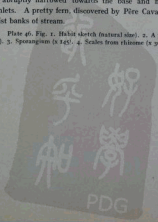
**POLYPODIUM LEVEILLEI** (Christ) C. Chr. Ind. Suppl. 60 (1906-13).*Selliguea leveillei* Christ in Bull. Geogr. Bot. Mass (1906) 236.

*Rhizome* wide-creeping, 3 mm. across, black, clothed with black sparse rigid setaceous scales; *stipe* stramineous, solitary, 1-3 cm. apart, slender, sharply angular below, 10-15 cm. long, with the base of frond gradually decurrent along it into a long narrow wing on each side; *frond* about 20-30 cm. long, 2.2-4 cm. broad, or broader at the middle, narrowly lanceolate, acuminate, suddenly narrowed near the base and long decurrent along the stipe, margin crispato-undulate and obscurely crenate; *costa* prominent on both sides, stramineous, lateral veins obliquely patent, extending to the margin at acute angles, straight or subflexuose, about 30 on each side, the middle ones  $\frac{1}{2}$  cm. apart, very slender, areolae between transverse veins about 5, oblong-rectangular with simple clavate retrorsed included veinlets; *sori* running along the lateral veins from the costa to the margin, very slender, brown *texture* flaccid, herbaceous, light green, and glabrous on both surfaces.

Distribution: Yunnan, Kweichow, Kwangsi.

A close ally to *P. serripetiolis* (HK.) Mett. which, however, has much narrower frond, not abruptly narrowed towards the base and numerous copiously forked, included veinlets. A pretty fern, discovered by Père Cavalieri in Kweichow, 1904, growing on moist banks of stream.

Plate 46. Fig. 1. Habit sketch (natural size). 2. A portion of frond, showing venation and sori ( $\times 2$ ). 3. Sporangium ( $\times 145$ ). 4. Scales from rhizome ( $\times 30$ ).



## 第四十六圖

## 萊氏水龍骨 (水龍骨科)

**POLYPODIUM LEVEILLEI** (Christ) C. Christensen.

地下莖短而甚廣，寬三釐，黑色，密覆以黑色，絲生，堅硬，剛毛狀之鱗片；葉柄暗褐色，偶生，相距一至三節，細瘦，下面有疏，長十至十五節，葉柄基部漸向下延展成窄長之翼；葉片長二十至三十節，中部寬二至四釐，或稍寬，窄披針形，漸尖頭，基部突然窄縮，形成葉柄之翼，邊緣拳皺，葉稀或重疏狀，中肋兩面皆明顯棕色，側脈斜向剛強，伸至葉緣與之成銳角，直出或反彎屈，每側有三十餘，中部者約相距半節，甚細，橫脈脈中斷之網孔約五個，長圓形，包括一能單棒形內卷之細脈，子囊羣生側脈上，從中部至葉緣，甚細，褐色；葉體草質，柔軟，淡綠色，兩面光滑。

分布：雲南，貴州，廣西。

本種與 *Polypodium wightii* (HK.) Mett. 相近，但後者之葉比本種窄瘦，下部亦不縮成葉柄之翼狀體，且細脈分支較多，此種最初為 Péro Cavalerie 於 1904 年採自貴州之深野。

圖註：1. 植物全形 (自然大)；2. 葉體之一部示其脈紋及孢子囊羣 (放大二倍)；3. 孢子囊 (放大四十五倍)；4. 地下莖上之鱗片 (放大三十倍)。



## PLATE 47.

**LOXOGRAMME CHINENSIS** Ching.

## POLYPODIACEAE

**LOXOGRAMME CHINENSIS** Ching in Sinesia 1: 13 (1929).

*Rhizome* wide-creeping, 2-3 mm. thick, scales dark brown, dense, adpressed or subpatent, broad at base, gradually attenuate to a long subulate apex, distinctly clathrate; *stipes* none or very short; *frond* subapproximate, pale green, glabrous throughout, somewhat dimorphic, 5-14 cm. long, to 7 mm. broad in the broadest part, the sterile ones broader (9 mm.) and generally shorter, broadest in the upper one-third, slowly narrowed downward to the base or a short stipe, about 2 mm. broad near the base, apex acute to blunt, margin entire, revolute, somewhat undulate; *midrib* slender, raised above, flattened or slightly grooved below, veins and veinlets hidden; *texture* coriaceous, but flaccid; *sori* oblique to subparallel, more often tending to be confluent, not costal, but well extending to the margin, 3-8 mm. long, confined to the upper one-third portion of the frond.

Distribution: Kwangsi.

Plate 47. 1. Habit sketch (natural size). 2. A portion of frond, showing venation and sori (x 4). 3. Scales from rhizome (x 24).



## 第四十七圖

## 華劍蕨 (水龍骨科)

## LOXOGRAMME CHINENSIS Ching.

地下莖匍匐甚廣，粗二三釐，鱗片暗褐色，密生，卵形或匙形，基部甚寬，漸向頂端窄縮成長尾狀，顯明孔狀；葉柄細或甚短；葉體幾全緣，淡綠色，光滑，形態約分二種，長五至十四釐，最寬部分寬達七釐，無子囊葉更略寬（達九釐）而較短，自上部三分之一處最寬，漸向下窄縮形成短柄，基部寬二釐，頂端尖形或鈍形，全緣，反卷，幾微成波狀；中脈細，上面隆起，下面平或微有槽，側脈及支脈不顯明；葉體革質，柔軟；子囊葉斜生或接近平行，通常傾向於合生，不生於中肋上，但接連葉緣，長三至八釐，僅限於葉體上部三分之一。

分布：廣西。

圖註：1. 植物全形（自然大），2. 葉體之一部示葉脈及子囊葉（放大四倍），3. 地下莖之鱗片（放大二十四倍）。



## PLATE 48.

## NEOCHEIROPTERIS PALMATOPEDATA (Baker) Christ

## POLYPODIACEAE

**NEOCHEIROPTERIS PALMATOPEDATA** (Baker) Christ in Bull. Soc. Bot. Fr. 52; Mem. I. 21 (1905) C. Chr. Ind. 432 (1906).

*Polypodium palmatopedatum* Baker in Kew Bull. (1895) 232.

*Cheiropteris henryi* Christ in Bull. Boiss. 6; 876 (1898); Diels in Nat. Pil. Fam. I. 4. 289, fig. 68 (1902).

*Cheiropteris palmatopedata* Christ in Bull. Boiss. 7; 21. I. I (1899).

*Rhizome* epigenous, wide-creeping, about 7 mm. thick, clothed in large lanceolate, cuspidate membranaceous sordid brown imbricate ciliate dense scales; *stipes* distant, 30-45 cm. long, stiff, naked throughout, stramineous, teret underneath, deeply 3-striate above; *frond* flabellate-quadrate pedate-palmatifid, base cuneate, 25-30 cm. long and broad or broader; *texture* chartaceous, green and glabrous above, sparsely clothed with minute brown scales beneath; segments 10-20 cm. long, upright, lanceolate, slightly imbricate, the middle ones 17-20 cm. long, 2.5-3 cm. broad, the lateral ones much smaller, margin entire; *costa* prominently raised below and less so above, veins anastomosing into small hexagonal areolae; *sori* superficial, usually confined to the lower half of the segments, the outermost segments sterile or at best sparsely soriferous, close to the costa, the lower ones oblong or linear-oblong, the upper ones globose.

*Distribution*: Yunnan, Szechwan.

This unique fern was first discovered by Père Delavay in the mountains in Ta-ping-tze, Yunnan, September 4th, 1883, and by A. Henry at Mile in the same province about fifteen years later, but it was the latter's specimens which received the first attention from Baker, who called it *Polypodium palmatopedatum*, while the former's specimen remained unknown in the Muséum d'histoire naturelle de Paris until about 1905 when it was identified by Christ, who changed his *Cheiropteris palmatopedata* to the present name<sup>1</sup>. This fern must be considered as one of the most outstanding additions to our Chinese flora, discovered by early European botanical explorer in this country. As already quite thoroughly discussed by Christ<sup>2</sup>, the present fern is entitled a systematic place between *Dipteris* and *Polypodium* § *Pleopeltis*, both of which are represented in Yunnan by their respective members growing side by side with our species there. However, the plant differs from either of its relatives in large elongated costal sori and, particularly, in the broad and incrassate receptacle, formed by the dilatation by the dorsal part of the costal veins, on which the sorus is borne.

Plate 48. Fig. 1. Habit sketch (natural size). 2. A portion of segment, showing venation and sori (x 3). 3. Sporangium (x 40). 4. Scales from rhizome (x 40).

1. *Cheiropteris* was preoccupied in Kuhn, Gen. Palaeontologische.

2. Bull. Boiss. 7; 21. 2. 1899.

## 第四十八圖

## 掌狀扇蕨 (水龍骨科)

**NEOCHEIROPTERIS PALMATOPEDATA** (Baker) Christ.

地下莖生地面上，節短甚廣，寬約七厘米，密被鱗片，鱗片大，披針形，有尾狀尖端，薄膜質，暗褐色，覆瓦狀排列，有纖毛；葉柄相距甚遠，長三十至四十五公分，堅硬，全體裸露，暗褐色，基部管狀，上部具三條深紋，葉柄方形扁狀，二裂掌狀分裂，基部楔形，長闊各二十五至三十公分之譜，或略寬，紙質綠色，上面平滑，下面具疏散之短小褐色之鱗片，葉片長十至十二公分，長披針形，略相掩覆，中央之裂片長十七至二十公分，寬二公分至三公分，兩個之裂片則較小，全緣，中肋甚顯明而略隆起，下部尤甚；脈絡交錯成六角形之網孔；子囊群生於表面，常集於葉裂片之下部，外部裂片往往無子囊群或略有數枚生於中肋附近；子囊群在下部者形長方或長線狀，在上部者圓形。

分佈：雲南，四川。

本種在 1883 年已由 Pils Delavay 採自雲南，但其後十五年 A. Henry 氏又在該省採得，始為植物學者注意，Baker 氏定為新種，名曰 *Polypodium palmatopedata*，至 1905 年，Christ 氏發見前者之標本於巴黎自然博物館始定今名，本種性質介乎 *Dipteris* 及 *Polypodium* 之 *Pleopeltis* 系之間，此三者皆產雲南，相鄰而生，但本種生於中肋兩個之子囊群，及其寬而堅實向背面脈絡分置而成之子囊托，則為最顯著之特性，甚與其他區別者也。

圖註：1. 植物全體(自然大) 2. 葉片一節示其脈絡與子囊群(放大三倍) 3. 孢子囊(放大九十倍)  
4. 地下莖之鱗片(放大四十倍)。

## PLATE 49.

## POLYPODIACEAE

**ELAPHOGLOSSUM AUSTRU-SINICUM** Matthew et Christ

**ELAPHOGLOSSUM AUSTRU-SINICUM** Matthew et Christ in Lecomte Not. Syst. 1: 57 (1909);  
C. Chr. Ind. Suppl. 41 (1906-13); Matthew in Journ. Linn. Soc. 39: 368 (1911).

*Asplenium austro-sinicum* Titcher in Fl. Kwant. and Hongk. 355 (1912).

*Elaphoglossum parvulum* Copel. in Phil. Journ. Sci. Bot. C II:40 (1916).

*Rhizome* short, thick, densely rooted; leaves 4-6 together, *stipes* tufted, thick, stout, 3 mm. across, greenish, deeply sulcate above, terete below, 3-6 cm. long, copiously clothed in broad, ovate, membranaceous, entire, scarious light brown, obtuse scales 5 mm. long; sterile *frond* 15-30 cm. long, 3-3.5 cm. broad at the middle, cultrato-lanceolate, from the middle upward gradually acuminate in an obtuse apex, long decurrent towards the base, margin entire, thickened, surfaces, particularly the under, densely clothed with small blackish lacerato-dilated adpressed scales; *costa* very broad, plane, 2-3 mm. broad, pale green; lateral *neuis* very oblique, inconspicuous, 2 mm. apart, extending to the thickened margin, mostly simple or forked; texture carnosu-coriaceous, thick, light green above, pale green beneath; fertile fronds somewhat narrower, much shorter than the sterile, *stipes* 7-10 cm. long; *sovi* dark brown, covering the entire under surface except the midrib and a narrow free margin.

Distribution: Kwangtung, Kwangsi, Fukien.

A very distinct species, characterized by a broad flat midrib, broad thickened margin, thick carnosu-subcoriaceous texture and dense coating of lacerate-dilated brown scales underneath. It was first found by Dr. Matthew in Tai-mo-shan, New Territory, opposite Hongkong, in 1907, on shaded granite cliff, and of late has been reported from several localities from Kwangsi. The type specimen of the present species consisting of 3-4 robust sterile leaves represents rather an extreme form.

*Elaphoglossum parvulum* Copel. based upon Dunn's specimen, No. 3821, from Central Fukien (1905), is not specifically different from the type except of smaller size with somewhat broader leaves, only about half as long as the type. All the specimens from Kwangsi I have examined are mostly approaching the type in dimension.—R. C. C.

Plate 49. Fig. 1. Habit sketch (natural size). 2. Venation (x 2). 3 Two sporangia (x 106). 4. Scales from the base of stipe (x 10).

## 第四十九圖

## 華南舌蕨 (水龍骨科)

*ELAPHOGLOSSUM AUSTRO-SINICUM* Mathew et Christ.

地下莖短，粗壯，有多根；葉柄四至六個簇生，葉柄粗壯，叢生，高達三碼，淡綠色，上面有深槽下面圓形，長三至六粉，表面以寬卵圓形，薄銳葉，全緣，淡褐色，鈍頭之鱗片，鱗片長約五碼；無子囊葉長十五至三十粉，中間寬三至三五粉，刀鋒披針形，自中部向上窄縮成漸尖而鈍頭之頂端，基部向下延長，葉緣完全，加厚，密覆以幾黑色碎裂狀硬膜用之小鱗片，下面尤甚；中肋甚強而平，寬二三碼，淡綠色；側脈甚斜，不顯明，相距二碼，直達葉緣，通常多單枝，亦有分叉者；葉體肥厚革質，上面淺綠色，下面淡綠色；有子囊葉略窄而短，葉柄長七至十粉；子囊群暗褐色，密生於葉體下面，僅中肋附近及緣內無之。

分布：廣東，廣西，福建。

本種為一特殊之屬，其特徵在於莖之中肋，廣闊之厚邊緣及其肥厚革質之葉體，並下面密生之碎裂褐色鱗片。此種最初在 1907 年為 Mathew 採自香港附近地質之巖石上，近年曾在廣西發見數次其標式標本且三四相厚無子囊葉，實為本種中之特殊標本。

按 Dunn 採自福建中部之標本 3821 號之 *Elaphoglossum parvulum* Copel. 實與本種無別，但形體略小葉略寬耳，但作者所鑑定之多數廣西標本皆與 Mathew 氏之標式大小相同。—仁昌

圖註：1. 植物全形（自然大），2. 兩個無子囊（放大一百〇六倍），3. 葉柄基部之鱗片（放大十倍）。



## PLATE 50.

## CHEIROPLEURIA BICUSPIS (Bl.) Presl

## POLYPODIACEAE

**CHEIROPLEURIA BICUSPIS** (Bl.) Presl, Epim. 189 (1839); Christ, Farnkraut. Erde 128, fig. 360; Diels in Nat. Pfl. Fam. 1. 4. 336, fig. 175; C. Chr. Ind. 181 (1905).

*Polypodium bicuspe* Bl., Enum. 125 (1826), Fl. Jav. Fil. t. 78 B.

*Anapausia bicuspis* Moore, Ind. XXI (1857).

*Acrostichum bicuspe* HK., Sp. Fil. 5: 271, Syn. Fil. 421.

*Gymnopteris vespertilia* HK., in Lond. Journ. Bot. 5: 193, t. 7-8 (1846).

*Cheiropleuria vespertilia* Presl, Epim. 190 (1849).

*Rhizome* woody, thick as man's small finger, short-creeping, densely clothed with yellowish silky hairs; *stipes* several together, those of barren frond 30 cm. or more long terete below, broadly grooved above, dark stramineous, shining; barren *frond* 10-15 cm. long and a little less broad in the entire portion, ovate, rounded at the base, the upper part consisting of 2 broad divaricated deltoid acuminate lobes with a broad rounded sinus between, margin entire; *texture* thick coriaceous, shining green above, pale below, glabrous on both surfaces; main *veins* palmate, radiating from the apex of the stipe to the upper edge, with copious areolae between them; fertile fronds 15-25 cm. long, 1-1.2 cm. broad, ligulate lanceolate, tapering on both ends, simple, with 3 prominent ribs; *sovi* dark brown, densely covering the whole under surface except the midrib and a very narrow free margin, the stipe 45 cm. or longer.

*Distribution*: Java, Formosa, Liu-kiu Isles, Philippines, Sumatra, Japan, China: Kwangsi.

It is interesting to note here that the genus *Cheiropleuria* was not known from China prior to the Academia Sinica Kwangsi Expedition, 1928, when it was discovered by me for the first time in N. Kwangsi on the border of Kweichow, in the chink of rather exposed limestone cliff. A very rare fern in the region. Our Chinese plant matches Blume's type very well in having bilobed frond. The var. *integrifolia* Eat. with simple entire ovate-acute or short-acuminate barren leaves, common in Formosa, is not yet known in this country.—R.C.C.

Plate 50. Fig. 1. Habit sketch (natural size). 2. A portion of sterile frond, showing venation (x 6). 3. A portion of cross section of fertile frond, showing disposition of sori and paraphyses (x 25). 4. Hair from rhizome (x 25). 5. A sporangium (x 100). 6. Paraphyses (x 40).

## 第五十圖

## 二尖燕尾蕨 (水龍骨科)

*CHEIROPLEURA BICUSPIS* (BL.) Presl

地下莖木質，與如手指，包圍節部，表面具幾黃色有光澤之毛；葉柄數個簇生，無子囊葉之柄長三十餘，或尤長，下面圓形，上面具寬緣，暗紅棕色，有光澤；無子囊葉體長十至十五餘，精窄，卵圓形，基部圓形，葉上部成兩廣三角形漸尖頭之裂片，兩端寬圓形，全緣；葉體厚革質，上面綠色有光澤，下面稍淡兩面皆無毛；主脈掌狀，由葉柄頂端向葉緣輻射，其間有多列網孔，有子囊葉長十五至二十五餘，寬一至一二餘，舌狀披針形，兩端平截，發厚，具三條主脈；子囊葉暗褐色，密布於葉體下面，僅在中部附近及葉緣內留一窄隙，葉柄長四十五餘。

分布：爪哇，臺灣，琉球，菲律賓，蘇門答拉，日本；中國：廣西。

*Cheiropleura* 一屬在中國發見實以 1928 年中央研究院廣西採集區為始，本種由作者採自廣西北部與貴州交界之石灰巖上，此次之標本皆具兩裂片之葉體與 Blume 氏之標本無不符合，但臺灣之變種 *integrifolia* Eat. 之具全葉者尚未見之於中國也。——仁昌

圖註：1. 植物全形（自然大）。2. 無子囊葉之葉體之一部表示葉脈（放大六倍）。3. 有子囊葉之葉體之橫切面表示子囊葉與網片之位置（放大二十五倍）。4. 地下莖上之鱗片（放大二十五倍）。5. 子囊葉（放大一百倍）。6. 鱗片（放大四十倍）。

