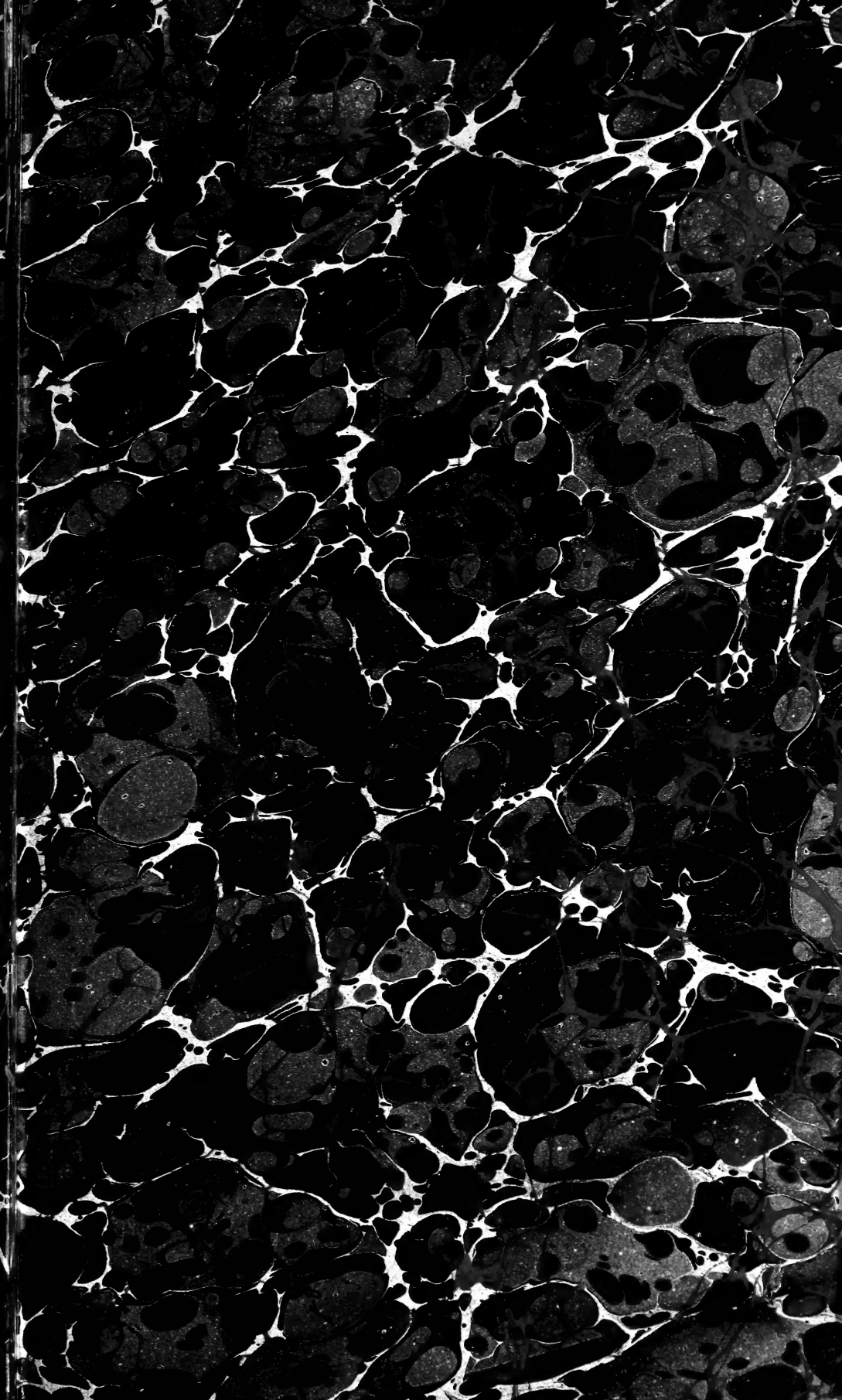




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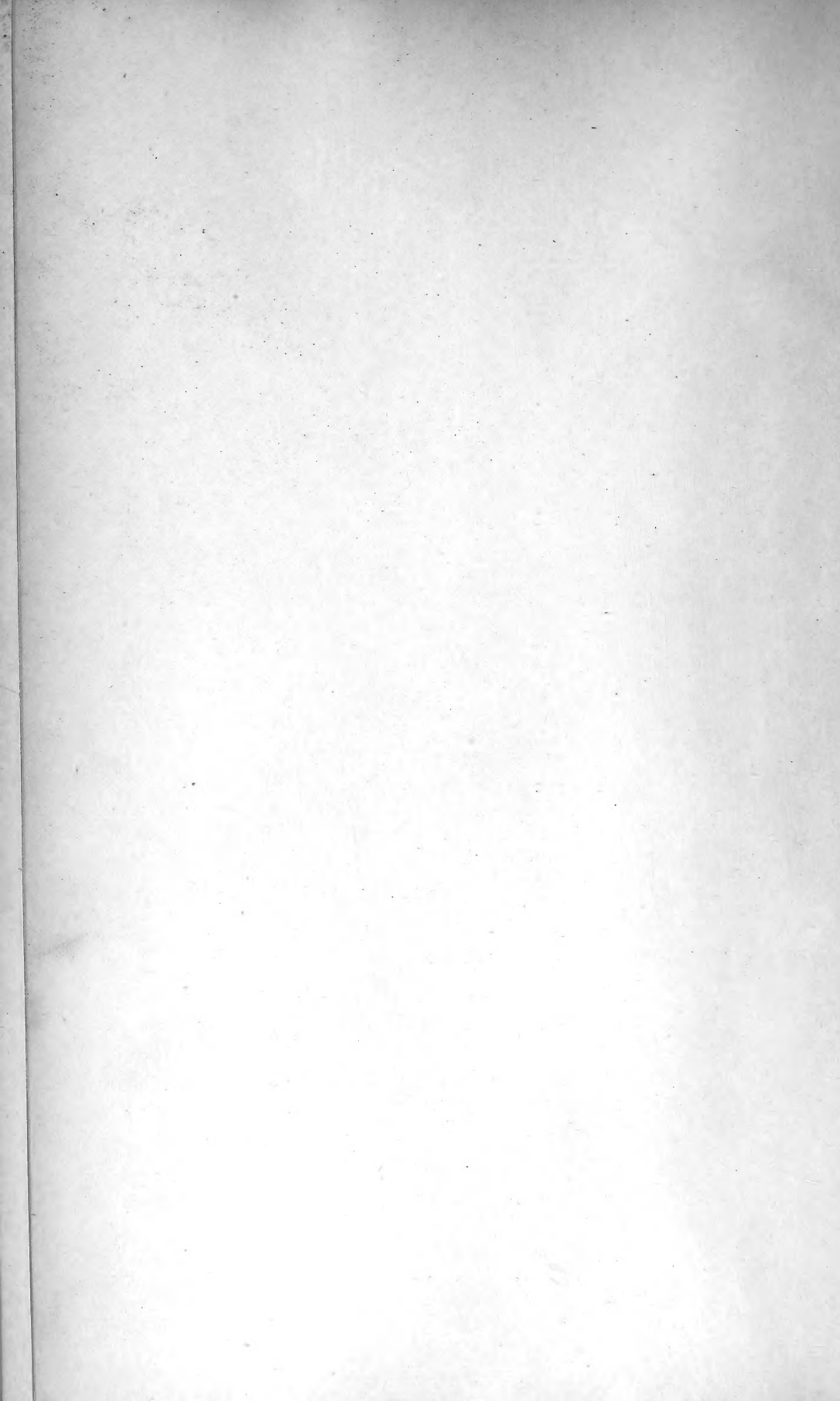
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*John Sonnell Smith*

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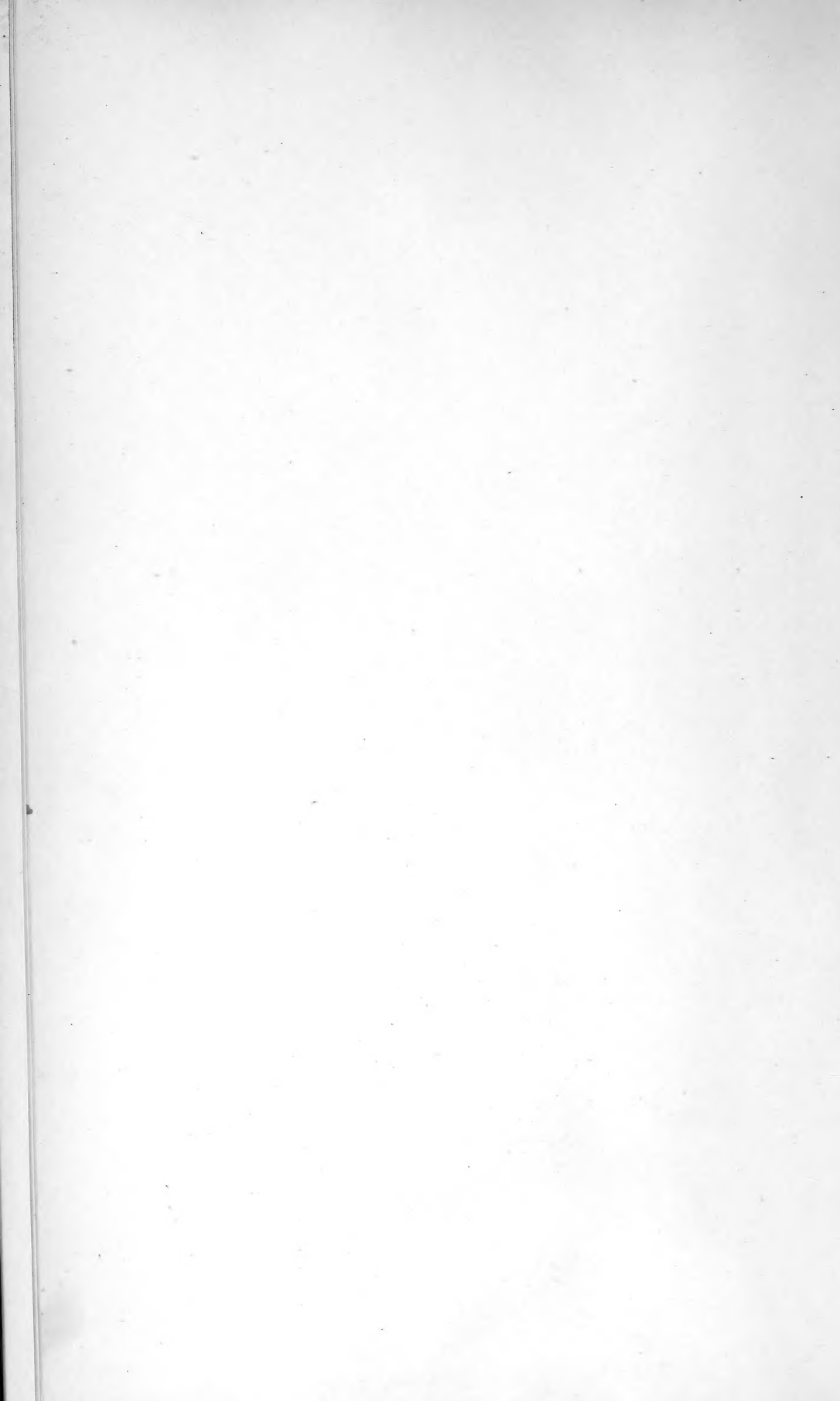




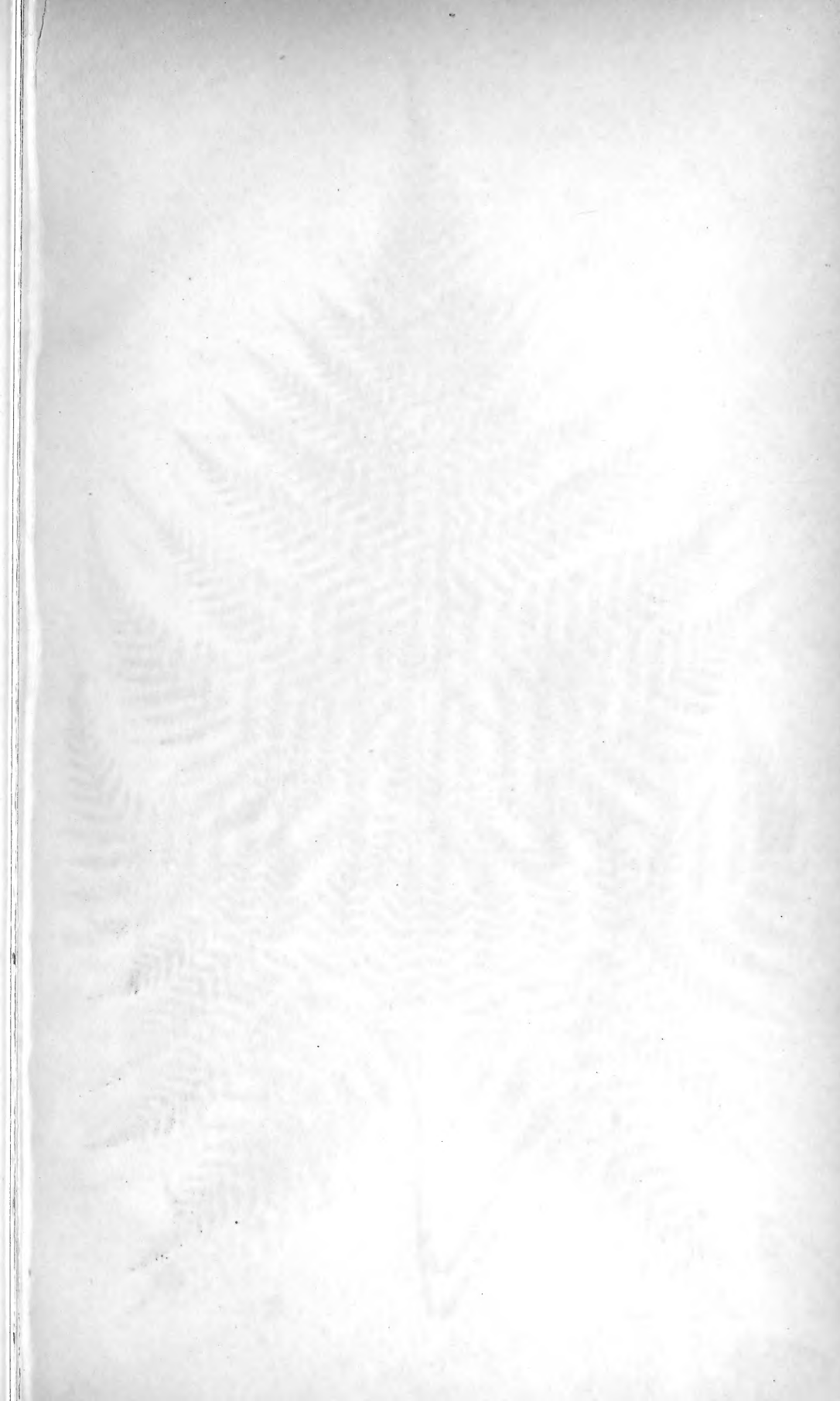


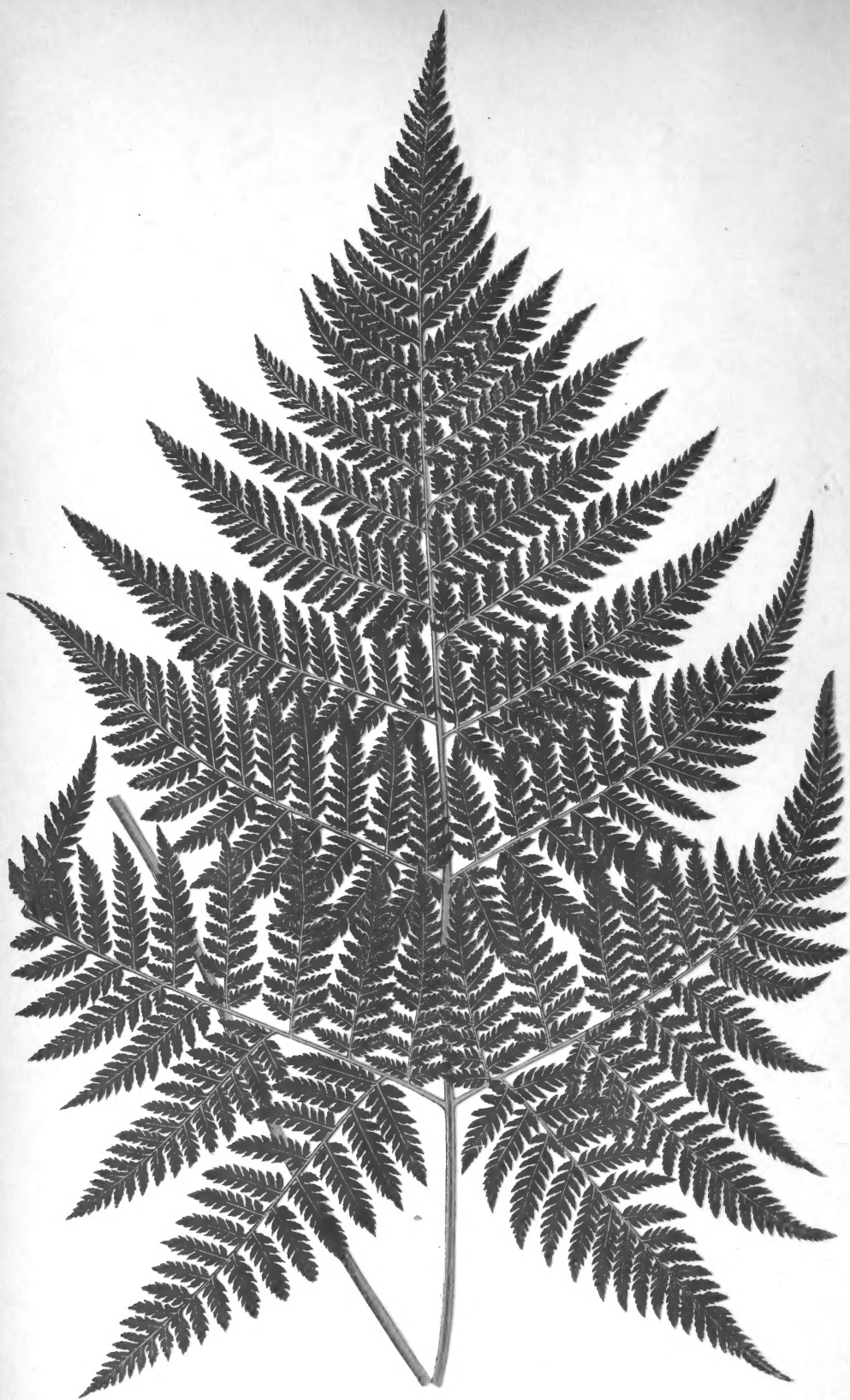


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ASPIDIUM RECEDENS.

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# FERNS:

BRITISH AND EXOTIC.

VOLUME VII.

CONTAINING

ASPIDIUM, IN CONCLUSION.  
HYPODERRIS.  
MESOCHLÆNA.  
OLEANDRA.  
NEPHROLEPIS.  
WOODSIA.  
CYSTOPTERIS.  
HEMIONITIS.  
OLFERSIA.  
HYMENODIUM.  
ACROSTICHUM.  
POLYBOTRYA.  
PLATYCERIUM.  
OPHIOGLOSSUM.  
BOTRYCHIUM.

BY

E. J. LOWE, ESQ., F.R.A.S., F.G.S., F.L.S., F.Z.S., M.B.M.S.,

Hon. Mem. Dublin Nat. Hist. Soc., Mem. Geolog. Soc. Edinb.  
Corr. Mem. Lyceum Nat. Hist. New York, Corr. Mem. Manchester Lit. and Phil. Soc., etc.

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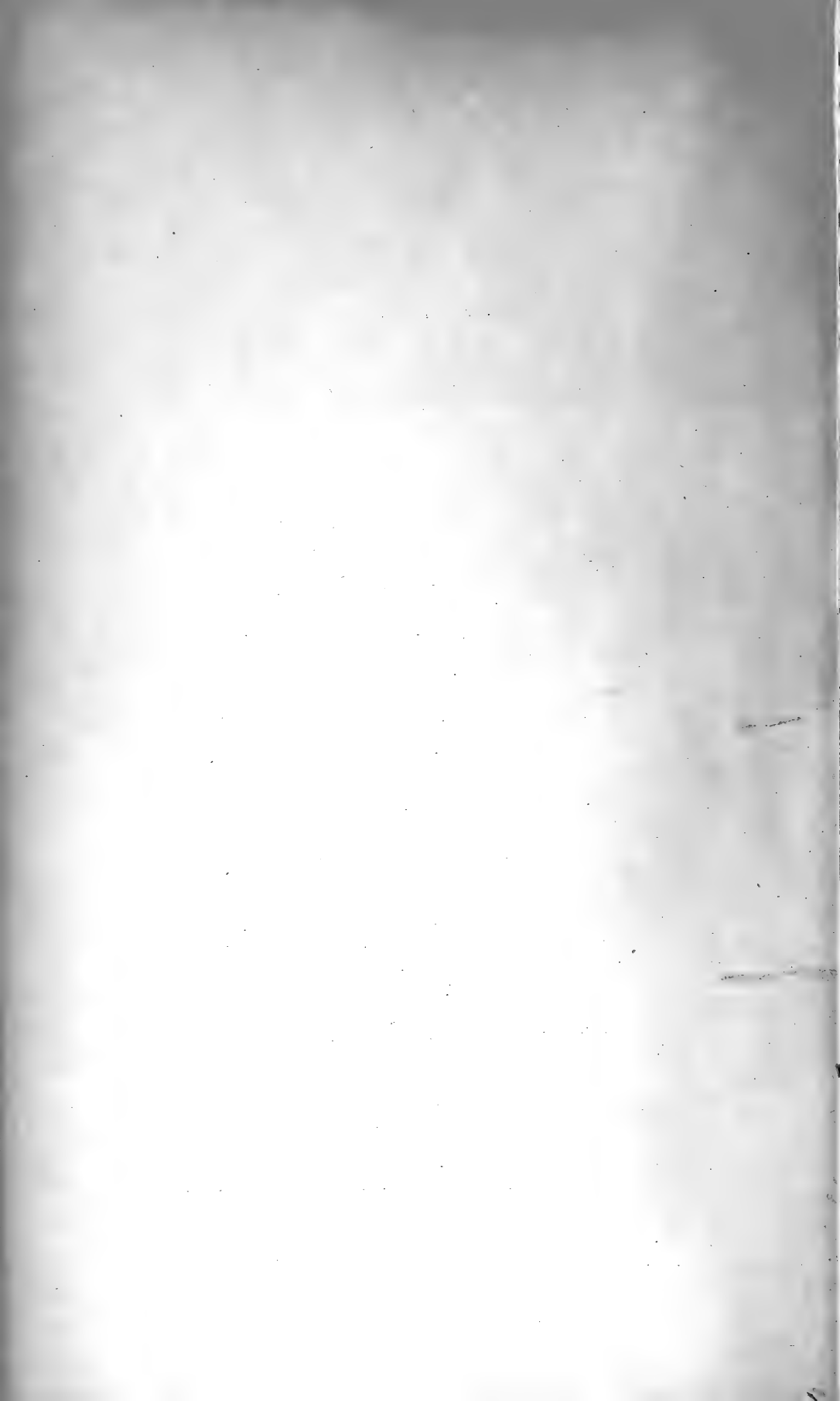
LONDON:  
GROOMBRIDGE AND SONS, 5, PATERNOSTER ROW.  
M DCCC LIX.

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## ERRATA.

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Page 3, for *Bathium repandum*, read *Bathmium repandum*.

Pages 24 and 30, for *Gueinzius*, read *Guienzius*.

Page 46, *Nephrolepis obtusifolium* is evidently a mistake in Presl's

Work for *N. obtusifolia*.

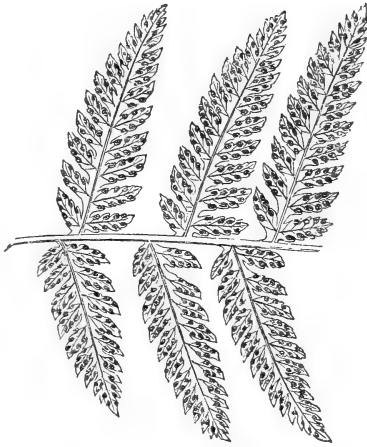
Page 46, for *N. devallioides*, read *davallioides*.

Page 106, for *Anapausia nicotanaefolia*, read *Anapausia nicotianaeefolia*.





FERN S;  
BRITISH AND EXOTIC.



Portion of a pinna of mature Frond—under side.

ASPIDIUM RECEDENS.

LOWE.

PLATE I. VOL. VII.

*Lastrea recedens*,  
*Polypodium recedens*,  
*Lastrea elegans*,

J. SMITH.  
J. SMITH.  
MOORE AND HOULSTON.

*Aspidium*—The Shield Fern.

*Recedens*—Receding.

VOL. VII.

B

## IN THE SECTION LASTREA OF AUTHORS.

THIS handsome rare Fern is only to be found in the best collections.

Introduced into the Royal Gardens, Kew, by Dr. Gardner, about the year 1845.

An evergreen stove species.

Native of Ceylon and the Philippine Islands.

The fronds are deltoid, glandulose, densely pubescent, tripinnate, and somewhat erect in habit; the pinnules oblong-linear and acute, the base decurrent, profoundly pinnatifid, having brief dentate segments.

Stipes scaly at the base.

Fronds lateral, being adherent to a creeping rhizoma.

Sori sub-marginal. Indusium frequently peltate.

Length from eighteen to twenty-four inches; colour pale green.

For fronds my obligations are due to Mr. Thomas Moore, of Chelsea, and to Mr. Joseph Henderson, of Wentworth.

It does not appear to be in any of the Nurserymen's Catalogues.

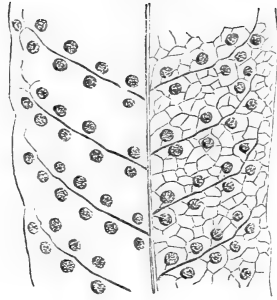
The illustration is from a frond sent by Mr. Moore, of Chelsea.





ARTEMISIA REPANDA

II-VOL. 5



Portion of mature Frond—under side.

## ASPIDIUM REPANDUM.

WILLDENOW. J. SMITH. PRESL. SPRENGEL.

PLATE II. VOL. VII.

*Aspidium platyphyllum*,

J. SMITH. METTEN.  
(Not of KUNZE.)

*Bathium repandum*,

FEE. PRESL.

*Sagenia platyphylla*,

J. SMITH.

“ *repandum*,

WILLDENOW.

“ “ “

MOORE AND HOULSTON.

*Polypodium siifolium*,

VENT.

*Tectaria crenata*,

CAVANILLES.

*Aspidium*—The Shield Fern.

*Repandum*—Wavy leaved.

A FINE species.

An evergreen stove Fern.

Native of the Malay Islands and Philippine Islands.

Sterile and fertile fronds different. The sterile frond pinnate and glabrous, the pinnæ drooping, large, petiolulate, coriaceous, and oblong-acuminate in form, above twelve inches in length;

the inferior ones two-lobed, with rounded base and entire margin.

Fertile fronds contracted, semi-erect, and repand, the under side of the lower pinnæ having one or two profound segments, and being crenate at the margin.

Stipes scaly at the base.

Fronds terminal, and adherent to an erect rhizoma.

Sori reniform.

Length thirty-six inches; colour brilliant shining green.

For a frond my thanks are due to Mr. Joseph Henderson, of Wentworth.

It may be procured of Mr. R. Sim, of Foot's Cray.

The illustration is from Mr. Sim's frond.





*Pteris aquilina*  
Merrill







FROND OF *POLYTAENIA VERRUCOSA*.

IV. 100.



Pinna of mature Frond--under side.

## ASPIDIUM PATENS.

KUNZE. LINK? FEE. WILLDENOW. SCHKUHR.  
SWARTZ. SCHOTT. SLOAN. SPRENGEL. SCHLECHTENDAL.

PLATES III AND IV. VOL VII.

<i>Lastrea patens,</i>	PRESL. LIEBMANN.
<i>Aspidium molle,</i>	LINK.
<i>Polypodium patens,</i>	AITON.
“ <i>expansum,</i>	POIRET.

*Aspidium*—The Shield Fern.

*Patens*—Spreading.

### IN THE SECTION LASTREA OF AUTHORS.

A WELL-KNOWN Fern, easily cultivated, and very ornamental.  
An evergreen stove species.

Native of Tropical America, Africa, and Asia—Mexico and the West Indies.

Introduced into the Royal Gardens, Kew, in the year 1784.

The fronds, which are broadly lanceolate in form, are pinnate; the pinnæ sessile, profoundly pinnatifid, lanceolate, and having linear-oblong, sub-falcate segments, which have an acute apex, and are largest near the rachis.

Sori medial. Indusium glandulose, and exceedingly hairy.

Fronds pubescent and glandulose beneath, terminal, and adherent to a somewhat creeping rhizoma.

Stipes scaly near the base, the scales being large.

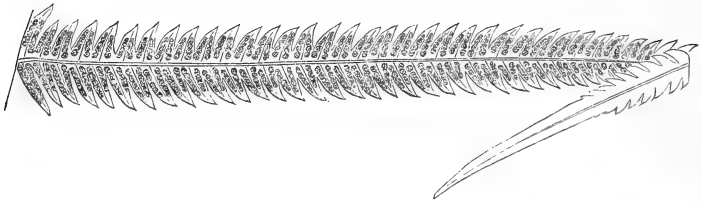
Length from thirty-five to sixty inches; colour pale green.

Mr. Henderson has a variety (figured on plate iv) which is very distinct, and which I have figured under the name of variety *Hendersoni*. Cultivated in the Wentworth collection for some years, and in all probability originated there. Although very different from the normal state, still it would be difficult to draw up a description which might not apply to both forms in different states of growth. Let it suffice therefore to mention its chief differences. In the normal state the length of the frond is from two to three feet; whilst in the variety *Hendersoni* it attains the length of from four to five feet. In the variety the pinnæ are much narrower and longer, and terminating in a narrow attenuated apex. In both forms the two lower segments are the longest, but more decidedly so in the variety.

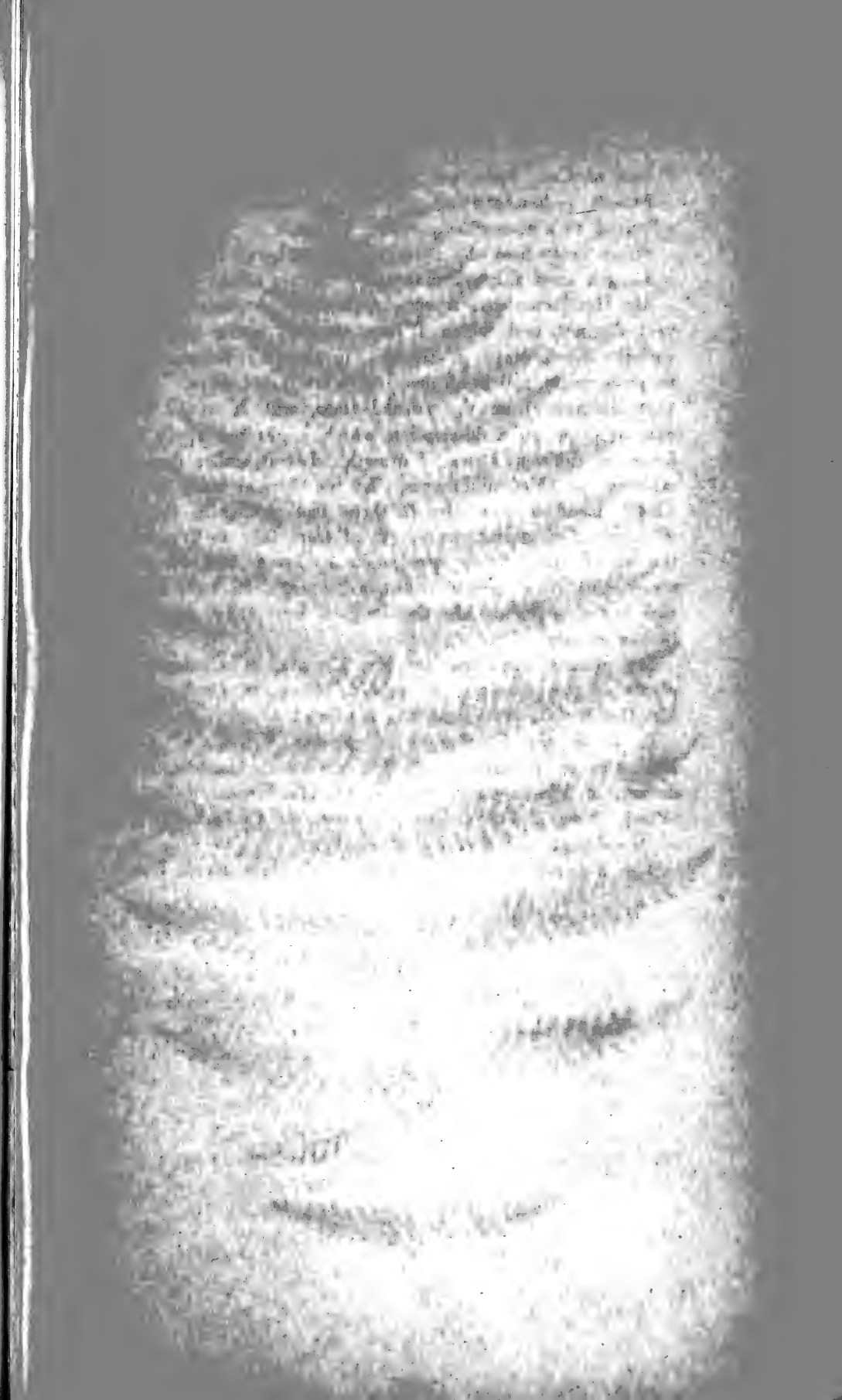
My thanks are due to Mr. Masters, of Canterbury, for plants of this species; and to Mr. Moore, of Chelsea, and to Mr. Henderson, of Wentworth, for fronds.

It is in the Catalogues of Messrs. Veitch, of Chelsea; Rollisson, of Tooting; Kennedy, of Covent Garden; A. Henderson, of Pine-apple Place; E. G. Henderson, of St. John's Wood; Sim, of Foot's Cray; Masters, of Canterbury; Booth, of Hamburg; and Cooling, of Derby.

The illustrations are from Mr. Joseph Henderson's fronds.



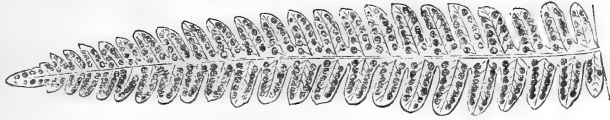
Variety *Hendersoni*.





*Aspidium polifolium*

Vahl.



Pinna of mature Frond—under side.

ASPIDIUM KAULFUSSII.

LINK. KUNZE. FEE.

PLATE V. VOL. VII.

*Lastrea Kaulfussii*,

PRESL.

*Aspidium*—The Shield Fern. *Kaulfussii*—Named after the well-known cryptogamic botanist, Kaulfuss.

IN THE SECTION LASTREA OF AUTHORS.

A PLEASING Fern, only found in the larger collections.

An evergreen stove species.

Native of Brazil.

Fronds pubescent, lanceolate in form, and pinnate. The pinnæ lanceolate, sessile, profoundly pinnatifid, and having oblong-obtuse segments. Pinnæ opposite below, alternate above.

Stipes slightly scaly.

Fronds terminal, and being adherent to an erect rhizoma.

Sori sub-marginal. Indusium exceedingly hirsute.

Length from twelve to eighteen inches; colour dull green.

For a frond I am indebted to Mr. Joseph Henderson, of Wentworth.

It may be procured of Messrs. Rollisson, of Tooting, and Booth, of Hamburg.

The illustration is from Mr. Henderson's frond.



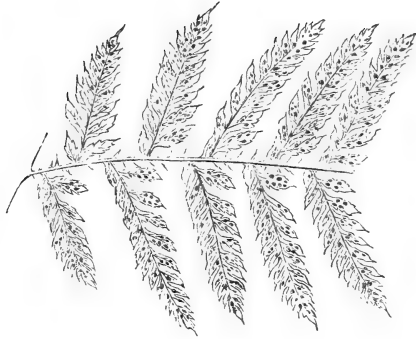






ASPIDIUM SPIKESII

VI. 1892



Portion of a pinna of mature Frond—under side.

ASPIDIUM SPINESCENS.

LOWE.

PLATE VI. VOL. VII.

*Lastrea spinescens*,

HOULSTON. MOORE.

*Aspidium*—The Shield Fern.

*Spinescens*—Terminating in a spine.

IN THE SECTION LASTREA OF AUTHORS.

AN imperfectly known ornamental species.

AN evergreen stove Fern.

NATIVE of the East Indies.

INTRODUCED nearly twenty years ago among orchids by Mr. Rucker, of Wandsworth.

THE fronds, which are deltoid, are pubescent and tripinnate; the pinnules linear-lanceolate in form, and pinnatifid; base decurrent; segments somewhat dentate and ovate, and terminating in a lengthy spinous mucro.

The fronds, which are lateral, are adherent to a creeping scaly rhizoma.

Sori sub-marginal.

Stipes scaly.

Length from eighteen to twenty-four inches; colour dull green.

For a frond my thanks are due to Mr. Thomas Moore, of Chelsea.

It is in the Catalogues of Messrs. Veitch, of Chelsea; E. G. Henderson, of St. John's Wood; and Sim, of Foot's Cray.

The illustration is from Mr. Moore's frond.





ASPIDIUM REMUOLU.

VII—VOL. 7.



Pinna of mature Frond—under side.

## ASPIDIUM ÆMULUM.

SWARTZ. SPRENGEL.

PLATE VII. VOL. VII.

<i>Polypodium æmulum,</i>	AITON.
<i>Nephrodium Fæniseeii,</i>	LOWE.
<i>Lastrea</i> “	WATSON. LINDLEY AND MOORE.
“                   “	BABINGTON. DEAKIN. SOWERBY.
“ <i>recurva,</i>	NEWMAN.
“ <i>concava,</i>	NEWMAN.
“ <i>dumetorum,</i>	OF GARDENS. ( <i>Not of J. E. SMITH.</i> )
<i>Lastrea æmula,</i>	J. SMITH.
<i>Aspidium Fæniseeii,</i>	KUNZE. FEE.
“ <i>recurvum,</i>	BREE.
“ <i>dilatatum</i> var. <i>recurvum,</i>	BREE.
“                   “   var.	HOOKE AND ARNOTT.
<i>Lophodium Fæniseeii,</i>	NEWMAN.
“ <i>recurvum,</i>	NEWMAN.

*Aspidium*—The Shield Fern.

*Æmulum*—Rival.

IN THE SECTION LASTREA OF AUTHORS.

BREE'S Fern is one of the handsomest of British Ferns, a local species, and a hardy deciduous indigenous Fern.

Native of Great Britain, Cape de Verd Isles, Madeira, and the Azores.

It is found in the counties of Cornwall, Devon, and Somerset, Sussex, Lancashire, Yorkshire, Cumberland, and Northumberland. It occurs in several places in Wales. In Scotland around Loch Lomond, in Argyleshire, Isles of Arran and Mull, Orkney, and the Hebrides. Also in Ireland.

In Yorkshire it is very abundant at Hackness, in a shady wood.

The habit of the plant is exceedingly graceful and very compact; the frond has a peculiar crispy appearance, and the colour of a very lively green.

The fronds, which are deltoid, are tripinnate; the pinnules oblong, profoundly pinnatifid, and having serrated spinous-mucronate recurved lobes; all the pinnules are curved upwards; pinnæ opposite or sub-opposite.

Fronds numerous, glandulose on the under side.

Sori medial and sub-terminal, circular in form, and covering the whole under side of the frond.

Indusium jagged on the margin, and reniform.

Veins simple, forked or pinnate; venules direct.

Rachis and stipes covered with jagged scales. Stipes half the length of the frond, rigid, and brownish purple in colour. Rachis greenish.

Fronds terminal, and adherent to a tufted rhizoma.

Length of frond from twelve to twenty-four inches, and from five to eight inches in width.

Easily cultivated in a porous soil of loam and peat, and succeeds best when grown in a shady situation.

For plants of this species my obligations are due to Mr. Joseph Sidebotham, of Manchester, and to Mr. R. T. Millet, of Penzance; and for fronds to Mr. Thomas Moore, of the Botanic Gardens, Chelsea.

There is a variety, *Prolifera*, which Mr. R. Sim possesses, which bears little plants on its frond-stalks near the surface of the soil.

It may be procured of Messrs. Jackson, of Kingston; Veitch, of Chelsea; A. Henderson, of Pine-apple Place; E. G. Henderson, of St. John's Wood; Sim, of Foot's Cray; Kennedy, of Covent Garden; Stansfield, of Todmorden; and Cooling, of Derby.

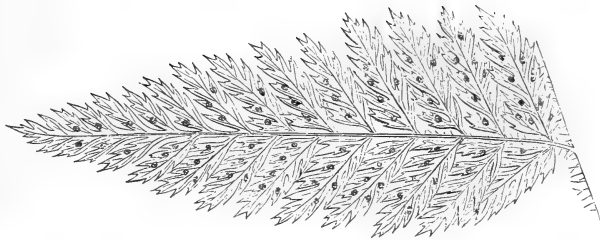






ASPIDIUM

VIII—vol. 7.



Pinna of mature Frond—under side.

## ASPIDIUM HISPIDUM.

SWARTZ. KUNZE. SPRENGEL.

PLATE VIII. VOL. VII.

<i>Polystichum hispidum</i> ,	J. SMITH.
<i>Polypodium setosum</i> ,	FORSTER.
<i>Aspidium</i> “	SCHKUHR? FEE.
“ “	LANGSDORFF AND FISCHER.
<i>Lastrea hispida</i> ,	HOULSTON.

*Aspidium*—The Shield Fern.

*Hispidum*—Bristly.

### IN THE SECTION POLYSTICHUM OF AUTHORS.

AN interesting although not well-known species.

An evergreen greenhouse Fern.

Native of New Zealand and New Holland.

Introduced into the Royal Gardens, Kew, in the year 1845,  
by Mr. Colenzo.

The fronds, which are exceedingly hairy and deltoid are tripinnate, the pinnules being linear-lanceolate, pinnatifid, narrow, and having narrow mucronate segments.

Sori medial.

Fronds terminal, and adherent to a creeping rhizoma.

Length of frond twelve inches; colour deep green.

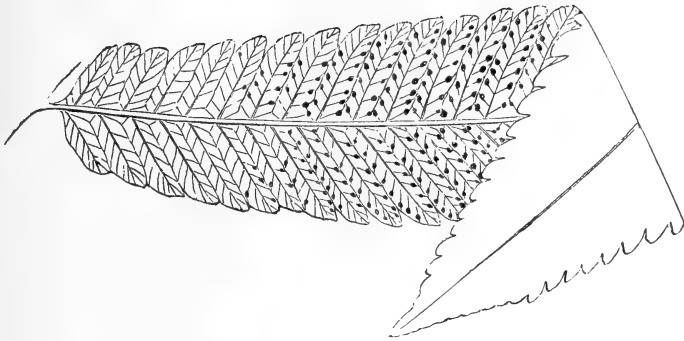
For fronds I am indebted to Mr. Joseph Henderson, of  
Wentworth.

It may be procured of Mr. R. Sim, of Foot's Cray.

The illustration is from Mr. Sim's frond.







Pinna of mature Frond—under side.

## ASPIDIUM GLANDULOSUM.

BLUME. MOORE, (*not of* HOOKER AND GREVILLE.)

PLATE IX. VOL. VII.

*Aspidium isogramma*,  
*Nephrodium glandulosum*,  
 “ *multilineatum*,  
 “ “

KUNZE.  
 PRESL.  
 MOORE AND HOULSTON.  
 OF GARDENS, (*not of* WALLICH  
 or BENTH.)

*Abacopteris glandulosa*,  
*Cyclodium glandulosum*,

FEE.  
 PRESL.

*Aspidium*—The Shield Fern.

*Glandulosum*—Glanded.

IN THE SECTION NEPHRODIUM OF AUTHORS.

A DISTINCT handsome Fern.  
 An evergreen stove species.  
 Native of India.

Fronds glabrous, pinnate; pinnæ distant, ovate, lanceolate,

VOL. VII.

D

attenuate, shortly petiolate; base sub-cordate; margin crenate. Lower pinnæ sub-opposite, upper ones alternate. Habit somewhat erect.

Sori small, reniform; indusium diminutive, being soon hidden by the sori.

Venules anastomosing, and forming lines between the primary veins, and dividing the entire surface into rectilinear parallelograms.

Fronds lateral, and adherent to a creeping rhizoma.

Stipes smooth, except when young, then there are a few scattered scales on the upper side. Rachis clothed with very brief stiff hairs.

Length of frond from twenty-four to thirty-six inches, of which the lower half is naked; colour bright green.

Known best in gardens as *Nephrodium multilineatum*, but not Wallich's plant.

My thanks are due to Mr. Joseph Henderson, of Wentworth, for fronds of this species.

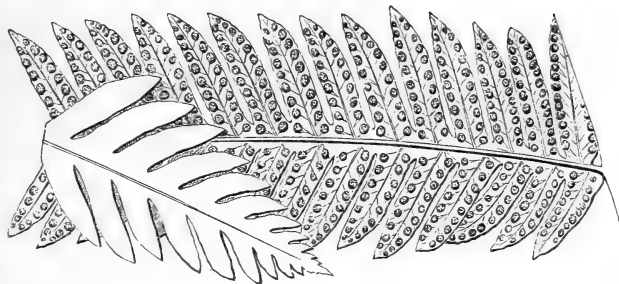
It is in the Catalogues of Messrs. Sim, of Foot's Cray; and A. Henderson, of Pine-apple Place.

The illustration is from Mr. Joseph Henderson's frond.









Pinna of mature Frond—under side.

## ASPIDIUM STRIGOSUM.

WILLDENOW.

PLATE X. VOL. VII.

<i>Lastrea crinita</i> ,	MOORE.
“ <i>strigosa</i> ,	PRESL. J. SMITH.
<i>Aspidium crinitum</i> ,	SIEBER. BOJER. WALLICH.
“ “	HOOKE AND GREVILLE.
“ “	KUNZE, ( <i>not of</i> MARTENS AND GALLEOTTI.)
<i>Polypodium crinitum</i> ,	OF GARDENS.
<i>Aspidium setosum</i> ,	BLUME, (M.S.)
“ <i>pauciflorum</i> ,	KAULFUSS.
“ <i>nitidum</i> ,	BORY.

*Aspidium*—Shield Fern.

*Strigosum*—Slender.

IN THE SECTION LASTREA OF AUTHORS.

AN exceedingly handsome rare species, very elegant in the form of the fronds, and being singular from the long, black, shining scales at the base of the frond.

This Fern should be in every collection.

An evergreen stove species.

Native of Mauritius.

The fronds, which are pinnate, are glabrous on the upper surface. The pinnæ are pinnatifid, ovate-lanceolate in form, attenuate, and sub-opposite. Segments rather obtuse, the lower and upper ones the longest.

Sori medial; indusium minute.

Stipes somewhat angular, and being furnished for about two inches at the base with long blackish incurved scales, and also with thinly scattered shorter scales on the rest of the stipes and rachis; these parts are also thickly covered throughout with very short pellucid glandulose hairs.

Length of frond twenty-four inches; colour pale green.

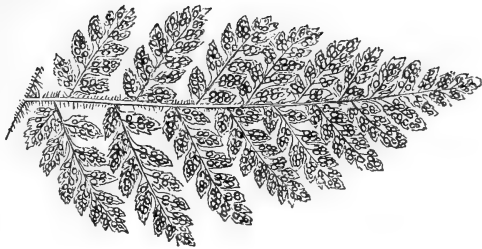
For fronds my thanks are due to Mr. Joseph Henderson, of Wentworth.

It is not in any of the Nurserymen's Catalogues.

The illustration is from Mr. Joseph Henderson's frond.







Pinna of mature Frond—under side.

## ASPIDIUM HIRTUM.

SWARTZ. SCHKUHR. SPRENGEL.

PLATE XI. VOL. VII.

*Lastrea hirta*,

PRESL. J. SMITH. MOORE.

*Polypodium barbatum*,

KUNZE.

*Aspidium*—Shield-Fern.

*Hirtum*—Hairy.

### IN THE SECTION LASTREA OF AUTHORS.

A PRETTY rare Fern, seldom to be met with in collections.

An evergreen stove species.

Native of Jamaica.

The fronds, which are bipinnate, are oblong and pinnatifid; pinnules ovate-triangular, obtuse and scarcely entire, the lowest decurrent.

Rachis and stipes very hairy. Upper surface of frond scattered over with whitish hairs.

Sori large and extending over the whole under surface of the frond.

Length of frond about nine inches, of which the lower two inches are naked.

For fronds my thanks are due to Mr. J. Smith, Curator of the Royal Gardens, Kew.

It is not in any Nurserymen's Catalogues.

The illustration is from Mr. Smith's frond.

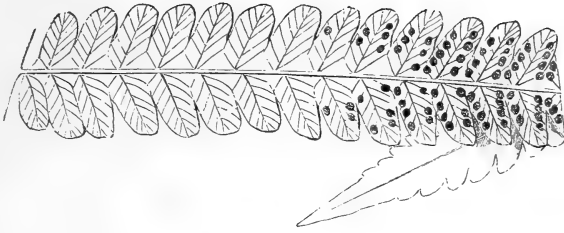






*Adiantum trichomanes*

NII-1000



Pinna of mature Frond—under side.

## ASPIDIUM TRUNCATUM.

GAUDICHAUD.

PLATE XII. VOL. VII.

*Nephrodium truncatum*,  
*Polystichum* “

J. SMITH. PRESL. MOORE.  
GAUDICHAUD.

*Aspidium*—Shield-Fern.

*Truncatum*—Abrupt-ended.

### IN THE SECTION NEPHRODIUM OF AUTHORS.

AN evergreen greenhouse species.

Native of the Sandwich Islands.

The fronds, which are pinnate, become narrower towards the apex; the terminal pinna being large and pinnatifid. Pinnæ pinnatifid, lanceolate, having rounded segments, and petiolate except the apex of the frond. Veins pinnate, the basal pair angularly anastomosing, and conspicuous.

Sori medial and circular.

Length of frond twenty-four inches; colour deep green.

For fronds my thanks are due to Mr. J. Smith, of the Royal Gardens, Kew; and to Mr. Thomas Moore, of the Chelsea Botanic Gardens.

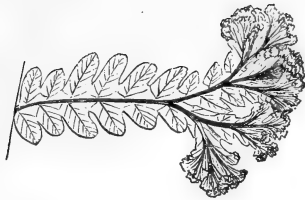
It is not in the Nurserymen's Catalogues.

The illustration is from a frond sent by Mr. Smith.





ASPIDIUM MOLLE.—VAR. CORYMBIFERUM.



Pinna of multiple Frond—upper side.

ASPIDIUM MOLLE.—VARIETY CORYMBIFERUM.

SIM.

PLATE XIII. VOL. VII.

THE normal form of the *Aspidium molle*, of Swartz, more generally known as the *Nephrodium molle*, of Brown, has been figured on Plate XXX, vol. vi, and described on page 87 of that volume. Since an account of this species has been published, Mr. R. Sim, of the Foot's Cray Nursery, has introduced to the public this most singular multiple variety. It is perhaps the most extraordinary variety known, the stem being branched, all the ends of the pinnæ multiple and crisped, and the apex of the frond crowded with the many-crisped multiple portions. There is another peculiarity about it, namely, that it varies so very much in the form and multiplicity of its fronds. The habit of the plant is erect, and its height only half that of the normal form.

I am indebted to Mr. R. Sim, for a plant and fronds of this Fern, which enables me to figure it at the conclusion of the genus *Aspidium*; and while referring to this species, I take the opportunity of adding to the synonymes the following:—

*Aspidium molle*,

*Nephrodium molle*,

VOL. VII.

JACQUIN, (not of LINK,  
which is *Aspidium patens*.)

LIEBMANN.

E

<i>Aspidium nymphale</i> ,	SCHUHR.
“ <i>adultum</i> ,	WICKSTR.
“ <i>appendiculatum</i> , (in part.)	WALLICH.
“ <i>canescens</i> , (in part.)	WALLICH.
“ <i>diversum</i> ,	KUNZE.
“ <i>hirsutulum</i> ,	WALLICH.
“ <i>patens</i> ,	WILDENOW, ( <i>not of</i> SWARTZ, KUNTH, BLUME, KUNZE, <i>or</i> GUEINZIUS.)
“ <i>propinquum</i> ,	OF GARDENS.
“ <i>solutum</i> ,	WALLICH.
“ <i>subpubescens</i> ,	BLUME.
“ <i>tectum</i> ,	WALLICH.

Schiede, Karwinski, and Liebmann, each found this species in various parts of Mexico.



## ADDENDA TO THE GENUS ASPIDIUM.

THE following additions have been made to the genus *Aspidium*, from Mr. Moore's valuable work, "Index Filicum," the part referring to this family having only recently been published.

## ASPIDIUM DECURRENS. Page 25, vol. 6.

Not the *Aspidium decurrens* of either Smith or Presl; the former is the *Sagenia pteropus* of Moore, and the latter *S. decurrens* of Moore.

## ASPIDIUM FALCINELLUM. Page 29, vol. 6.

Not the *Aspidium auriculatum* of Swartz, Schkuhr, Wallich, or Don; Swartz's plant is *Polystichum auriculatum* of Moore; Schkuhr's is *P. acrostichoides* of Moore; Wallich's is the *Nephrolepis tuberosa* of Moore; Don's is the *P. lentum* of Moore. The *A. auriculatum* of Holl is the *A. falcinellum* of Swartz.

## ASPIDIUM AUGESCENS. Page 35, vol. 6.

*Aspidium serra* of Swartz is the *Lastrea serra* of Moore; *A. serra* of Schkuhr is the *Nephrodium unitum* of Moore; *A. serra* of Raddi is the *N. unitum*, var., of Moore; *A. ottonis* of Kunze is *A. augescens* of Moore.

## ASPIDIUM ACUMINATUM. Page 37, vol. 6.

*Aspidium acuminatum* of Willdenow is not this plant, but the *Nephrolepis ensifolia* of Moore, the present plant being the *A. acuminatum* of English Gardens, (not of the Berlin Gardens,) that plant being the *Athyrium oxyphyllum* of Moore.

## ASPIDIUM FILIX-MAS. Page 41, vol. 6.

*Aspidium affine* of Fischer and Meyer is a variety of *A. filix-mas* of Swartz, not the *A. affine* of Blume, which is *Nephrodium lineatum* of Moore, nor the *A. affine* of Wallich, which is *Polystichum aculeatum* of Moore, nor the *A. affine* of Roxburgh, which is a variety of *A. rigidum*.

*A. paleaceum*, Don, is a variety of *A. filix-mas*, but not of Swartz, which is *Lastrea paleacea* of Moore.

*A. Wallichianum* of Sprengel is a variety of *A. filix-mas*, but not so the *A. Wallichianum* of Bory, which is *Oleandra nerioformis* of Moore, nor of Kunze, which is *Polystichum setosum* of Moore, nor of Wallich, which is *O. Wallichii* of Moore.

Add to synonymes of *A. filix-mas*:—

<i>Aspidium adnatum</i> ,	BLUME.
“ <i>caucasicum</i> ,	A. BRAUN.
“ <i>crinitum</i> ,	MARTENS AND GALLEOTTI.
“ <i>expansum</i> ,	DIETRECH.
“ <i>Mildeanum</i> ,	GÖPP.
“ <i>nevadense</i> ,	GERMAN GARDENS.
“ <i>nidus</i> ,	GRIFFITH.
“ <i>parallelogrammum</i> ,	KUNZE.
“ <i>pinnatifidum</i> ,	WALLICH, M. S.
“ <i>pseudo filix-mas</i> ,	FEE.
“ <i>Smithii</i> ,	ENGLISH GARDENS.
“ <i>uliginosum</i> ,	BLUME.

Not the *A. filix-mas* of Holl, which is *Lastrea elongata* of Moore, nor of Pursh, which is *L. Goldiana* of Moore.

#### ASPIDIUM ACULEATUM. Page 49, vol. 6.

*Aspidium intermedium*, not of Willdenow, which is *Lastrea spinulosa*, var. of Moore, nor of Blume, which is *L. Blumei* of Moore, nor of Link, which is *Athyrium filix-femina* of Moore, nor of J. Smith, which is *Sagenia coadunata*, var., of Moore.

*A. munitum*, not of Kaulfuss, which is *Polystichum falcinellum* var. of Moore.

*A. lentum*, not of Don, which Moore gives as *P. lentum*.

*A. ocellatum*, not of Wallich, which is *P. lentum* of Moore.

Add as synonymes:—

<i>Aspidium affine</i> ,	WALLICH.
“ <i>scariosum</i> ,	ROXBURGH.
“ <i>sublobatum</i> ,	BLUME.

#### ASPIDIUM ACROSTICHOIDES. Page 57, vol. 6.

*Aspidium auriculatum*, not of Swartz, Wallich, Holl, or Don. Add as synonyme:—

<i>Aspidium Schweinitzii</i> ,	BECK.
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#### ASPIDIUM CRISTATUM. Page 59, vol. 6.

*Aspidium cristatum*, not of Ruprecht.

*A. spinulosum*, not of Swartz, Schrader, Schkuhr, Gray, or Hooker and Arnott.

## ASPIDIUM RIGIDUM. Page 63, vol. 6.

Not *A. rigidum*, var., of A. Braun, which is *Lastrea remota* of Moore.

Not *A. pallidum* of Blume, which is *L. pallida* of Moore, nor of English Gardens, which is *L. filix-mas* of Moore.

Not *A. nevadense* of German Gardens, which is a variety of *L. filix-mas* of Moore.

## ASPIDIUM PUBESCENS. Page 73, vol. 6.

Mr. Moore, in his "Index Filicum," does not think this is the *Lastrea pubescens* of Swartz, but the *L. quinquangularis*, (*Aspidium quinquangularis* of Kunze.)

## ASPIDIUM ELONGATUM. Page 75, vol. 6.

Not *A. elongatum* of Willdenow, which is *Lastrea Canariense* of Moore.

Not *A. oligodonton* of Desvaux, which is *Asplenium Aitonii*, var., of Moore.

## ASPIDIUM DILATATUM. Page 77, vol. 6.

Not *A. dilatatum* of Wallich, which is *Sagenia coadunata* of Moore.

Not *A. dilatatum* of Holl, which is *Lastrea æmula* of Moore.

Not *A. dilatatum* of American authors, which is *L. spinulosa*, var., of Moore.

Not *A. dilatatum*, var. *recurvum* of Bree, which is *L. æmula* of Moore.

Not *A. spinulosum* of Gray, which is *L. spinulosa*, var., of Moore.

Not *A. spinulosum*, var., of Hooker and Arnott, which is *L. æmula* of Moore.

Not *A. spinulosum*, var. *cristatum*, Lasch., which is *L. spinulosa* of Moore.

Not *A. spinulosum*, var. *Boottii*, Gray, which is *L. spinulosa*, var., of Moore.

Not *A. spinulosum*, var. *uliginosum*, A. Braun, which is *L. cristata*, var., of Moore.

Add synonyme:—

*Aspidium tanacetifolium*,

OFIZ.

## ASPIDIUM GOLDIANUM. Page 83, vol. 6.

Not *A. Goldianum* of Gardens, which is *Lastrea cristata* of Moore.

ASPIDIUM TRIFOLIATUM. Page 85, vol. 6.

Add as synonyms:—

<i>Aspidium trifoliatum</i> ,	WILLDENOW. SCHLECHTENDAL.
“ “	DESVAUX. PRESL. METTENIUS.
“ “	TAUSCH. LIEBMANN.
“ <i>heracleifolium</i> ,	SPRENGEL. DESVAUX. BLUME.
“ “	MARTENS AND GALLEOTTI. KUNZE.
“ “	METTENIUS.
“ <i>multisorum</i> ,	DESVAUX.
<i>Polypodium trifoliatum</i> ,	POIRET.
“ <i>cordifolium</i> ,	MARTENS AND GALLEOTTI.
“ “	LIEBMANN.
“ <i>triphylum</i> ,	DESVAUX. POIRET. SPRENGEL.
<i>Tectaria trifoliata</i> ,	CAVANILLES.
<i>Bathmium heracleifolium</i> ,	FEE.
<i>Nephrodium trifoliatum</i> ,	BORY.
<i>Drynaria cordifolia</i> ,	FEE.

Not the *Aspidium trifoliatum* of Sieber, which is *Sagenia pica* of Moore, nor *A. trifoliatum*, var., Sieber, which is *S. macrophylla* of Moore, nor var. of Swartz, which is *S. pica* of Moore, nor the *A. pica* of Desvaux, which is *S. pica* of Moore.

Add to the localities:—Hispaniola, Cuba, Barbadoes, Mexico, Guadaloupe, Guatemala, Panama, Columbia, Venezuela, Peru, Amazon, Surinam, China, Java, and the Mauritius.

ASPIDIUM MUCRONATUM. Page 91, vol. 6.

Not *A. mucronatum* of Don, which is *Lastrea Hamiltonii* of Moore.

Not *A. mucronatum* of Lowe, which is *Polystichum triangulum* of Moore.

According to Mr. Moore this is not Swartz's plant.

ASPIDIUM VILLOSUM. Page 101, vol. 6.

Not *Aspidium villosum* of Bory, which is *Lastrea cruciata* of Moore.

Not *A. villosum* of Heward, which is *Polypodium lachnopo-dium* of Moore.

ASPIDIUM CAPENSE. Page 107, vol. 6.

Not *A. Capense* of Swartz, which is *Amphicosmia Capensis* of Moore.

ASPIDIUM SPINULOSUM. Page 109, vol. 6.

Not *A. spinulosum* of Schkuhr, which is *Lastrea dilatata* of Moore.

ASPIDIUM CANARIENSE. Page 111, vol. 6.

*A. canariense* of A. Braun. Not *A. Canariense* of Willdenow, which is *Cystopteris fragilis* of Moore.

*A. Ludovicianum* of Kunze is *A. Canariense* of Moore.

ASPIDIUM PTEROIDES. Page 115, vol. 6.

Not of Swartz or Blume, which is *Nephrodium unitum* of Moore.

ASPIDIUM CICUTARIUM. Page 117, vol. 6.

Not *A. cicutarium* of Splitgerber and Klotzsch, which is *Lastrea funesta* of Moore.

Not *A. cicutarium* of English Gardens, which is *Goniopteris tetragona* of Moore.

Not *A. latifolium* of Presl, which is *Sagenia latifolia* of Moore.

Not *A. apifolium* of Schkuhr, which is *Sagenia apifolia* of Moore.

ASPIDIUM MACROPHYLLUM. Page 119, vol. 6.

Not of Blume, which is *Sagenia pteropus* of Moore, nor of Sieber, which is *S. angulata* of Moore.

Not the *A. bifidum* of Carmichael, which is *Lastrea tomentosa* of Moore.

ASPIDIUM UNITUM. Page 121, vol. 6.

Not of Mettenius, which is *Nephrodium Hookeri* of Moore.

Add as synonymes:—

<i>Aspidium unitum,</i>	BLUME. HOOKER & ARNOTT.
“ <i>lucens,</i>	BOJER.
“ <i>aridum,</i>	DON.
“ <i>callosum,</i>	BLUME.
“ <i>contiguum,</i>	KAULFUSS.
“ <i>continuum,</i>	DESLAUX.
“ <i>cucullatum,</i>	BLUME.
“ <i>Eckloni,</i>	KUNZE.
“ <i>goggylodus,</i>	SCHUHR.
“ <i>gongyloides,</i>	MEYER.
“ <i>lanuginosum,</i>	BORY.
“ <i>microcarpum,</i>	WILDENOW.
“ <i>obtusatum,</i>	SWARTZ.
“ <i>paludosum,</i>	METTENIUS.
“ <i>Pohlianum,</i>	PRESL.
“ <i>propinquum,</i>	SWARTZ.
“ <i>pteroides,</i>	SWARTZ. BLUME.
“ <i>resiniferum,</i>	KAULFUSS.
“ <i>serra,</i>	SCHUHR. RADDI.
“ <i>serratum,</i>	SWARTZ.
“ <i>venulosum.</i>	BLUME. WALLICH.

ASPIDIUM HOOKERI. Page 123, vol. 6.

Not *A. Hookeri* of Sweet, which is *Fadyenia prolifera* of Moore, or of Klotzsch, which is *Cyclodium meniscoidis* of Moore.

Add synonymes:—

<i>Aspidium puberum,</i>	WALLICH.
“ <i>unitum,</i>	METTENIUS.

ASPIDIUM COADUNATUM. Page 127, vol. 6.

Not *A. coadunatum* of Kaulfuss, which is *Nephrodium coadunatum* of Moore.

ASPIDIUM RECEDENS. Page 1, vol. 7.

*Aspidium recedens,* METTENIUS. (Not of STURM.)

ASPIDIUM REPANDUM. Page 3, vol. 7.

<i>Aspidium repandum,</i>	(Not of J. SMITH, BLUME, or PRESL.)
“ <i>platyphyllum,</i>	PRESL. (Not of WILLDENOW.)
“ <i>tectoria,</i>	DESVAUX?

ASPIDIUM PATENS. Page 5, vol. 7.

Not of Willdenow, which is *Nephrodium molle* of Moore, nor of Kunth, which is *Lastrea Kunthii* of Moore, nor of Blume, which is *Mesochlæna Javanica* of Moore, nor of Gueinzus, which is *Goniopteris patens* of Moore, nor of Kunze, which is *Lastrea Gueinziana* of Moore.

*A. molle*, not of Swartz, which is *Nephrodium molle* of Moore.

ASPIDIUM KAULFUSSII. Page 7, vol. 7.

<i>Aspidium arboreum,</i>	LODDIGES.
“ <i>riparium,</i>	MORITZ.

ASPIDIUM ÆMULUM. Page 11, vol. 7.

Not of Kunze.

<i>Aspidium dilatatum,</i>	HOLL. (Not of SMITH or WALLICH.)
“ <i>odoratum,</i>	LOWE, M.S. (Not of SPRENGEL, SIEBER, or BORY.)
“ <i>spinulosum,</i> var.	HOOKEE AND ARNOTT.

ASPIDIUM HISPIDUM. Page 13, vol. 7.

<i>Aspidium setosum,</i>	(Not of SWARTZ, WALLICH, KLOTZSCH, or BLUME.)
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## GENUS VI.

## HYPODERRIS. R. BROWN.

A SOLITARY species, native of the Island of Trinidad.

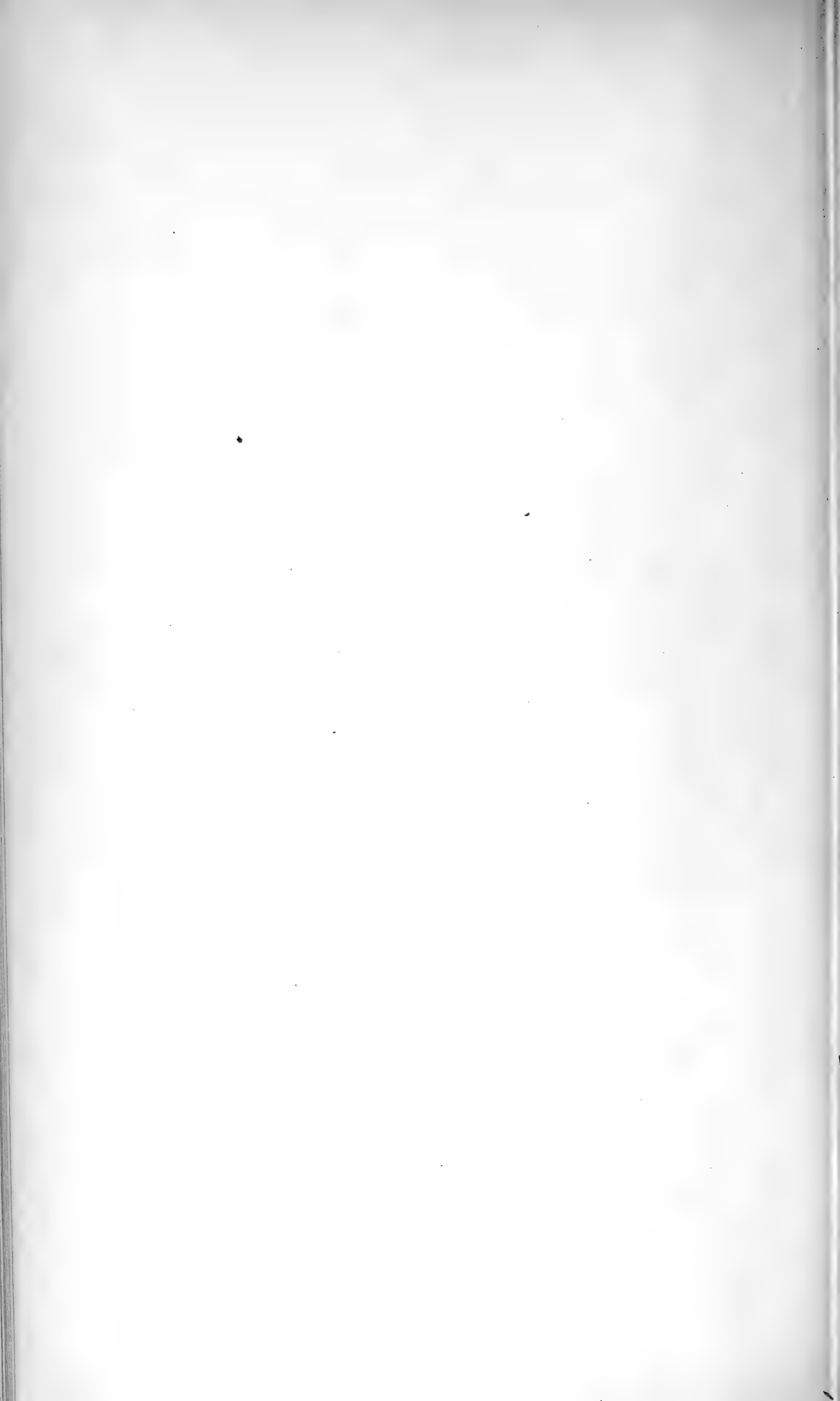
The name is from *Hypo* under, and *Derris* a skin, in allusion to the attachment of the indusium, of which a portion is buried under the sori.

Distinguished from the genus *Woodsia*, by having reticulated venation; it does not differ in any other respect, except in habit.

Fronde stipitate, simple, entire, or trilobate.

Rhizoma creeping.

Sori circular, irregular, or uniserial on either side of the primary veins, and being formed at the points of confluence of numerous veinlets.



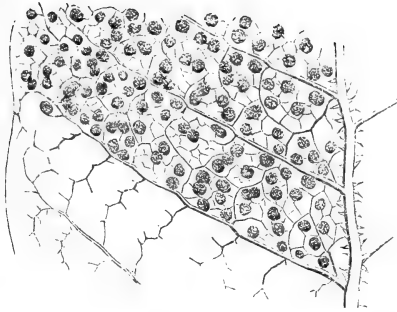






DEPARTMENT OF AGRICULTURE

XIV VOL. 7



Portion of mature Frond—under side.

## HYPODERRIS BROWNII.

J. SMITH. FEE. HOOKER AND BAUER.

PLATE XIV. VOL. VII.

*Woodsia Brownii*,

METTENIUS.

*Hypoderris*—Under-the-skin.

*Brownii*—Named in honour  
of the late R. Brown, the eminent Botanist.

A SINGULAR, handsome, and rare Fern, but little known in cultivation in this country.

An evergreen stove species.

Native of the Island of Trinidad and Guiana.

Introduced into England about the year 1850.

The fronds, which are simple or trilobate, are oblong-acuminate in form, the lateral lobes being very small in comparison with the central one. Fronds undulated, somewhat membranous; base cordate, margin of the frond entire.

Stipes and rachis thickly scaly, the scales being diminutive and whitish.

Fronds lateral and adherent to a creeping and scaly rhizoma. Veins anastomosing and reticulated.

Sori usually scattered throughout the whole under side of the frond.

Length from twelve to twenty-four inches; colour light green. The lower four to nine inches of frond naked.

For fronds my thanks are due to Sir W. J. Hooker, Director of the Royal Gardens, Kew; and to Mr. George Norman, of Hull.

It may be procured of Messrs. Veitch, Jun., of the Exotic Nursery, Chelsea.

The illustration is from Mr. Norman's frond.

## GENUS VII.

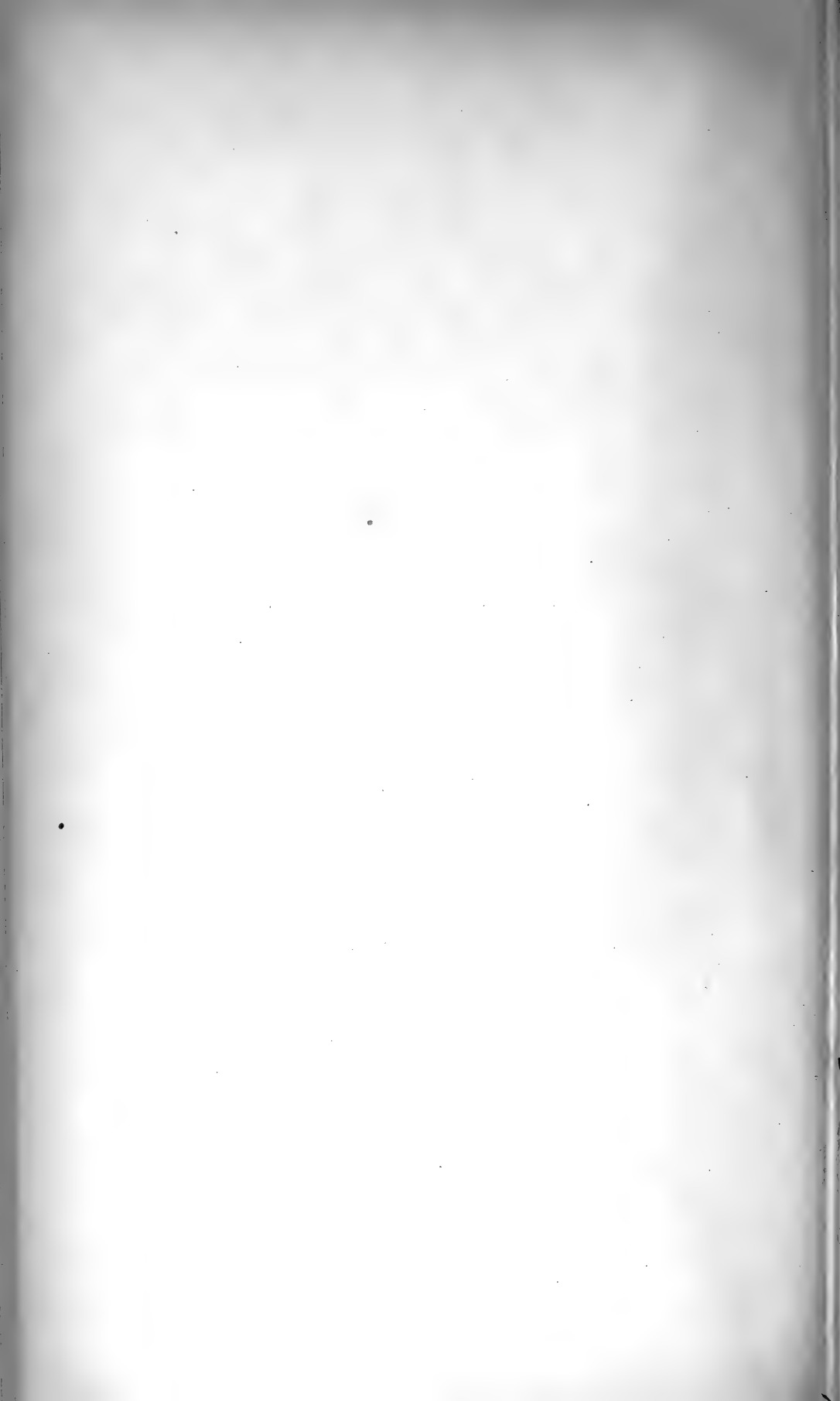
## MESOCHLÆNA. R. BROWN.

VEINS pinnate and costæform, the lower pair of venules anastomosing. Sori oblong-linear, medial. Indusium linear, and being attached longitudinally on the centre of the receptacle. Fronds bipinnatifid.

Fée, in his "Genres de la Famille des Polypodiacées," under the name of *Stegnogramme*, enumerates the following:—

- |                          |        |
|--------------------------|--------|
| 1.— <i>Aspidioides</i> , | Blume. |
| 2.— <i>Mesochlæna</i> ,  | Fee.   |
| 3.— <i>Moluccana</i> ,   | Fee.   |
| 4.— <i>Javanica</i> ,    | Brown. |

Only one species is cultivated in England, namely, *Mesochlæna Javanica*.



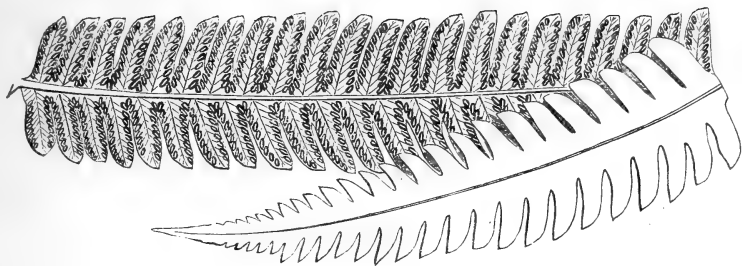




MESOCHLÆNA JAVANICA.

XV—Vol. 7.





Pinna of mature Frond—under side.

MESOCHLÆNA JAVANICA.

R. BROWN. J. SMITH. KUNZE.

PLATE XV. VOL. VII.

<i>Sphaerostephanos asplenioides</i> ,	J. SMITH. KUNZE. HOOKER.
<i>Lastrea microchlæna</i> ,	DE VRIESE.
<i>Stegnogramme Javanica</i> ,	FEE.
<i>Aspidium brachyotum</i> ,	BLUME.
“ <i>Javanicum</i> ,	METTENIUS.
“ <i>patens</i> ,	BLUME, (not of SWARTZ, KUNTH. WILLDENOW, GUEINZIUS, or KUNZE.)
“ <i>polycarpon</i> ,	BLUME.
“ <i>species, Java, No. III</i> ,	SCHOTT, (M.S.)

*Mesochlæna*—Middle-cloaked. From the Greek, in reference to the manner of attachment of the indusium. *Javanica*—Java.

An interesting species, not yet common in collections.

An evergreen stove Fern.

Native of Java and Singapore.

The fronds are pinnate, the pinnæ being pinnatifid, narrow, oblong-lanceolate, mostly opposite. Segments obtuse and slightly falcate, strongly marked underneath with the simple, free, parallel veins; the lower pair of venules anastomosing in the manner of the section *Nephrodium*.

Stipes a foot or more long, furnished on each side with short abortive pinnæ, nearly to the base. Primary and secondary rachis, as well as the stipes and veins, covered thickly with short, spreading, pellucid hairs.

Sori medial, oblong-linear, and decussate; the indusium linear, and being attached longitudinally on the centre of the receptacle, and having sporangia in its axis on either side. Margin free.

Length from twenty-four to forty-eight inches.

For fronds my thanks are due to Sir W. J. Hooker, Royal Gardens, Kew; Mr. Moore, of the Chelsea Botanic Gardens; M. Schott, of the Imperial Gardens of Schonbrunn; and Mr. Joseph Henderson, of Wentworth.

It may be procured of Messrs. Rollisson, of Tooting; and Booth, of Hamburg.

The illustration is from Mr. Moore's frond.

## GENUS VIII.

## OLEANDRA. CAVANILLES.

AN extremely interesting small family, none of the species of which are found in any except the best collections.

The meaning of the name is not known.

Presl, in his "Antamen Pteridographiæ," gives the following:—

Oleandra neriifolia. <i>Cavanilles.</i>		Oleandra articulata. <i>Presl.</i>
“ nodosa. <i>Presl.</i>		“ Wallichii. <i>Presl.</i>

Fee in his "Genres de la Famille des Polypodiacées," enumerates.

Cumingii. <i>J. Smith.</i>		Moritzii. <i>Fee.</i>
Macrocarpa. <i>Presl.</i>		Lomatopus. <i>Fee.</i>
Mollis. <i>Presl.</i>		Wallichii. <i>Fee.</i>
Neriiformis. <i>Cavanilles.</i>		Hirtella. <i>Miquel.</i>
Phyllarthron. <i>Fee.</i>		Nodosa. <i>Cavanilles.</i>
Musæfolia. <i>Fee.</i>		Articulata. <i>Presl.</i>

Mr. Thomas Moore, in his "Index Filicum," mentions

O. neriiformis. <i>Cavanilles.</i>		O. nodosa. <i>Presl.</i>
O. articulata. <i>Presl.</i>		O. pilosa. <i>Hooker.</i>
O. Wallichii. <i>Presl.</i>		O. Cumingii. <i>J. Smith.</i>

Fronds simple, entire, lanceolate, and stipitate.

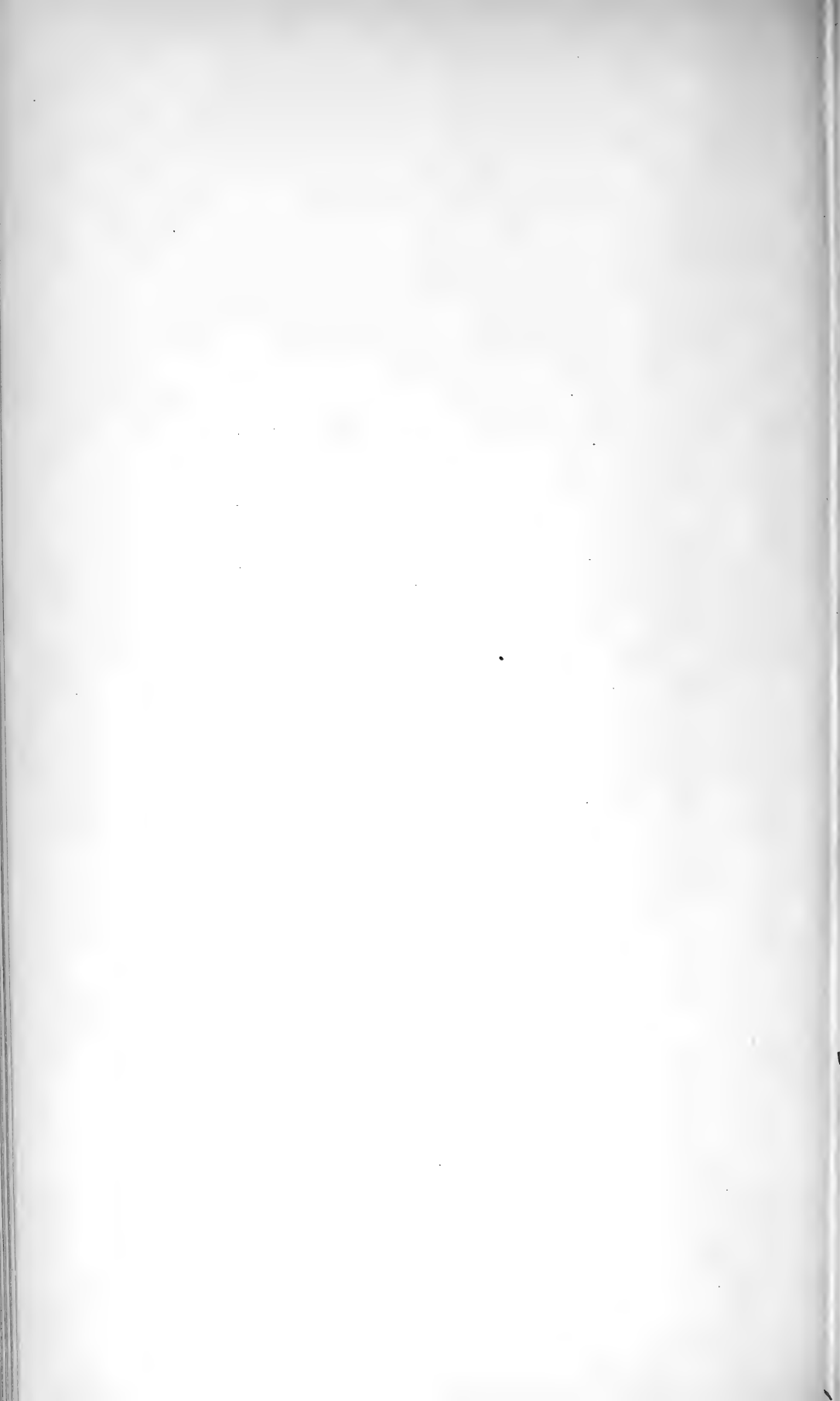
Rhizoma scandent or creeping.

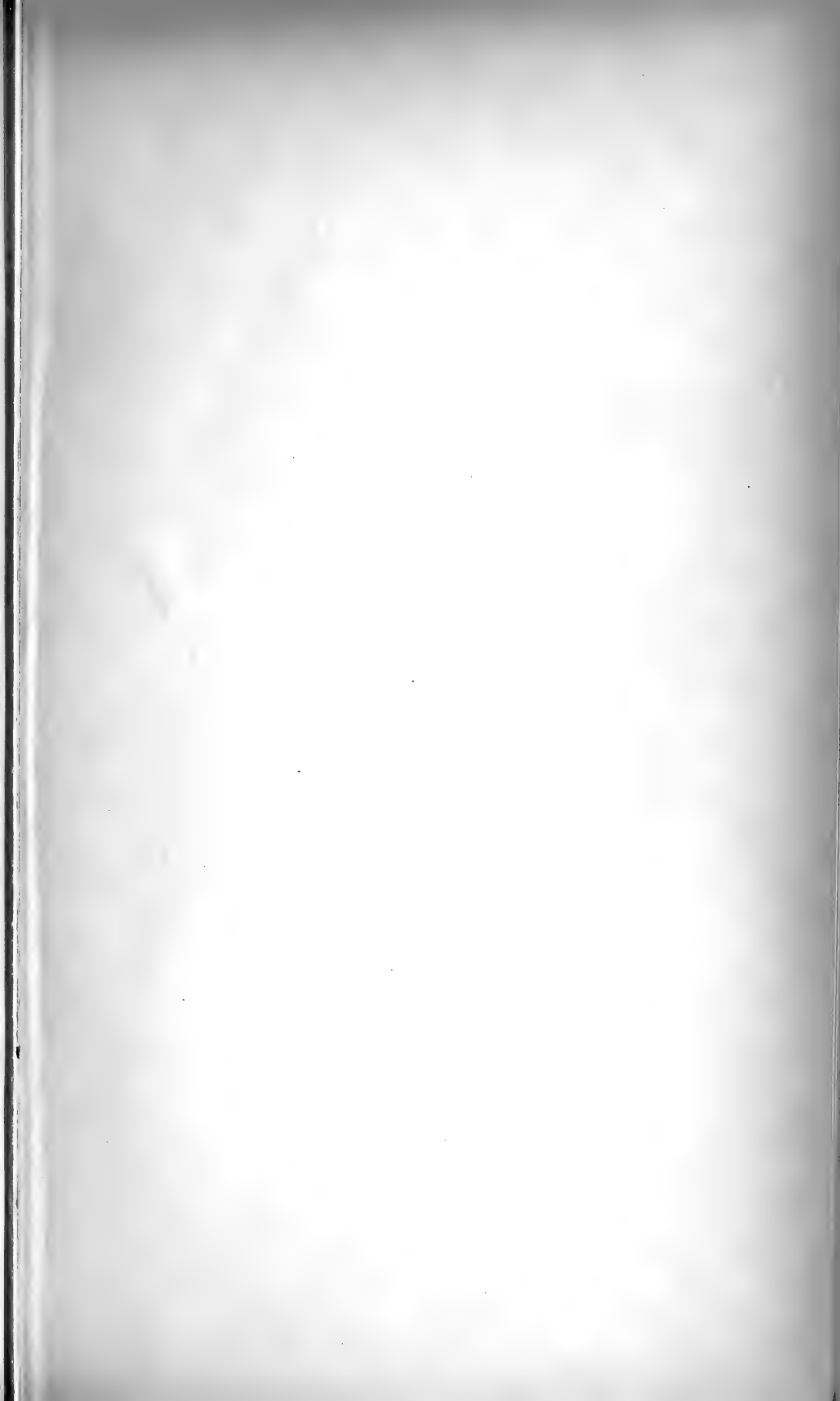
Sori circular, transversely uniserial, costal, or irregular.

Indusium reniform.

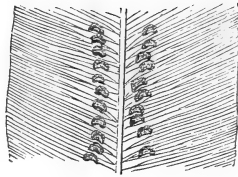
Habit very distinct.

Veins simple or forked.









Portion of mature Frond—under side.

## OLEANDRA NERIIFORMIS.

CAVANILLES. KUNZE. SMITH. BORY.

PLATE XVI. VOL. VII.

<i>Aspidium neriiformis</i> ,	SWARTZ.
“ <i>subcostale</i> ,	WALLICH.
“ <i>neriifolium</i> ,	POIRET.
“ <i>salaccense</i> ,	BLUME.
“ <i>neriiforme</i> ,	SWARTZ. SPRENGEL.
“ <i>lorifrons</i> ,	KUNZE.
“ <i>pistillare</i> ,	SWARTZ.
“ <i>Wallichianum</i> ,	BORY, (not of SPRENGEL, KUNZE, or WALLICH.)
<i>Oleandra hirtella</i> ,	MIQUEL. SCHOTT. KUNZE.
“ “	MOORE AND HOULSTON.
“ <i>neriifolia</i> ,	CAVANILLES. PRESL.
<i>Ophiopteris verticillata</i> ,	REINWARDT.

*Oleandra*—.....?

*Neriiformis*—Oleander-like.

A RARE handsome species, worthy of a place in every collection, easily cultivated and distinct in habit and general appearance from all other Ferns.

An evergreen stove species.

Native of the East Indies, Malayan Archipelago, Java, and Tropical America.

Introduced into the Royal Gardens, Kew, in the year 1848.

Fronds simple, lanceolate, exceedingly membranous, undulated; margin entire, round, or somewhat attenuated at the base.

The fronds, which are twelve inches in length, recline, and are verticillate or sub-verticillate, and being articulated with a frutescent scandent rhizoma.

Rhizoma covered with brown scales.

Colour of the frond vivid pale green.

Sori uniserial; costal, crowded. Indusium reniform.

Commonly known as the *Oleandra hirtella*.

For a plant of this species my obligations are due to M. Schott, Director of the Imperial Gardens of Schonbrunn; and for fronds to Sir W. J. Hooker, Royal Gardens, Kew; Mr. Sim, of Foot's Cray; and to Mr. Joseph Henderson, of Wentworth.

It may be procured of Messrs. Veitch, of Chelsea; Sim, of Foot's Cray; Rollisson, of Tooting; A. Henderson, of Pine-apple Place; E. G. Henderson, of St. John's Wood; and Booth, of Hamburg.

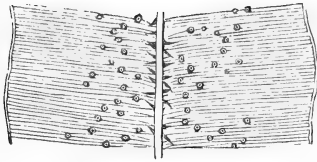
The illustration is from Sir William Hooker's frond.







*Phyllanthus* 1090  
1911



Portion of mature Frond—under side.

## OLEANDRA NODOSA.

PRESL. J. SMITH. KUNZE. FEE. MOORE AND HOULSTON.

PLATE XVII. VOL. VII.

*Aspidium nodosum*,

“ “

“ *articulatum*,

WILLDENOW. SPRENGEL.

SCHKUHR. PLUMIER.

(*Not of KUNZE or BLUME.*)

SCHKUHR. (*Not of SWARTZ  
or LOWE.*)

*Oleandra*—.....?

*Nodosa*—Knotty.

A HANDSOME free-growing Fern, only to be met with in good collections.

An evergreen stove species.

Native of the East Indies, West Indian Islands, Jamaica, and Tropical America.

Introduced into the Royal Gardens, Kew, in 1848.

The fronds, which are lanceolate-acuminate, are simple, entire on the margin, and attenuated at the base.

Veins forked; venules parallel, direct, free, and having their apices slightly thickened and gently curved.

Stipes and rachis ebeneous; the rachis covered beneath with brownish cordate scales.

Rhizoma scaly and creeping.

Sori circular, uniserial, and irregularly scattered.

The fronds articulated with the stipes, and at some distance from the rhizoma.

Length of frond twelve to fourteen inches; colour brilliant green.

Mr. Sim, in his new Catalogue, enumerates four species:—

Neriiformis. <i>Cavanilles.</i>	From	Hirtella. <i>Miquel.</i>
Natal.		Nodosa. <i>Presl.</i>
Articulata. <i>Presl.</i>		

As some doubt yet hangs over these species, it has been thought the wiser plan to figure the two species according to Smith, leaving the further discussion and enumeration to the Appendix, in order that the Author may have an opportunity of seeing the living plants.

For fronds of this Fern my thanks are due to Mr. J. Smith, of the Royal Gardens, Kew, and to Mr. Joseph Henderson, of Wentworth.

It is in the Catalogues of Messrs. Veitch, of Chelsea; Sim, of Foot's Cray; A. Henderson, of Pine-apple Place; [and Booth, of Hamburg.

The illustration is from Mr. Smith's frond.

## GENUS IX.

## NEPHROLEPIS. SCHOTT.

AN interesting genus. The name derived from the Greek, *nephros*, a kidney, and *lepis*, a scale, in reference to the covering of the spore-cases.

Fronds pinnate, linear, or narrow-elongate; pinnæ numerous, upper side of the base auriculated, sessile, and articulated to the rachis. The pinnæ very soon fall from the rachis, frequently leaving a more or less leafless stem.

Veins forked. Venules free and clavate, the basal exterior one being fertile.

Sori terminal, circular, sub-marginal, transverse, and uniserial. Indusium reniform or sub-reniform.

The fronds vary in length from twelve to seventy inches.

Rhizoma brief, erect, forming lengthy slender stolones, which bear fasciculate crowns at intervals, or elongately creeping; sometimes bearing tubers.

There are no British examples.

Mr. Moore, in his "Index Filicum," gives the following:—

Platyotis. <i>Kunze.</i>	Tuberosa. <i>Presl.</i>
Hirsutula. <i>Presl.</i>	Undulata. <i>J. Smith.</i>
Splendens. <i>Presl.</i>	Obtusifolia. <i>Presl.</i>
Trichomanoides. <i>J. Smith.</i>	Cordifolia. <i>Presl.</i>
Biserrata. <i>Schott.</i>	Neglecta. <i>Presl.</i>
Punctulata. <i>Presl.</i>	Volubilis. <i>Presl.</i>
Biaurita. <i>Presl.</i>	Floccigera. <i>Presl.</i>
Repens. <i>Brackenridge.</i>	Gibbosa. <i>Presl.</i>
Sesquipedalis. <i>Presl.</i>	Mauritianum. <i>Moore.</i>
Exaltata. <i>Schott.</i>	Pendula. <i>Moore.</i>
Pectinata. <i>Schott.</i>	Ramosa. <i>Moore.</i>
Davallioides. <i>Kunze.</i>	

Mr. J. Smith, in his "Catalogue of Ferns cultivated in British Gardens," gives the following:—

*Pectinata.* Schott.  
*Undulata.* J. Smith.  
*Tuberosa.* Presl.  
*Exaltata.* Schott.

*Ensifolia.* Presl.  
*Hirsutula.* Presl.  
*Devallioides.* J. Smith.

Kunze, in his "Index Filicum," enumerates—

*Cordifolia.* Presl.  
*Exaltata.* Schott.  
*Hirsutula.* Presl.  
*Intramarginalis.* Kunze.  
*Neglecta.* Kunze.  
*Pectinata.* Schott.

*Platyotis.* Kunze.  
*Sesquipedalis.* Presl.  
*Tuberosa.* Presl.  
*Undulata.* J. Smith.  
*Zollingeriana.* De Vriese.

Presl, in his "Tentamen Pteridographiæ," gives—

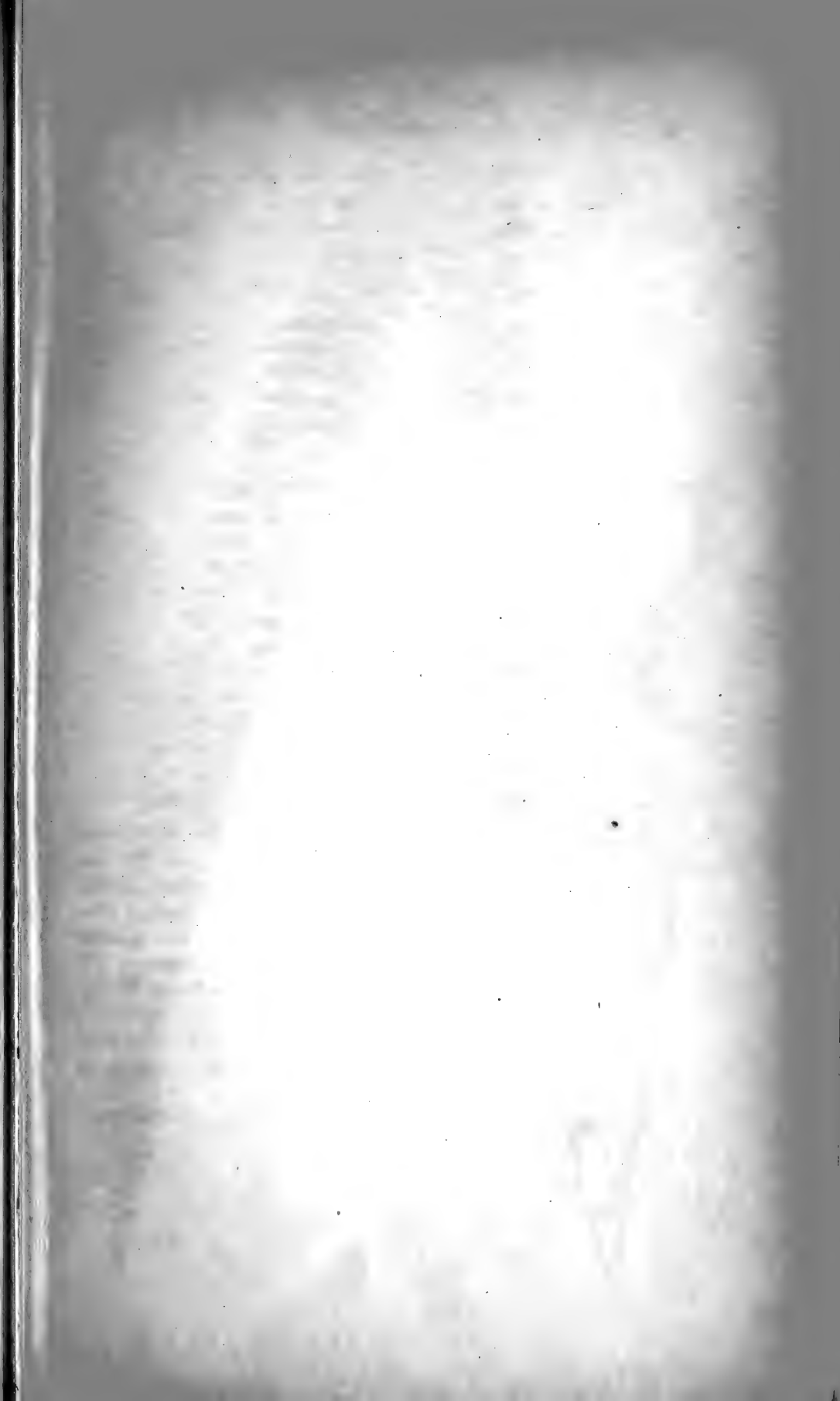
*Gaimardiana.* Presl.  
*Punctulata.* Presl.  
*Subcordata.* Presl.  
*Splendens.* Presl.  
*Ensifolia.* Presl.  
*Biserrata.* Schott.  
*Bidentata.* Presl.  
*Acuminata.* Presl.  
*Acuta.* Presl.  
*Hirsutula.* Presl.  
*Pilosa.* Presl.  
*Acutangula.* Presl.

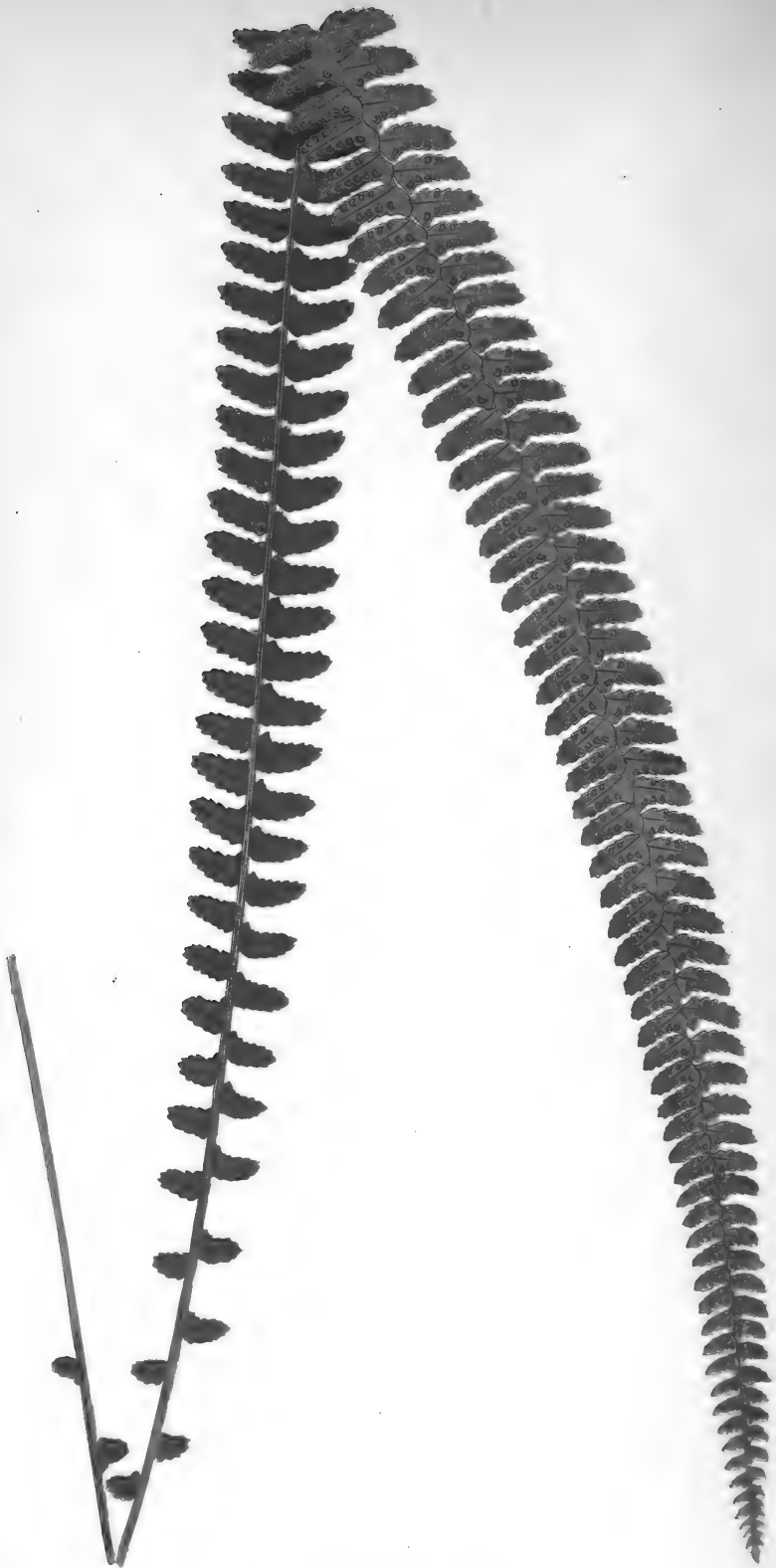
*Paraensis.* Presl.  
*Gibbosa.* Presl.  
*Sieberi.* Presl.  
*Cultrifolia.* Presl.  
*Sesquipedalis.* Presl.  
*Wallichiana.* Presl.  
*Cordifolia.* Presl.  
*Tuberosa.* Presl.  
*Exaltata.* Schott.  
*Imbricata.* Presl.  
*Pectinata.* Schott.  
*Obtusifolium.* Presl.

The present genus appears very distinct from all others; the long wiry rhizoma is a marked character, and from the rapidity with which the rhizoma grows, and the great number produced, this genus is perhaps more readily propagated than any other. It is easily cultivated, and when grown in wide shallow pans, a fine specimen may be speedily procured.

The species *Davallioides* is the most magnificent in the genus, and calls forth universal admiration; *Undulata* is a pretty Fern when successfully grown, whilst the well-known *Exaltata* and *Pectinata* are both worth careful cultivation as exhibition plants.

To grow these Ferns successfully, drain well, give abundance of pot-room, and a rich compost.









Portion of mature Frond—under side.

## NEPHROLEPIS PECTINATA.

SCHOTT. J. SMITH. KUNZE. PRESL.  
MOORE AND HOULSTON.

PLATE XVIII. VOL. VII.

<i>Nephrolepis Schkuhrii</i> ,	FEE.
<i>Aspidium pectinatum</i> ,	WILLDENOW. SPRENGEL.
“ <i>trapezoides</i> ,	SCHKUHR. ( <i>Not of SWARTZ.</i> )
“ <i>Schkuhrii</i> ,	LINK.
<i>Nephrodium Schkuhrii</i> ,	LINK.
“ <i>pectinatum</i> ,	LINK.

*Nephrolepis*—Kidney-scaled.

*Pectinata*—Comb-leaved.

AN elegant slender Fern, easily propagated, and when successfully grown making a magnificent exhibition plant; very easily cultivated.

An evergreen stove species.

Native of Brazil and the West Indies.

Introduced into the Royal Gardens, Kew, in the year 1841, having been received from the Royal Gardens, Berlin. It appears to have been known in some English Gardens, however, as early as 1820.

FronDS glabrous; pinnate, shape narrow linear-lanceolate; pinnæ alternate and crowded. There are from one hundred to one hundred and thirty pairs of pinnæ on each frond.

Oblong, imbricate; apex rounded; upper base auriculate, lower base truncate; coarsely dentate on the margin.

Veins forked; venules direct and free.

Sori circular, transversely uniserial, and attached to the apices of the venules; usually about six pairs on each pinna.

Fronds terminal and adherent, forming a fascicle on a thin wiry creeping rhizoma.

The rachis is fluted above, below it is entirely hid, owing to the basal portion of each pinna wrapping quite over it, and this gives the frond a singular and interesting appearance when viewed from beneath.

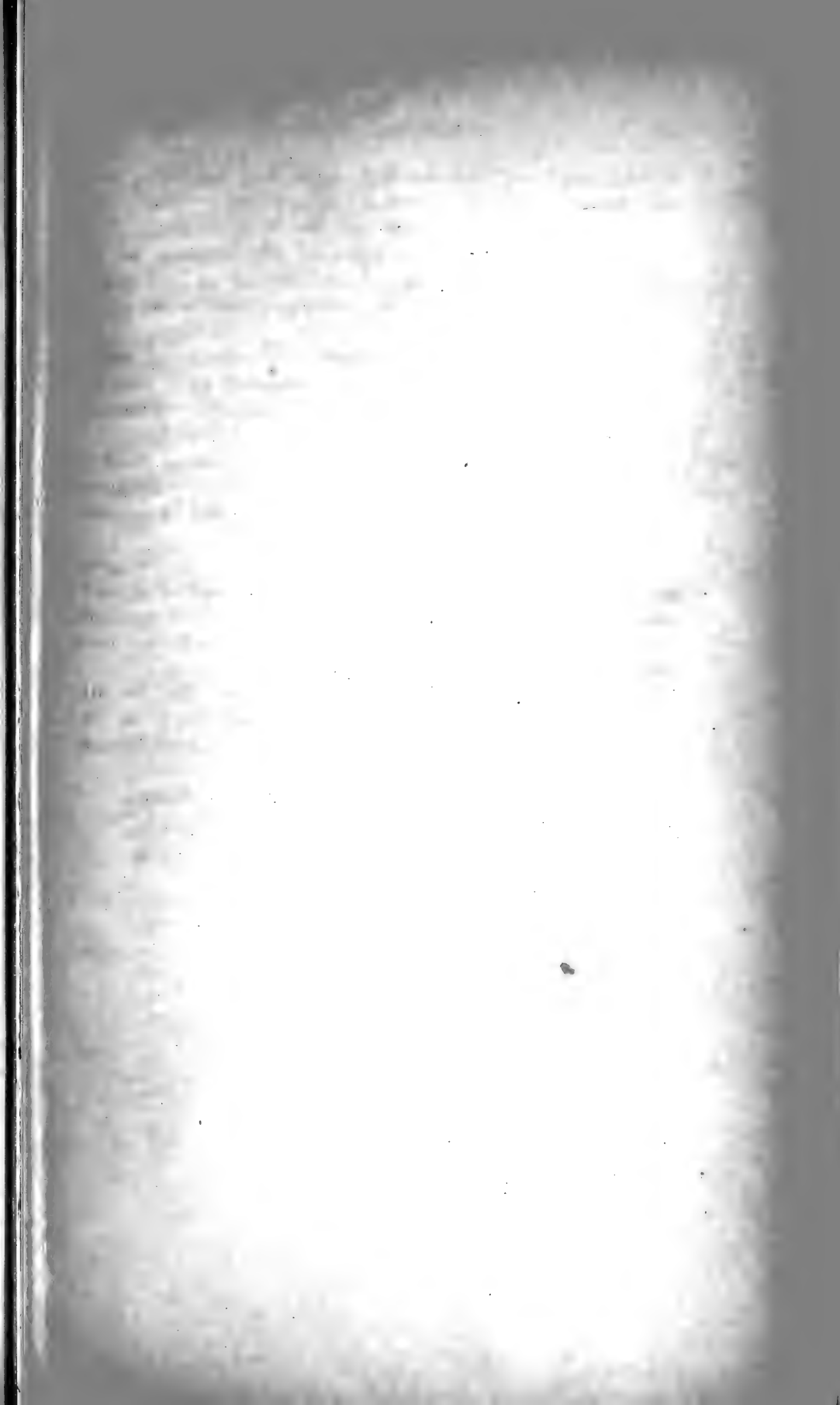
Length of frond from twelve to thirty-four inches, width of frond about equal throughout its length, except near the apex; average width from an inch to an inch and a quarter. Colour a yellowish green.

The different species of *Nephrolepis* are very readily propagated by divisions of the wiry rhizoma; indeed a well-established plant in a half-peck flower-pan will yield hundreds of plants in a few months. By pegging down each rhizoma a plant of almost any size may be obtained.

For a plant of this Fern my thanks are due to Mr. William Ingram, of Belvoir Castle, and for fronds to M. Schott, of the Imperial Gardens of Schonbrunn, near Vienna.

It is in all the Nurserymen's Catalogues.

The illustration is from a plant in my own collection.







Portion of mature Frond—under side.

## NEPHROLEPIS EXALTATA.

SCHOTT. J. SMITH. HOOKER. MOORE AND HOULSTON.  
KUNZE. PRESL. LIEBMAN. FEE.

PLATE XIX. VOL. VII.

<i>Polypodium exaltatum</i> ,	LINNÆUS. PLUMIER.
“ <i>rivulare</i> ,	VAHL.
<i>Aspidium exaltatum</i> ,	SWARTZ. SCHKUHR? RADDI?
“ “	KAULFUSS. SPRENGEL.
“ <i>eminens</i> ,	WICKSTR.
“ <i>ensifolium</i> ,	BLUME. (Not SWARTZ.)
“ <i>flagelliferum</i> ,	WALLICH.
“ <i>sublanosum</i> ,	WALLICH, IN PART.
<i>Nephrodium exaltatum</i> ,	LINK. BROWN.
“ “	HUMBOLDT AND BONPLAND.
<i>Nephrolepis commutata</i> ,	SCHOTT.

*Nephrolepis*—Kidney-scaled.

*Exaltata*—Lofty.

A WELL-KNOWN, commonly-cultivated, ornamental Fern.

An evergreen stove species.

Native of Jamaica, New Holland, Sandwich Islands, West Indies, South America, and Central America.

Introduced by Mr. Anderson into the Royal Gardens, Kew, in the year 1793.

Fronds glabrous, pinnate, linear-lanceolate, elongate, and slender. The pinnae sub-cordate and oblong-acute; the base on the upper side auriculate; margin serrate.

Rachis and stipes covered with narrow scales of a brown colour.

Sori circular, transversely uniserial, about twenty pairs on each pinna. Indusium reniform.

Veins forked; venules direct and free.

There are about a hundred and twenty pairs of pinnae on each frond.

Fronds terminal, and adherent in a fascicle to a creeping wiry rhizoma.

Length of frond from thirty-five to sixty inches, width from two to three inches; colour pale green.

For plants of this Fern my thanks are due to Mr. Pass, gardener to Mr. Brocklehurst, of The Fence, Macclesfield; to Mr. E. Cooling, Nurseryman, Derby; to Mr. Clarke, of the Royal Gardens, Glasgow; and to Mr. Lamb, gardener to Mr. F. Wright, of Osmaston Manor, near Ashbourne; and for fronds to M. Schott, of the Imperial Gardens of Schonbrunn, near Vienna.

It is in all the Nurserymen's Catalogues.

The illustration is from a plant in my own collection.

*[The text in this image is extremely faint and illegible due to low contrast and blurring. It appears to be a list or a series of entries, possibly names and dates, arranged in columns. The text is mostly illegible.]*







Portion of mature Frond--under side.

## NEPHROLEPIS UNDULATA.

J. SMITH. KUNZE. FEE.

PLATE XX. VOL. VII.

*Aspidium undulatum*,

SWARTZ. AFZELIUS. SPRENGEL.

*Nephrolepis*—Kidney-scaled.

*Undulata*—Wave-leaved.

A MORE dwarf species than the two preceding ones, and exceedingly handsome, especially when in fructification. It is not common in ordinary collections.

Native of West Africa—Sierra Leone.

Introduced by the Right Honourable the Earl of Derby into the Royal Gardens, Kew, in the year 1844.

Fronds glabrous and narrow-lanceolate in form; pinnate, the pinnæ being cordato-oblong-acuminate and sub-imbricate; margin crenate.

Sori circular and transversely uniserial.

Veins forked; venules direct and free.

Fronds terminal and adherent, forming a small fascicle on a wiry creeping rhizoma.

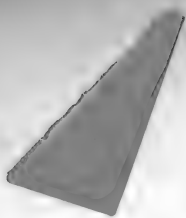
Tuberous rooted. Tubers are formed beneath the soil from which issue plants the following spring.

Length of frond twelve to twenty-two inches; colour pale green.

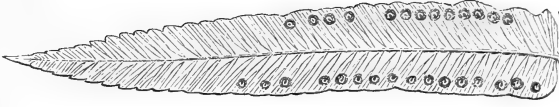
Mr. Henderson, of Wentworth, kindly forwarded a plant and fronds of this species, and Mr. Smith, of Kew, Mr. Norman, of Hull, and M. Schott, of Vienna, other fronds.

It is in the Catalogues of Messrs. Sim, of Foot's Cray; A. Henderson, of Pine-apple Place; and Cooling, of Derby.

The illustration is from a plant in my own collection.







Pinna of fertile Frond—under side.

## NEPHROLEPIS HIRSUTULA.

PRESL. J. SMITH. KUNZE. MOORE AND HOULSTON.

PLATE XXI. VOL. VII.

<i>Nephrolepis hirsutulum,</i>	LIEBMANN.
<i>Lepidonevron hirsutulum,</i>	FEE.
<i>Aspidium hirsutulum,</i>	SWARTZ. SCHKUHR.
“ <i>diversifolium,</i>	(Not of WALLICH or HAMILTON.)
“ <i>exaltatum,</i>	WALLICH?
	SPRENGEL. WALLICH, IN PART.
	(Not of SWARTZ, SCHKUHR,
	or RADDI.)
“ <i>pilosum,</i>	LANGSDORFF AND FISCHER.
“ <i>tomentosum,</i>	WILDENOW?
<i>Polypodium hirsutulum,</i>	FORSTER.
<i>Nephrodium hirsutulum,</i>	PRESL.

*Nephrolepis*—Kidney-scaled. *Hirsutulum*—Small-haired.

An interesting somewhat uncommon species.

An evergreen stove Fern.

Native of the East Indies, Java, Malacca, Mexico, and the Islands of the Pacific Ocean.

Introduced into England in 1823.

Fronds lanceolate in form, and pinnate; pinnæ oblong-acuminate and truncate, base in some degree auriculate; margin crenulate and serrate.

Veins forked; venules direct and free.

Sori circular, transversely uniserial, and situated near the margin of the frond.

Fronde in some degree erect in habit; terminal, and adherent in a fascicle to a slender creeping rhizoma.

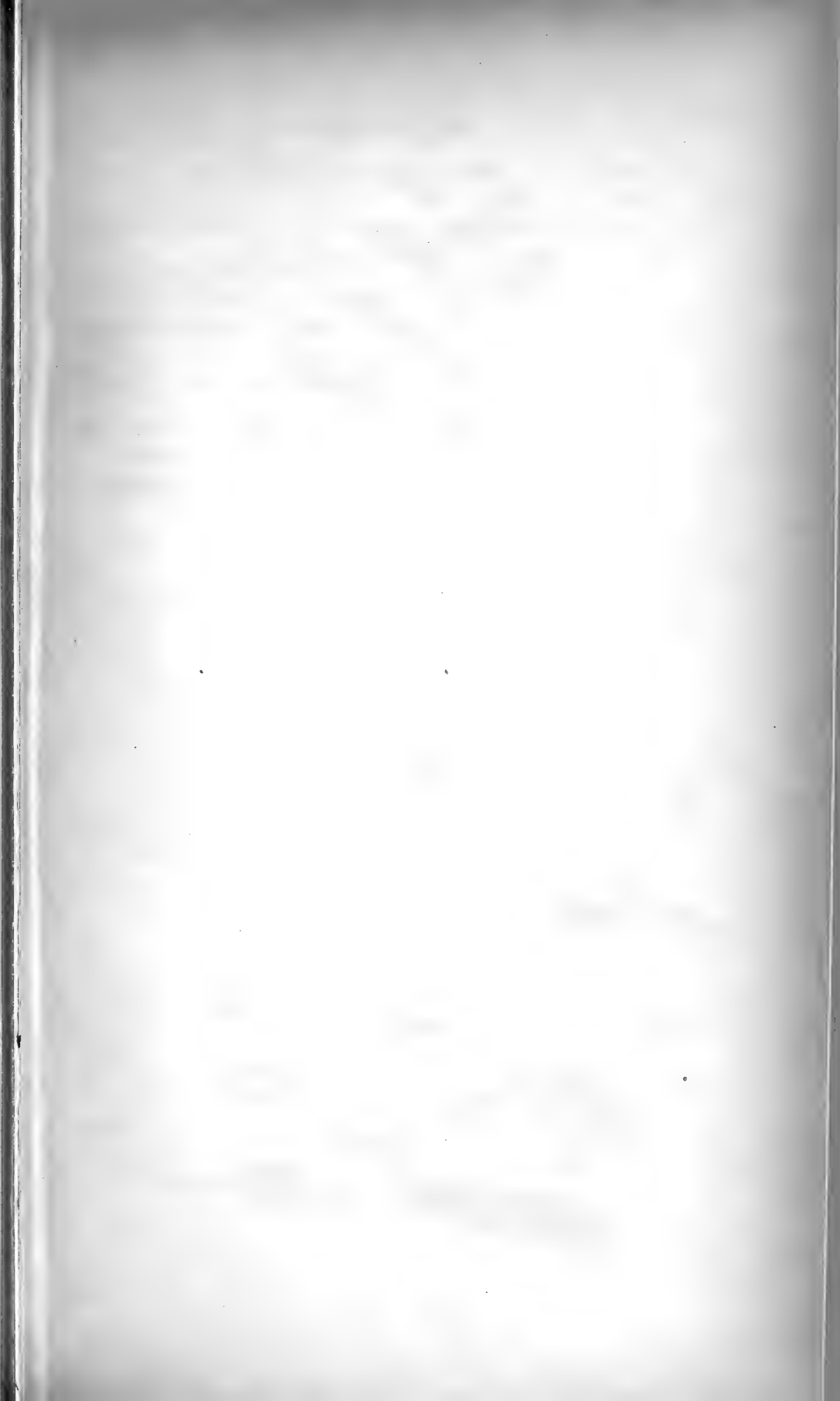
Length of frond from twenty-five to thirty-five inches; length of pinnæ from three to four inches. Colour dark green.

Fronde covered with small ferrugineous fimbriate hair-like scales.

Mr. Henderson, of Wentworth, forwarded to me a plant and fronds of this Fern.

It is in the Catalogues of Messrs. Veitch, of Chelsea; Sim, of Foot's Cray; and A. Henderson, of Pine-apple Place.

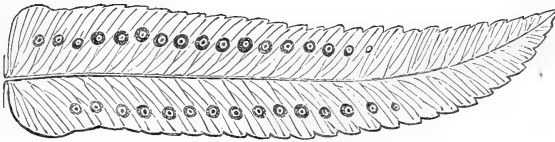
The illustration is from a frond sent by Mr. Henderson, of Wentworth.





NEPHROLEPIS ENSIFOLIA.





Pinna of fertile Frond—under side.

## NEPHROLEPIS ENSIFOLIA.

PRESL. J. SMITH.

PLATE XXII. VOL. VII.

<i>Aspidium ensifolium,</i>	SWARTZ. SCHUHR. ( <i>Not of BLUME.</i> )
“ <i>acuminatum,</i>	WILLDENOW. ( <i>Not of GARDENS.</i> )
“ <i>acutum,</i>	SWARTZ. SPRENGEL.
“ <i>longifolium,</i>	POHL? ( <i>Not of DESVAUX.</i> )
“ <i>punctulatum,</i>	SWARTZ. ( <i>Not of SIEBER.</i> )
“ <i>rufescens,</i>	SCHRADER, <i>a variety.</i> ( <i>Not of BLUME or KAULFUSS.</i> )
“ <i>multifidum,</i>	METTENIUS, <i>a variety.</i>
<i>Nephrodium platyotis,</i>	KUNZE. MOORE AND HOULSTON.
<i>Lepidonevron rufescens,</i>	FEE.
“ <i>acuminatum,</i>	FEE.
“ <i>punctulatum,</i>	FEE.
“ <i>longifolium,</i>	FEE.

*Nephrolepis*—Kidney-scaled.      *Ensifolia*—Sword-leaved.

A STRONG-GROWING and by no means common species; best known as the *Nephrolepis platyotis*.

An evergreen stove Fern.

Native of the East Indies, Java, and Tropical America.

Fronds pinnate; lanceolate in shape; pinnæ acuminate and truncate; base auriculate, margin crenately-serrate.

Veins forked; venules direct and free.

Sori uniserial and rounded-reniform.

Fronde terminal, and adherent in a fascicle to an exceedingly slender creeping rhizoma.

Rachis and stipes covered with woolly scales.

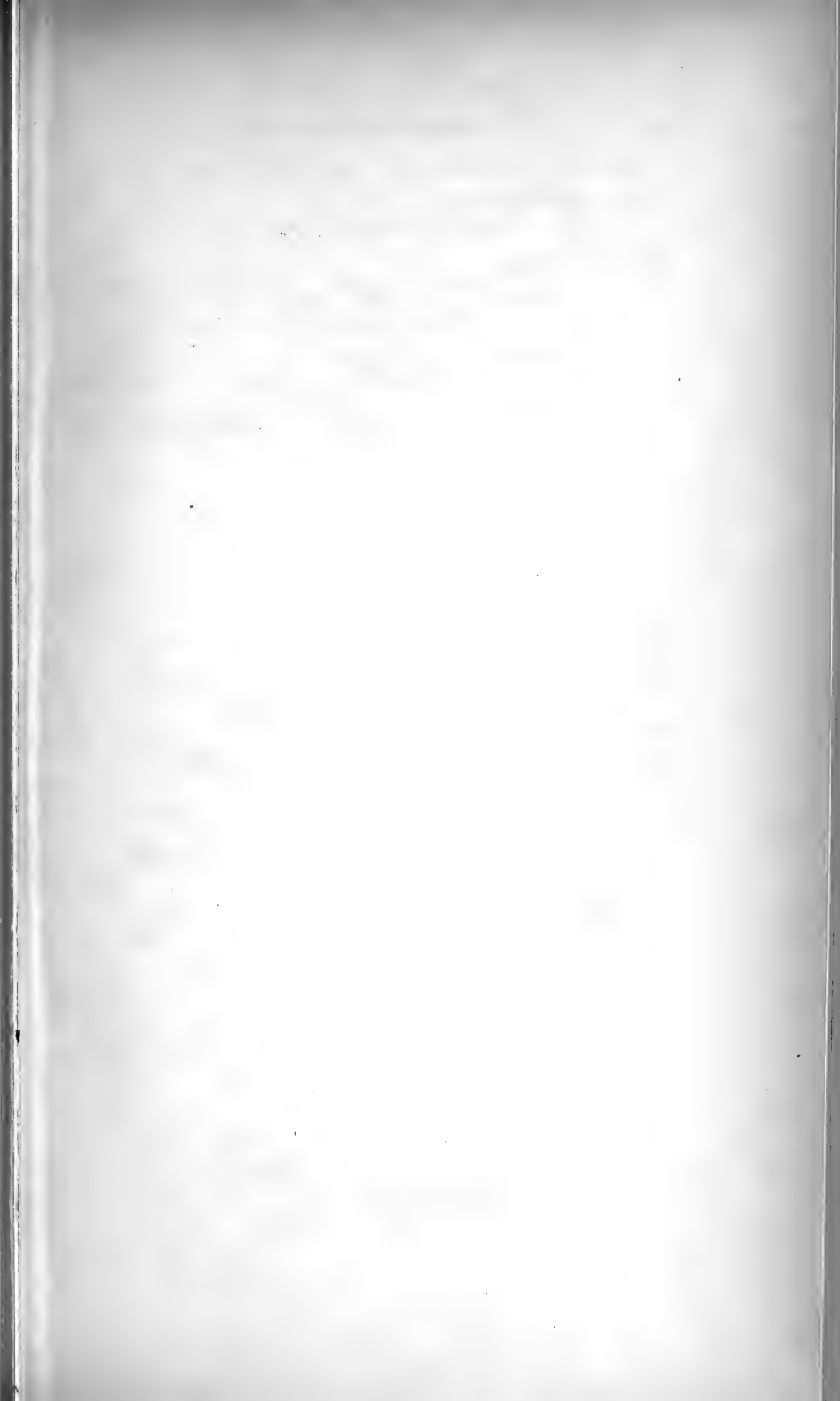
Fronde reclining.

Length of frond from thirty-six to forty-eight inches; length of pinnæ from four to five inches. Colour bright green.

For a plant and fronds of *N. platyotis* my thanks are due to Mr. Henderson, of Wentworth.

It is in the Catalogues of Messrs. Veitch, of Chelsea; Sim, of Foot's Cray; Booth, of Hamburg; and Cooling, of Derby.

The illustration is from a frond sent by Mr. Henderson, of Wentworth.



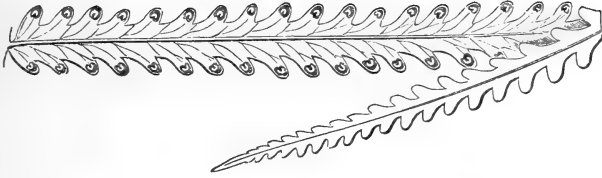


10. CLEPS JAVALLIOPSIS.

XVII 1927







Pinna of fertile Frond—under side.

## NEPHROLEPIS DAVALLIOIDES.

J. SMITH. MOORE.

PLATES XXIII AND XXIV. VOL. VII.

*Aspidium davallioides*,  
*Ophioglossum acuminatum*,

SWARTZ. HOOKER. SPRENGEL.  
HOULTUYN.

*Nephrolepis*—Kidney-scaled.

*Davallioides*—Davallia-like.

A MOST magnificent species, and worthy of being in every collection. A good specimen is a very handsome exhibition plant. An evergreen stove Fern.

Native of the Malayan Archipelago, East Indies, and Java.

Introduced into England in the year 1852, by Messrs. Rollisson, Nurserymen, Tooting.

Fronde glabrous and pinnate; the lower portion of pinnæ barren, lanceolate-acuminate in form, the edge obtusely serrate; the upper portion fertile, considerably narrower, and much elongated; profoundly crenato-lobate, the lobes being rounded and having a single sorus at the apex.

The barren pinnæ are about five inches long and three-quarters of an inch wide, whilst the fertile ones are ten inches long and not half an inch wide.

Rachis covered with small narrow scales, fluted above, rounded beneath; green above, and brownish beneath, especially near the base. Veins forked; venules direct and free.

Pinnæ, lower portion opposite or sub-opposite, upper portion mostly alternate. There are about sixty pairs of pinnæ on each frond.

Fronde pendant and very graceful. Pinnæ rather distant and horizontal.

Sori circular; about forty pairs on each pinna.

Indusium reniform, and situated immediately within the margin of the lobe.

Rhizoma wiry, creeping, and scaly, to which the fronds are adherent in fascicles.

Length of frond from thirty-five to fifty-five inches; colour bright green.

There is a very beautiful variety of this species, having its divisions deeply cut into lobes, as Mr. Sim remarks, much in the same way as the elegant varieties of *Polypodium vulgare*, (that is, *cambricum* and *semilacerum*.)

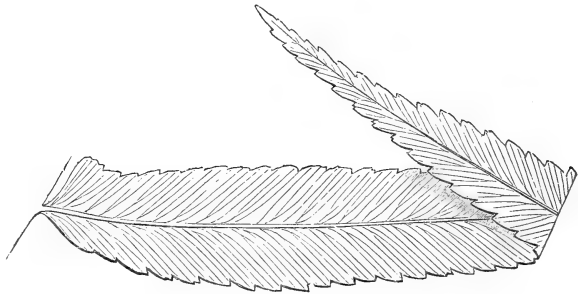
There are very few monstrosities, as they are termed, amongst the exotic Ferns, but as there is an increasing desire to cultivate our foreign species, no doubt ere long many interesting varieties will be added to our collections.

For a plant my thanks are due to Mr. Parker, of Holloway; and for fronds to Mr. Henderson, of Wentworth, and to Mr. Ingram, of the Royal Gardens, Windsor.

It is in the Catalogues of Messrs. Veitch, of Chelsea; Rollisson, of Tooting; Sim, of Foot's Cray; Jackson, of Kingston; Booth, of Hamburg; E. G. Henderson, of St. John's Wood; and Cooling, of Derby.

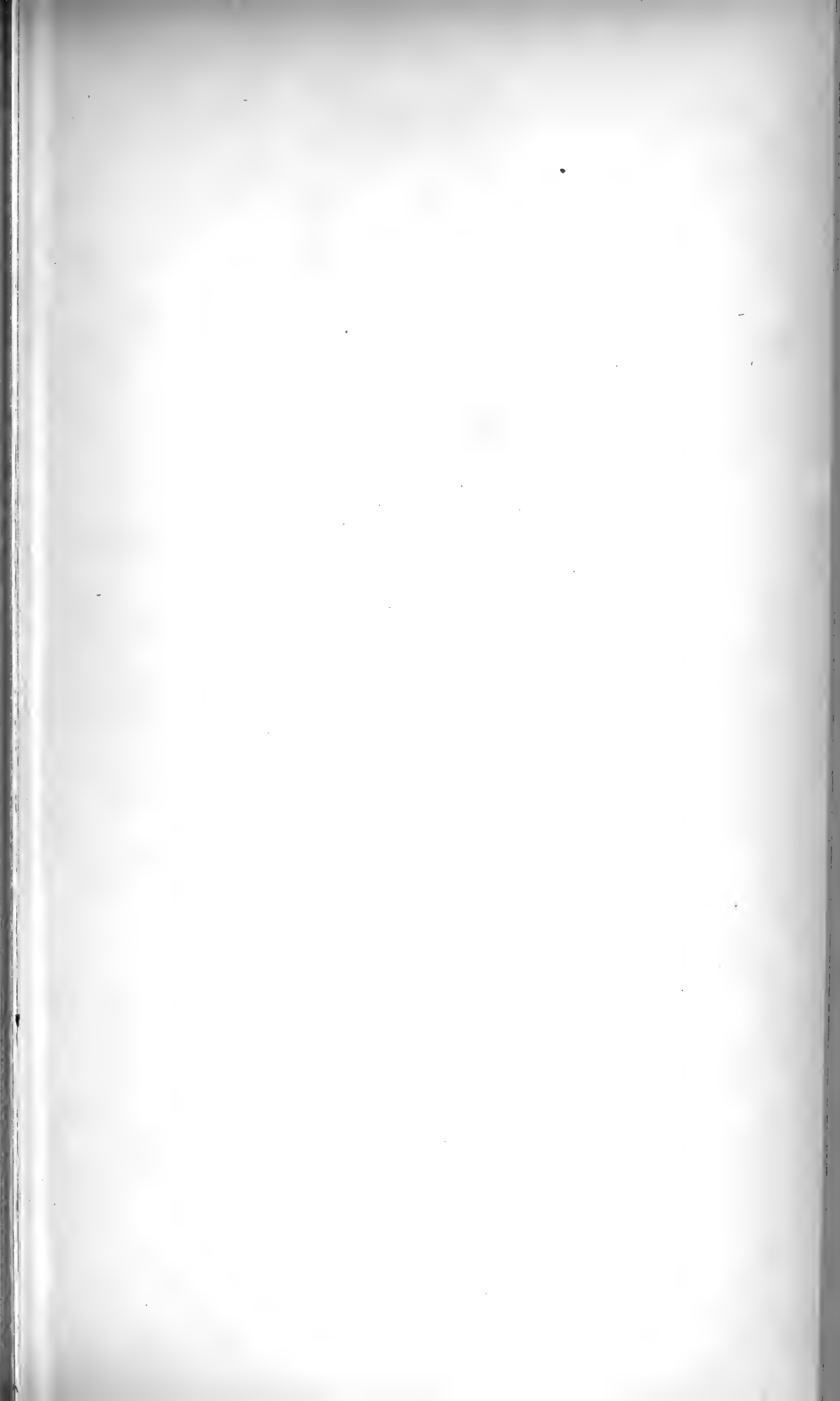
The variety is in Mr. Sim's Catalogue.

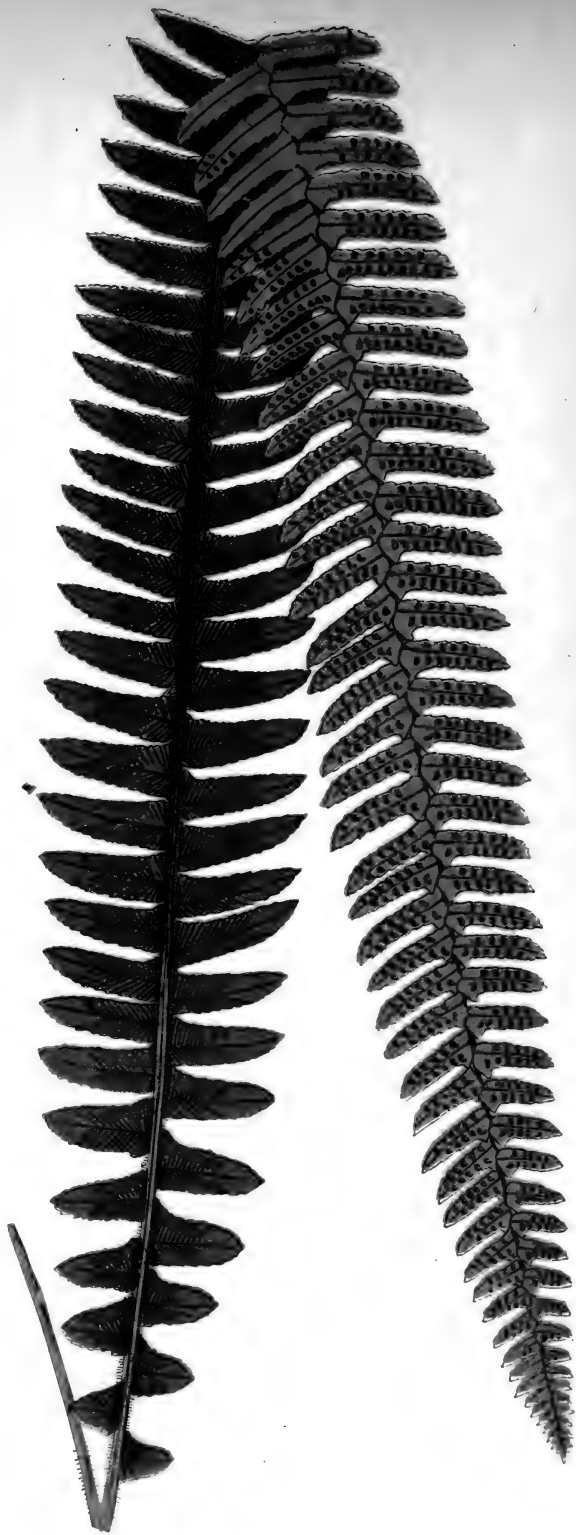
The illustration is from my own plant.



Pinna of barren Frond--upper side.







HYPEROLPIS TUBEROSA.



Portion of mature Frond—under side.

## NEPHROLEPIS TUBEROSA.

PRESL. J. SMITH. KUNZE. FEE. SCHOTT.

PLATE XXV. VOL. VII.

<i>Nephrodium edule,</i>	DON.
“ “ <i>tuberosum,</i>	LINK.
<i>Aspidium tuberosum,</i>	BORY. WILLDENOW. SPRENGEL.
“ “	MARTENS AND GALLEOTTI.
“ <i>auriculatum,</i>	WALLICH. ( <i>Not of SWARTZ,</i> SCHUHR, HOLL, or DON.)
“ <i>bulbosum,</i>	OF GARDENS. ( <i>Not of LINK.</i> )
“ <i>imbricatum,</i>	KAULFUSS.
“ <i>obtusifolium,</i>	WILLDENOW. ( <i>Not of MORITZ.</i> )
“ <i>pariense,</i>	WILLDENOW.
“ <i>sublanosum,</i>	WALLICH, IN PART.
“ <i>tavoyanum,</i>	WALLICH, <i>a variety.</i>
<i>Nephrolepis occidentalis,</i>	KUNZE. LIEBMANN.

*Nephrolepis*—Kidney-scaled.

*Tuberosa*—Tuberous-rooted.

ANOTHER handsome Fern bearing tubers on the roots, similar to *Nephrolepis undulata*, but the fronds do not die down in winter as with that species.

An evergreen stove Fern.

Native of the East Indies, Jamaica, and China.

Introduced into the Royal Gardens, Kew, in the year 1841, having been received from the Berlin Royal Gardens.

The fronds, which are pinnate, are slender, and of a narrow linear-lanceolate form. Pinnæ cordate-auriculate, oblong, and sub-imbricate; apex rounded; margin in some degree serrate.

Veins forked; venules direct and free.

Sori transversely uniserial, and circular. Indusium reniform.

Rachis and stipes covered with narrow hair-like scales.

Fronds terminal, forming a fascicle on a slender creeping rhizoma.

Length of frond from eighteen to twenty-four inches; colour deep green.

Mr. Henderson, of Wentworth, has sent a plant and fronds of this species, and M. Schott, of Vienna, other fronds.

It is in the Catalogues of Messrs. Sim, of Foot's Cray; Veitch, of Chelsea; Booth, of Hamburg; Kennedy, of Covent Garden; Masters, of Canterbury; Young, of Taunton; Stansfield, of Todmorden; and Cooling, of Derby.

The illustration is from Mr. Henderson's frond.

## GENUS X.

## WOODSIA. ROBERT BROWN.

A SMALL interesting family, chiefly confined to cold climates, growing in crevices of rocks. Dwarf Ferns.

England boasts of two species, the *Woodsia hyperborea* and *W. ilvensis*, and they rank among her rarest indigenous plants.

The name is in honour of J. Woods, an eminent British Botanist.

Kunze, in his "Index Filicum," enumerates—

*Woodsia glabella*, *Brown*.

" *hyperborea*, *Brown*.

" *ilvensis*, *Brown*.

*Physematium incisum*, *Kunze*.

" *molle*, *Kaulfuss*.

" *obtusum*, *Kunze*.

Presl, in his "Tentamen Pteridographiæ," gives—

*Physematium molle*, *Kaulfuss*.

" *Perrinianum*, *Presl*.

" *incisum*, *Presl*.

*Polypodium hyperboreum*, *Swartz*.

" *ilvense*, *Swartz*.

Fee, in his "Genres de la Famille des Polypodiacées," enumerates—

*Woodsia ilvensis*, *Brown*.

" *hyperborea*, *Brown*.

" *glabella*, *Brown*.

" *mollis*, *J. Smith*.

" *elongata*, *Hooker*.

" *Guatemalensis*, *Hooker*.

" *Peruviana*, *Hooker*.

" *Cumingiana*, *Fee*.

Woodsia Perriniana, *Hooker*.

“ incisa, *Gillies*.

Sir W. J. Hooker, in his “Species Filicum,” enumerates—

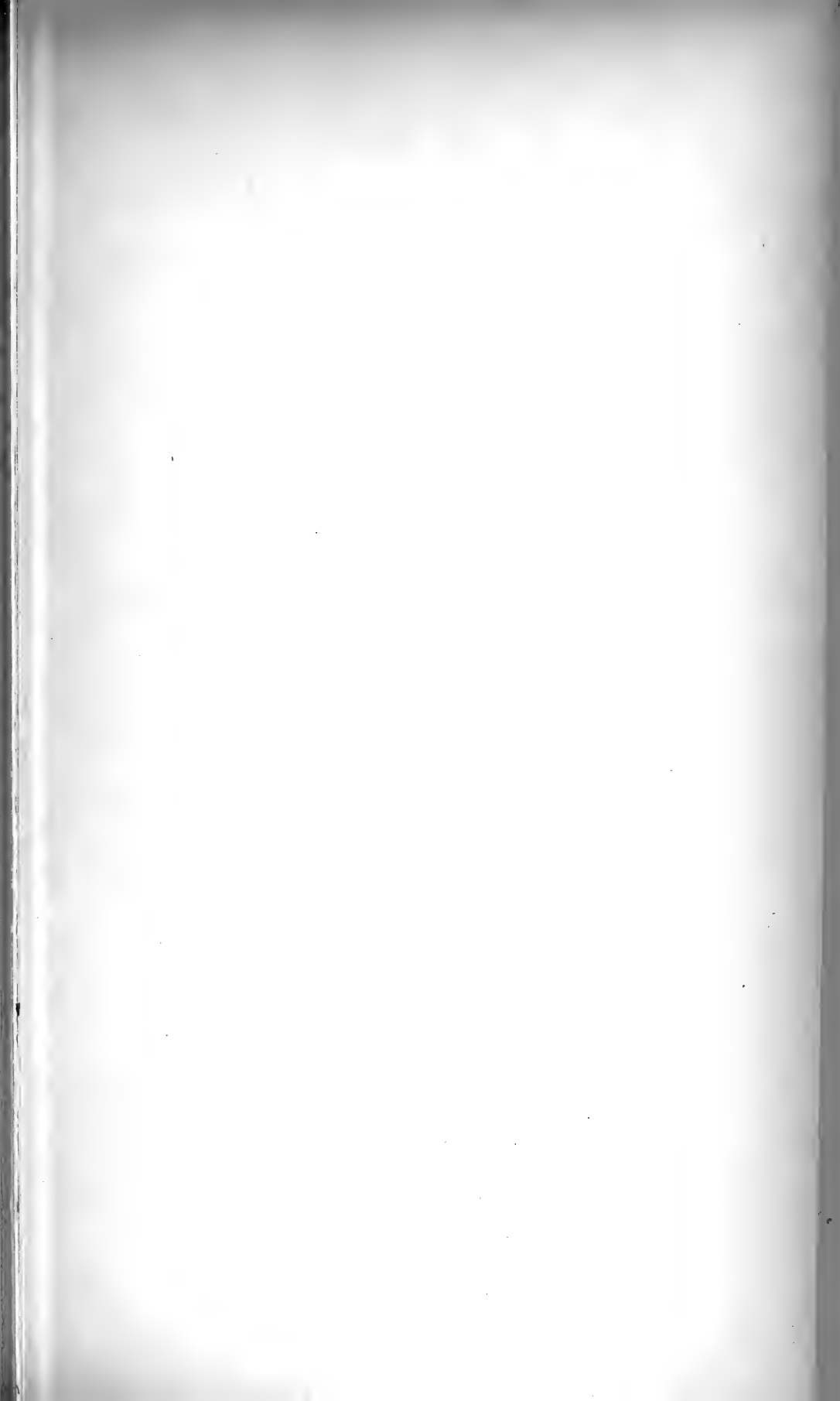
- Woodsia mollis, *J. Smith*. Mexico.  
 „ Guatemalensis, *Hooker*. Guatemala.  
 „ Peruviana, *Hooker*. Peru.  
 „ Cumingiana, *Kunze*. Chili.  
 „ Caucasica, *J. Smith*. Caucasus.  
 „ elongata, *Hooker*. Northern India.  
 „ obtusa, *Hooker*. North America.  
 „ incisa, *Gillies*. Argentine Republic.  
 „ ilvensis, *Brown*. England.  
 „ hyperborca, *Brown*. England.  
 „ glabella, *Brown*. Subarctic America.

Sori globose, and covered with a soft membranaceous indusium, more or less globose, covering the entire sorus, and eventually opening at the top.

Fronde membranaceous, small, pinnate, bipinnate, or subtripinnate.

Rhizoma tufted.

Veins simple, forked, or pinnate, from a central costa; venules free.





WOODSIA MOLLIS.

XXVI—VOL. 7.





Portion of mature Frond—under side.

## WOODSIA MOLLIS.

J. SMITH. HOOKER. LIEBMANN. FEE.

PLATE XXVI. VOL. VII.

*Physematium molle*,

“ “

*Aspidium bulbosum*,

*Woodsia Mexicana*,

KUNZE. KAULFUSS.

PRESL. SCHOTT.

LINK. (*Not of GARDENS.*)

BROWN. WALLICH.

*Woodsia*—After Woods, a well-known Botanist.

*Mollis*—Soft.

A SPECIES that flourishes well in English Gardens.

A deciduous hardy Fern.

Native of Mexico—in the temperate regions.

Introduced into the Royal Gardens, Kew, in 1841, having been received from the Royal Gardens of Berlin.

The fronds, which are lanceolate, are bipinnate and hairy; pinnæ oblong-lanceolate and somewhat blunt; pinnules oblong and sessile; apex rounded, margin crenate.

Sori sub-terminal.

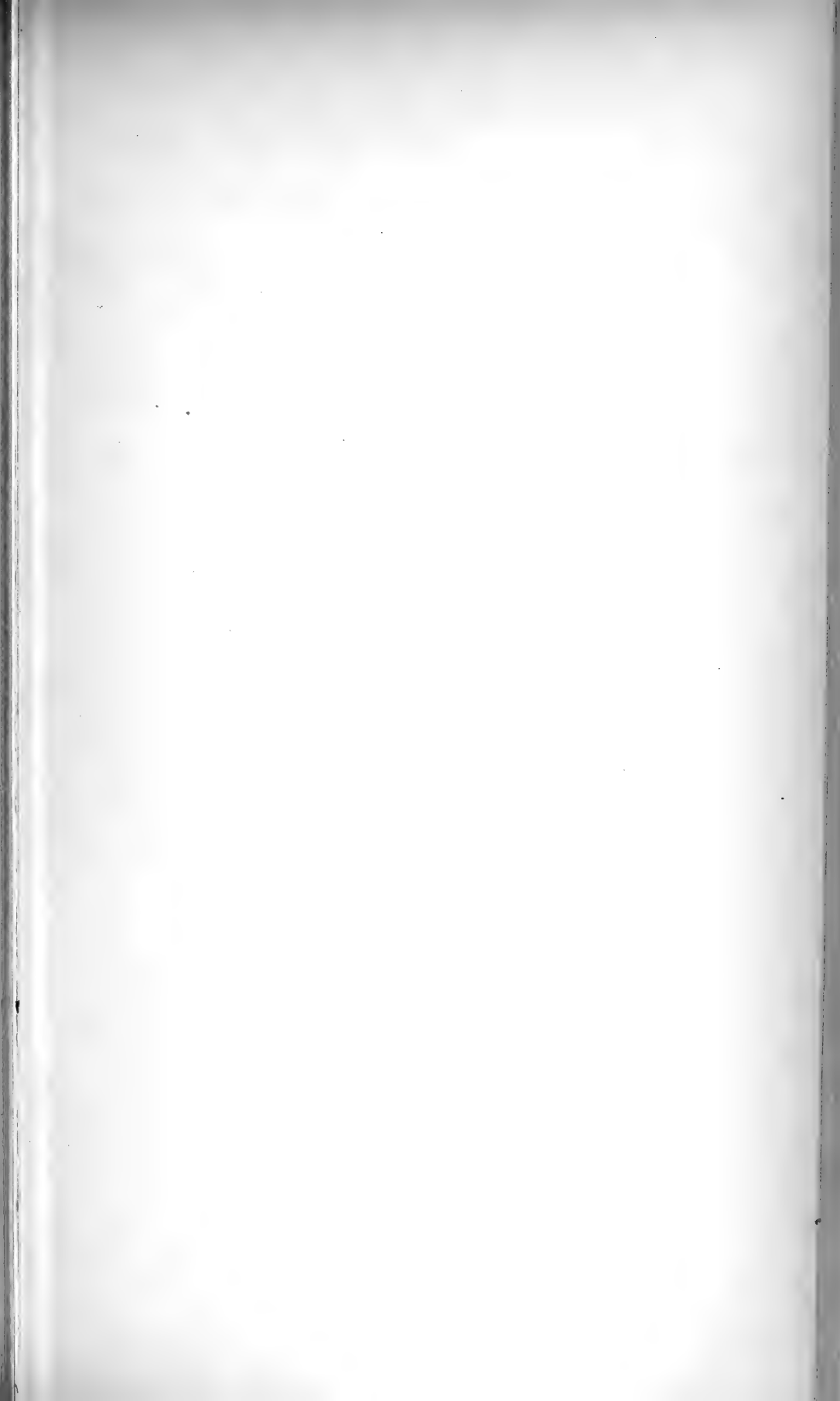
Indusium cup-shaped, hairy, and fringed on the margin.

Fronds terminal, and adherent to a somewhat tufted rhizoma.

Length of frond from twelve to eighteen inches; colour light green.

Mr. Joseph Henderson, of Wentworth, was good enough to send a plant of this species, and Mr. G. Norman, of Hull, fronds.

The illustration is from a plant in my own collection.





ADRIA. H. SP. 1800.  
C. VII. 1000.



A Plant, natural size, procured by Mr. Sidebotham.

## WOODSIA HYPERBOREA.

R. BROWN. HOOKER. ARNOTT. J. E. SMITH.  
 J. SMITH. RALFS. KUNZE. FEE. SPRENGEL.  
 MACREIGHT. SOWERBY.

PLATE XXVII. VOL. VII.

<i>Woodsia alpina</i> ,	GRAY. BOLTON. NEWMAN.
“ “	DEAKIN. MOORE.
“ <i>ilvensis</i> , var.,	BABINGTON.
<i>Polypodium ilvense</i> ,	WITHERING. HULL.
“ <i>Arvonicum</i> ,	J. SMITH. HULL.
“ <i>marantæ</i> ,	HOFFMANN.
“ <i>fontanum</i> ,	LINNÆUS.
“ <i>hyperboreum</i> ,	SWARTZ. PRESL.
“ “	WILDENOW. SCHKUHR.
<i>Acrostichum hyperboreum</i> ,	LILJEBLAD.
“ <i>ilvense</i> ,	HUDSON. DICKSON.
“ <i>alpinum</i> ,	BOLTON.
<i>Ceterach alpinum</i> ,	LAMARCK. DE CANDOLLE.

*Woodsia*—After Woods, a well-known Botanist.  
Northern.

*Hyperborea*—

THE Round-leaved *Woodsia* is a very rare indigenous species, growing in crevices of rocks.

A deciduous half-hardy Fern in cultivation.

Found only on Snowdon, Crieff, Ben Lawers, Clova Mountains, Mountains of Perthshire, Ben Chonzie, Craig Challiach, Maeldun Crosk, Glen Fiadh, and on Moffat Hills.

It is a native of Wales, Scotland, Norway, Sweden, Russia, Lapland, Switzerland, Hungary, Germany, France, Spain, Siberia, Kalu, (in the Punjab,) Himalaya, Mountains of Massachusetts at Saskatchewan, Rocky Mountains, Great Bear Lake, and Davis' Straits.

Introduced into the Royal Gardens, Kew, in the year 1793.

Fronds membranaceous, narrow-lanceolate, pinnate, and slightly scaly beneath; pinnæ triangular and pinnatifid; base in a slight degree cordate, with rounded-obtuse segments; pinnæ usually alternate. Sori circular, medial, and eventually confluent.

Indusium deeply lacinated, and ending in capillary-articulated segments.

Stipes articulated near the centre.

Fronds adherent to a somewhat tufted rhizoma.

Length of frond from two to six inches; colour dull green.

Stipes and rachis slightly hairy. Stipes pale reddish brown in colour.

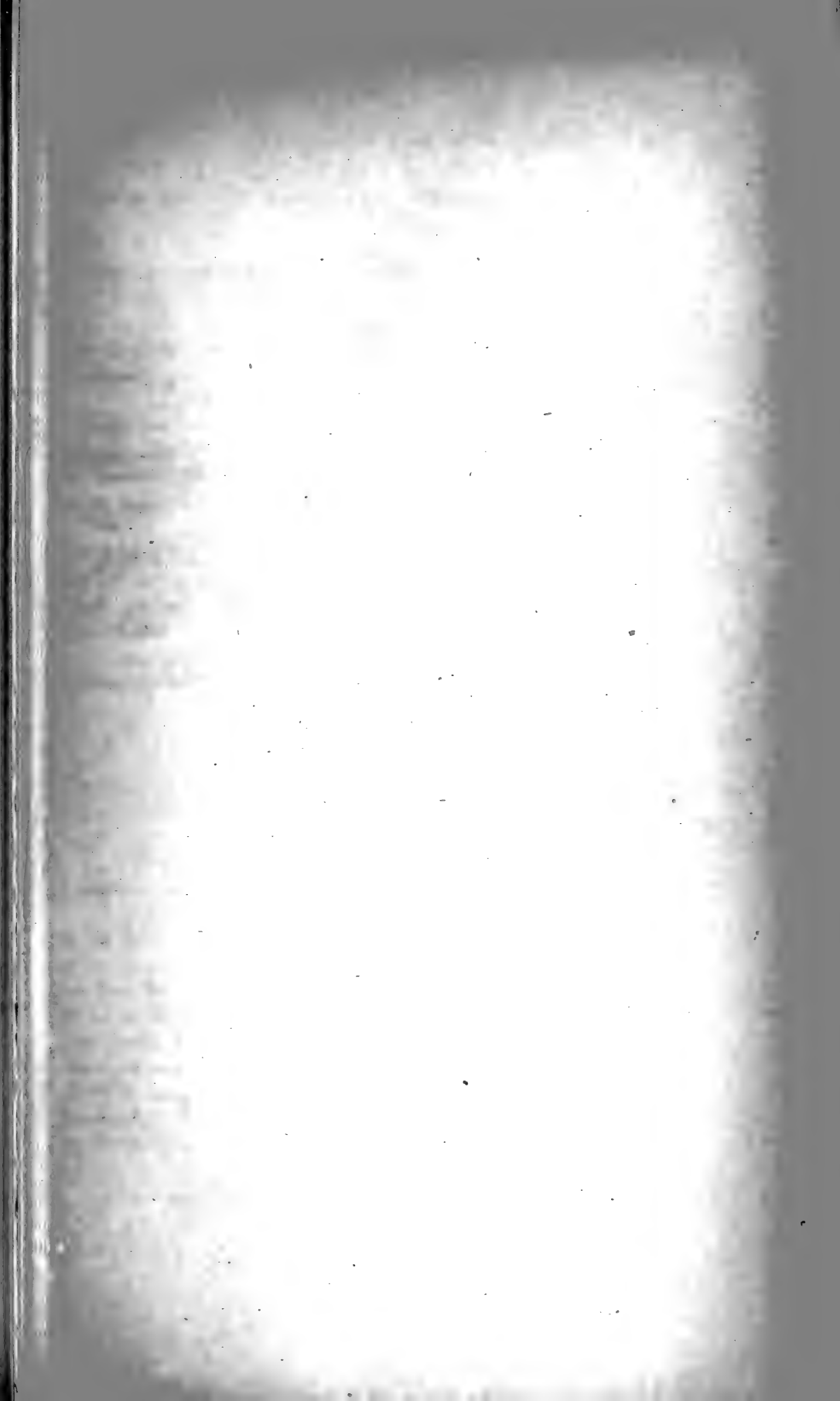
Pinnæ below distant, above crowded.

Veins branched, terminating within the margin in a slightly thickened apex.

To cultivate *Woodsia ilvensis* and *W. hyperborea*, it is requisite to give them a damp cool atmosphere, such as a cold frame with a north aspect; drain the pots well and do not over-pot. Small pieces of freestone round the plants is an advantage. Although the plants delight in a damp atmosphere improper drainage and sunshine are alike destructive to them.

For plants my thanks are due to Mr. G. Norman, of Hull, and Mr. Sim, of Foot's Cray; and for fronds to Professor Balfour, of Edinburgh, and to Mr. Joseph Sidebotham, of Manchester.

The illustration is from Professor Balfour's fronds.





*Asa diversis.*  
Willd.





A Welsh plant, natural size, found by Mr. Sidebotham.

WOODSIA ILVENSIS.

R. BROWN. J. E. SMITH. J. SMITH. MOORE.  
 KUNZE. HOOKER. ARNOTT. MACREIGHT. KAULFUSS.  
 PURSH. NUTTALL. FEE. SPRENGEL. BABINGTON.  
 RALFS. DEAKIN. NEWMAN.

PLATE XXVIII. VOL. VII.

<i>Woodsia vestita</i> ,	SPRENGEL. MICHAUX. SWARTZ.
“ <i>Raiana</i> ,	NEWMAN.
“ <i>rufidula</i> ,	BECK.
<i>Acrostichum ilvense</i> ,	LINNÆUS. EHRHART. BOLTON.
“ <i>marantæ</i> ,	HENKE.
<i>Polypodium marantæ</i> ,	HOFFMANN.
“ <i>arvonicum</i> ,	WITHERING.
“ <i>ilvense</i> ,	VILLARS. SWARTZ. SCHKUH.R.
“ “	PRESL. WILLDENOW. SADLER.
“ “	WAHLENBERG. LAPEYROUSE.
<i>Aspidium distans</i> ,	VIVIANI.
“ <i>rufidulum</i> ,	SWARTZ. SPRENGEL. NUTTALL.
“ “	WILLDENOW. PURSH.

<i>Nephrodium rufidulum,</i>	MICHAUX.
“ <i>lamosum,</i>	MICHAUX.
<i>Lastrea rufidula,</i>	PRESL.
<i>Lonchitis aspera ilvensis,</i>	DALECHAMPS.

*Woodsia*—After Woods, a well-known Botanist.

*Ilvensis*—Ilva.

THE Oblong *Woodsia* is a beautiful dwarf indigenous species, growing in crevices of rocks, and very rare in Great Britain.

A deciduous half-hardy species under cultivation.

Introduced into the Royal Gardens, Kew, in the year 1791.

Found only on Glyder Fawr, North Wales, Falconclints, in Teesdale, Moffat, and on the Clova Mountains, Stirling, Ben Lawers, Forres, Dumfries, Pebbles, and Selkirk; Westmorland, Bowness, in Cumberland, and on Snowdon.

Abroad it is found in Iceland, Greenland, Lapland, Sweden, Norway, Russia, Spain, Italy, Siberia, Altai Mountains and Lake Baikal, Germany, Kamtschatka, Saskatchewan, Rocky Mountains, Canada, and the United States.

The fronds, which are lanceolate, are pinnate and hairy, more especially beneath; pinnæ oblong and profoundly pinnatifid, with oblong-obtuse, sometimes crenated lobes.

Sori circular and sub-terminal.

Indusium deeply lacinated and ending in jointed hairs.

Stipes articulated considerably above the rhizoma; stipes and rachis chaffy. Rhizoma in some degree tufted.

Length of frond from three to six inches; colour pale whitish green.

Stipes pale reddish brown, from one to two inches long.

Pinnæ sometimes opposite, and sometimes alternate.

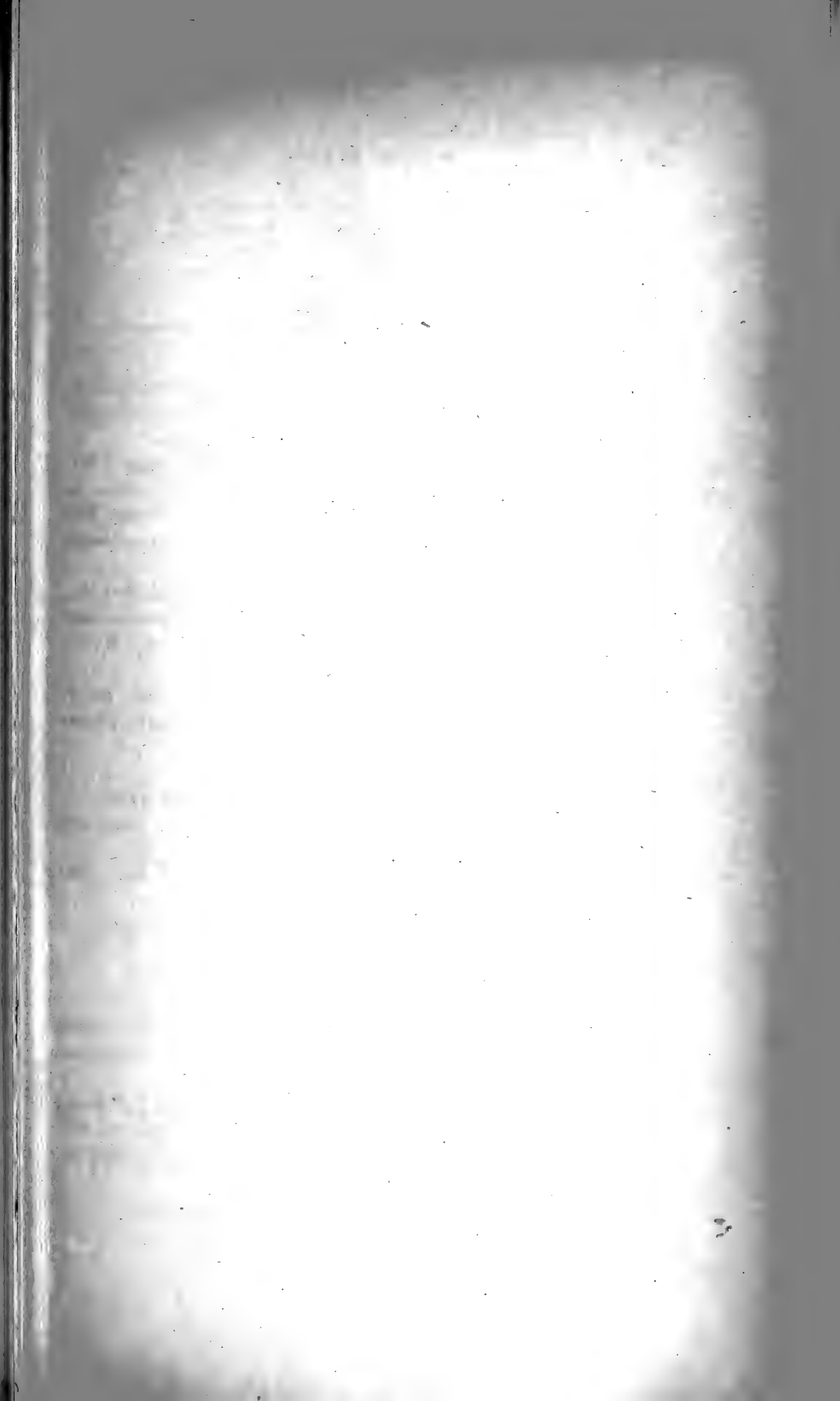
Lobes more numerous than in *Woodsia hyperborea*.

Veins branched.

*W. ilvensis* is broader than *W. hyperborea*, and the pinnæ more oblong; it can also be recognised by its under surface being very scaly.

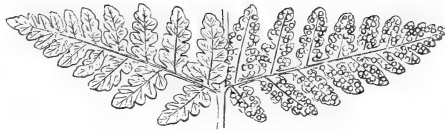
For plants my thanks are due to Mr. Backhouse, of York, and to Mr. Pearson, of Chilwell; and for fronds to Mr. Joseph Sidebotham, of Manchester, and to Professor Balfour, of Edinburgh.

The illustration is from Professor Balfour's fronds.





WOODSIA OBTUSA.



Portion of mature Frond—under side.

## WOODSIA OBTUSA.

HOOKER. J. SMITH. MOORE AND HOULSTON.

PLATE XXIX. VOL. VII.

<i>Polypodium obtusum</i> ,	SWARTZ. SCHKUHR.
“ <i>Perriniana</i> ,	SCHKUHR.
<i>Woodsia Perriniana</i> ,	HOOKER AND GREVILLE. FEE.
<i>Aspidium obtusum</i> ,	WILLDENOW. SCHKUHR.
“ “	WEBB AND MOHR. ( <i>Not of KUNZE.</i> )
<i>Physematium obtusum</i> ,	KUNZE? HOOKER.
“ <i>Perrinianum</i> ,	KUNZE. PRESL.
<i>Cystopteris obtusa</i> ,	PRESL.
“ <i>albescens</i> ,	LINK.
<i>Alsophila Perriniana</i> ,	SPRENGEL.

*Woodsia*—After Woods, a well-known Botanist.

*Obtusa*—Blunt.

A PRETTY hardy species, distinct and well-defined in its characters.

A deciduous Fern.

Native of the United States, Pennsylvania, Virginia, Kentucky, and the Rocky Mountains.

Cultivated in the Royal Gardens, Kew, in 1836.

The fronds, which are lanceolate, are sub-tripinnate, clothed beneath with glandulous hairs; the pinnæ are triangularly elongate; the pinnules oblong, rounded at the apex, and crenate on the margin.

Sori terminal.

Indusium profoundly lacinated.

Fronds terminal, and adherent to a somewhat tufted rhizoma.

Length of frond twelve inches; colour yellowish green.

Mr. Henderson, of Wentworth, has been kind enough to send me a plant, and Mr. G. Norman, of Hull, fronds.

The illustration is from a plant in my own collection.

## GENUS XI.

## CYSTOPTERIS. BERNHARDI.

AN interesting, dwarf, elegant, small tribe, with membranaceous-herbaceous fronds.

The sori medial and covered by an indusium, which is attached by its broad base.

The veins are simple, forked, or pinnate, from a central costa; the venules being free.

Fronds much divided.

Rhizoma tufted, decumbent, or creeping.

This small genus is a native of the temperate or cold climates, the fronds dying down in winter.

England boasts of possessing nearly the whole of the species, namely:—*Cystopteris fragilis*, *angustifolia*, (var. of *fragilis*,) *regia*, *montana*, *Dickieana*, and *dentata*, (var. of *fragilis*.)

The name is derived from the Greek, and signifies a Bladder Fern, in allusion to the inflated indusia.

The fronds vary from three to eighteen inches in length.

Mr. Moore, in "The Genera and Species of Cultivated Ferns," enumerates—

Fragilis. <i>Bernhardi</i> .	Alpina. <i>Desvaux</i> .
Dentata. <i>Hooker</i> .	Tenuis. <i>Schott</i> .
Dickieana. <i>Sim</i> .	Montana. <i>Link</i> .
Bulbifera. <i>Bernhardi</i> .	

Also, in his "Index Filicum,"—

Fragilis. <i>Bernhardi</i> .	Douglasii. <i>Hooker</i> .
Regia. <i>Desvaux</i> .	Tenuis. <i>Desvaux</i> .
Bulbifera. <i>Bernhardi</i> .	Montana. <i>Bernhardi</i> .

Mr. Moore considers *alpina* and *regia* as forms of the same Fern, and *fragilis*, *angustata*, *dentata*, and *Dickieana*, as all forms of *fragilis*.

In the present work *angustata* and *dentata* are included as varieties of *fragilis*, whilst *Dickieana* is kept distinct.

Mr. Smith, in his "Catalogue of the Ferns Cultivated at Kew," gives the following:—

Tenuis. <i>Schott.</i>	Regia. <i>Presl.</i>
Bulbifera. <i>Bernhardi.</i>	Montana. <i>Link.</i>
Fragilis. <i>Bernhardi.</i>	

Kunze, in his "Index Filicum," enumerates—

Bulbifera. <i>Bernhardi.</i>	Regia. <i>Presl.</i>
Fragilis. <i>Bernhardi.</i>	Tenuis. <i>Schott.</i>
Montana. <i>Link.</i>	

Presl, in his "Tentamen Pteridographiæ," describes—

Obtusa. <i>Presl.?</i>	Alpina. <i>Link.</i>
Obovata. <i>Presl.?</i>	Dentata. <i>Hooker.</i>
Atomaria. <i>Presl.</i>	Regia. <i>Presl.</i>
Emarginulata. <i>Presl.</i>	Leptophylla. <i>Presl.?</i>
Atrovirescens. <i>Presl.</i>	Tenuis. <i>Schott.</i>
Fumarioides. <i>Schott.</i>	Fragilis. <i>Bernhardi.</i>
Bulbifera. <i>Bernhardi.</i>	Vestita. <i>Presl.?</i>
Odorata. <i>Presl.?</i>	Montana. <i>Link.</i>
Brasiliana. <i>Presl.</i>	Canariensis. <i>Presl.</i>
Gigantea. <i>Presl.?</i>	Comosa. <i>Presl.?</i>
Aspidioides. <i>Presl.</i>	

? Not species of *Woodsia*.

Hooker in his "Species Filicum," describes—

- Fragilis, *Bernhardi.* England.
- Alpina, *Desvauz.* England.
- Tasmanica, *Hooker.* Van Dieman's Land.
- Bulbifera, *Bernhardi.* North America.
- Montana, *Link.* England.
- Crenata, *Fries.* Sweden.
- Douglasii, *Hooker.* Sandwich Islands.
- Albescens, *Link.* Iceland.
- Squamata, *Decaisne.* Cashmere.

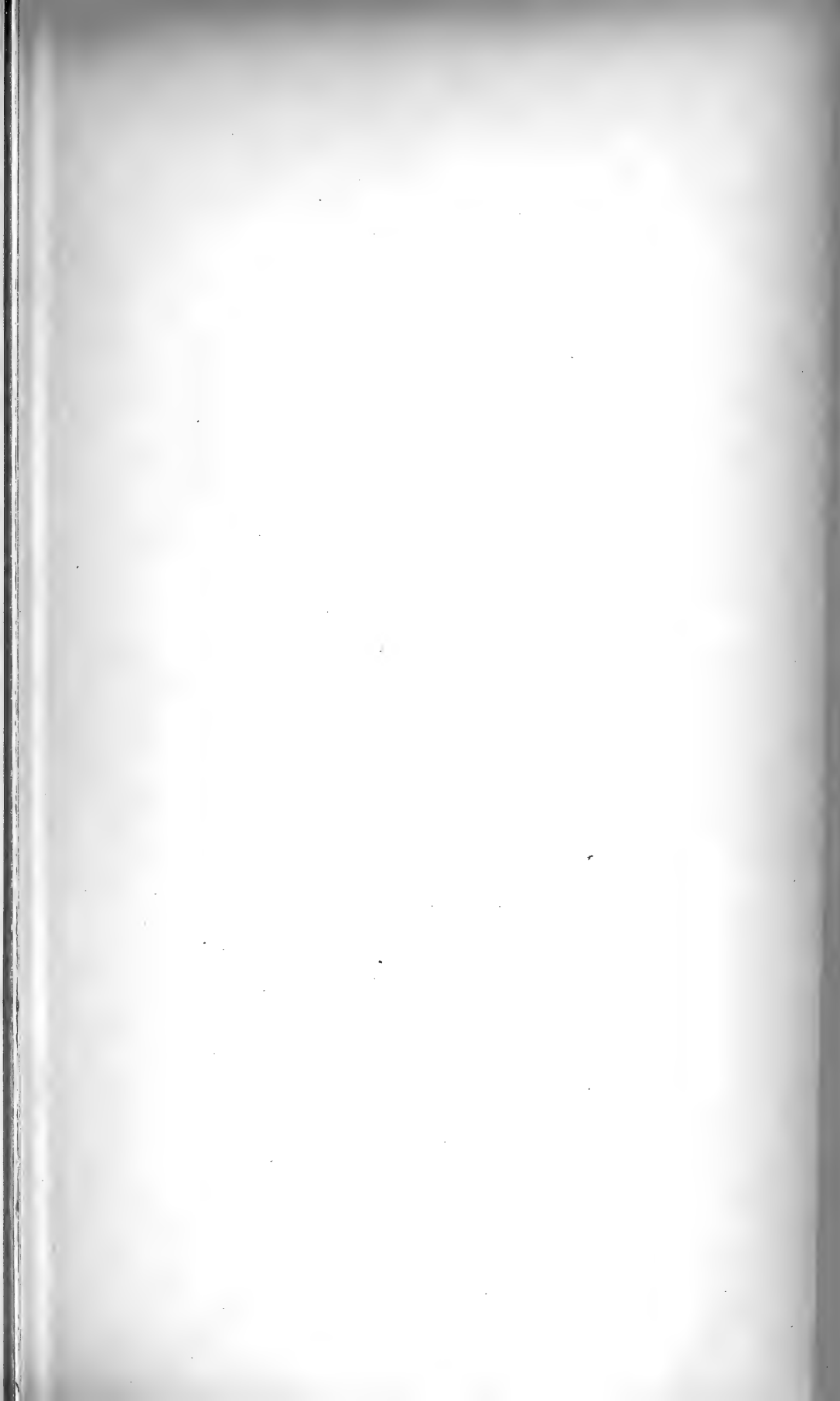


Of the species enumerated by Sir W. Hooker, *crenata*, *Douglasii*, *albescens*, *squamata*, and *Tasmania*, are not yet cultivated in England.

Sir W. Hooker remarks on the doubtful species—

- Cystopteris obtusa*, *Presl*, is *Woodsia obtusa*, *Hooker*.  
 “ *obovata*, *Presl*, is *Asplenium obovatum*, *Viviani*.  
 “ *atomaria*, *Presl*, is *Cystopteris fragilis*, *Muhlenberg*.  
 “ *emarginata*, *Presl*, name only known.  
 “ *leptophylla*, *Presl*, *Cystopteris fragilis*.  
 “ *atrovirescens*, *Presl*, name only known.  
 “ *vestita*, *Presl*, is *Woodsia incisa*, *Gillies*.  
 “ *odorata*, *Presl*, is a *Lastrea*.  
 “ *Brasiliana*, *Presl*, name only known.  
 “ *gigantea*, *Presl*, is *Diacalpe aspidioides*, *Blume*.  
 “ *comosa*, *Presl*, is *Alsophila comosa*, *Hooker*.  
 “ *aspidioides*, *Presl*, name only known.







CYPERUS TENIS DC. & A.

XXX—Vol. 7.



Portion of mature Frond—under side.

## CYSTOPTERIS REGIA.

PRESL. J. SMITH. MOORE. KUNZE. KOCH.

PLATE XXX. VOL. VII.

<i>Polypodium regium</i> ,	LINNEUS.
“ <i>polymorphum</i> ,	VILLARS.
“ <i>alpinum</i> ,	JACQUIN. WULFEN.
“ <i>album</i> ,	LAMARCK.
“ <i>crispum</i> ,	GOUAN.
<i>Cystea regia</i> ,	J. E. SMITH.
“ <i>incisa</i> ,	J. E. SMITH.
“ <i>alpina</i> ,	J. E. SMITH.
<i>Aspidium regium</i> ,	SWARTZ. WILLDENOW.
“ <i>trifidum</i> ,	SWARTZ.
“ <i>alpinum</i> ,	SWARTZ. SCHKUH. WILLDENOW.
“ <i>taygetense</i> ,	BORY AND CHAMB.
<i>Cystopteris alpina</i> ,	DESVAUX. LINDLEY AND MOORE.
“ “	LINK. HOOKER AND ARNOTT.
“ “	BABINGTON. SOWERBY.
“ “ <i>var. regia</i> ,	LINK.
<i>Cyathea incisa</i> ,	J. E. SMITH.
“ <i>regia</i> ,	FORSTER. SMITH.
“ <i>alpina</i> ,	J. E. SMITH.
<i>Athyrium alpinum</i> ,	SPRENGEL.
“ <i>regium</i> ,	GRAY.
<i>Cyclopteris regia</i> ,	GRAY.

*Cystopteris*—Bladder Fern.

*Regia*—Royal.

THE Royal or Alpine Bladder Fern is a very handsome dwarf indigenous species.

A deciduous hardy Fern, growing on walls.

Only found at Low Leyton, in Essex.

Native of Switzerland—on the Alps, in the Pyrenees—on Mount Taygetos and Mount Taurus.

Introduced into the Royal Gardens, Kew, in 1793.

The fronds, which are herbaceous, are lanceolate, sub-tribipinnate, smooth, and erect; pinnæ ovate and unequal; pinnules ovate and profoundly pinnatifid, with linear-oblong lobes.

Veins branching.

Stipes one-third the length of the frond. Rachis winged above.

Fructification covering the back of the frond.

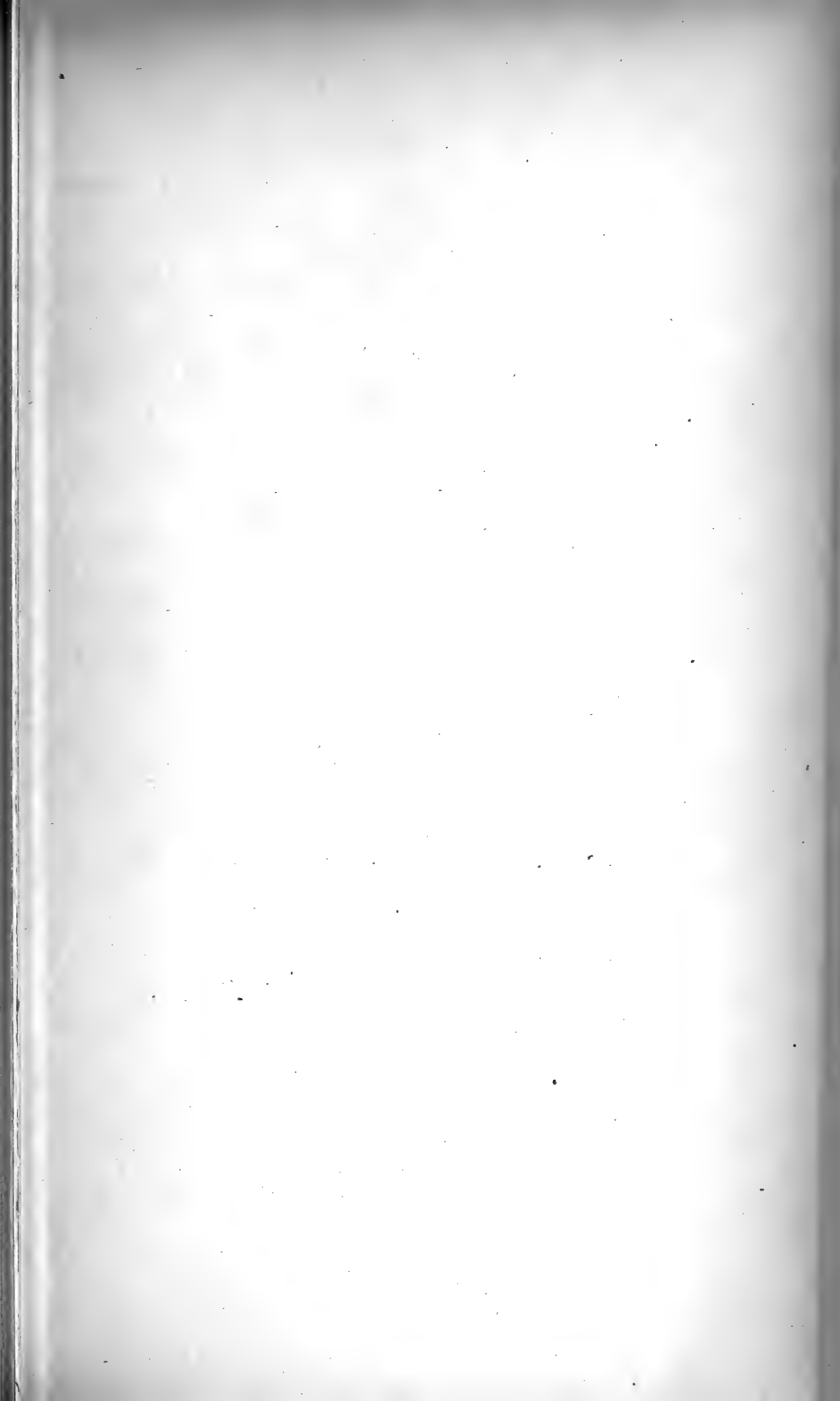
Sori numerous, small, circular, medial, and indusiate.

Rhizoma brief, spreading, tufted, and perennial.

Length of frond from three to eight inches; colour pale green.

For plants and fronds my thanks are due to Mr. Joseph Sidebotham, of Manchester.

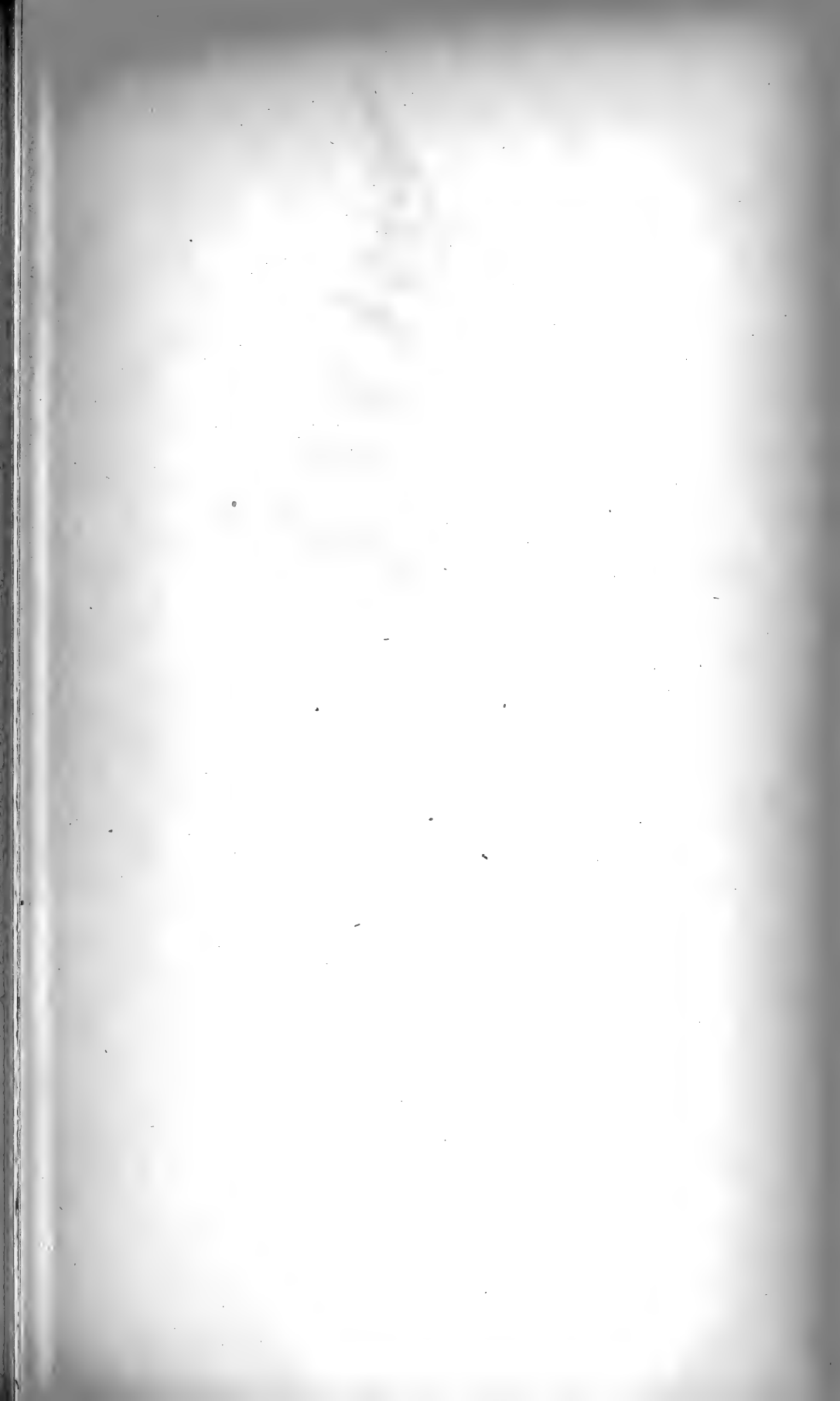
The illustration is from Mr. Sidebotham's fronds.





CYSTOPTERIS FRAGILIS.







Adiantum species

Plate 107



Portion of mature Frond—under side.

## CYSTOPTERIS FRAGILIS.

BERNHARDI. J. SMITH. HOOKER AND ARNOTT.  
 BABINGTON. DEAKIN. NEWMAN. SOWERBY. PRESL.  
 MOORE. PEPPIG. LIEBMANN. KUNZE. LINK.  
 SCHRADER. SCHOTT.

PLATES XXXI AND XXXII. VOL. VII.

<i>Polypodium fragile,</i>	LINNÆUS.
“ <i>fragile,</i>	BOLTON. VILLARS.
“ <i>anthriscifolium,</i>	HOFFMANN.
“ <i>cynapifolium,</i>	HOFFMANN.
“ <i>pedicularifolium,</i>	HOFFMANN.
“ <i>polymorphum,</i>	VILLARS.
“ <i>laciniatum,</i>	VILLARS.
“ <i>trifidum,</i>	WITHERING.
“ <i>album,</i>	LAMARCK.
“ <i>fumarioides,</i>	WEIS.
“ <i>lobatum,</i>	WEIS.
“ <i>viridulum,</i>	DESVAUX.
“ <i>fragile angustatum,</i>	HOFFMANN.
“ <i>tenuë,</i>	HOFFMANN.
“ <i>rheticum,</i>	DICKSON. BOLTON.
“ <i>dentatum,</i>	DICKSON.
“ <i>Pontederæ,</i>	ALLIONI.

<i>Aspidium fragile</i> ,	SWARTZ. SCHKUHR. KAULFUSS.
“ “	MARTENS AND GALLEOTTI.
“ <i>trifidum</i> ,	SWARTZ.
“ <i>fragile</i> , var.,	WILLDENOW.
“ <i>rhæticum</i> ,	WILLDENOW.
“ <i>dentatum</i> ,	SWARTZ. WILLDENOW.
“ <i>Pontederæ</i> ,	WILLDENOW.
<i>Cystopteris orientalis</i> ,	DESVAUX.
“ <i>rhætica</i> ,	LINK.
“ <i>atomaria</i> ,	PRESL.
“ <i>dentata</i> , var.,	HOOKEE.
“ <i>fragilis</i> , var.,	MOORE.
“ <i>angustata</i> ,	LINK.
“ <i>nigrescens</i> ,	HOOKEE.
“ <i>dentata</i> ,	HOOKEE. SOWERBY. LINK.
“ “	J. E. SMITH.
“ <i>leptophylla</i> ,	PRESL.
“ <i>retusa</i> ,	DECAISNE.
“ <i>fumarioides</i> ,	KUNZE. LIEBMANN.
“ <i>Pontederæ</i> ,	LINK.
“ <i>Chilensis</i> ,	FEE.
<i>Athyrium fragile</i> ,	SADLER.
“ <i>fumarioides</i> ,	PRESL.
“ <i>dentatum</i> ,	GRAY.
<i>Cyathea fragilis</i> ,	J. E. SMITH. ROTH.
“ <i>angustata</i> ,	J. E. SMITH.
“ <i>cynapifolia</i> ,	ROTH.
“ <i>anthriscifolia</i> ,	ROTH.
“ <i>fragilis</i> , var.,	J. E. SMITH.
“ <i>fragilis</i> , var. <i>angustata</i> ,	LINK.
“ <i>regia</i> ,	ROTH.
“ <i>dentata</i> ,	J. E. SMITH.
<i>Cystea fragilis</i> ,	J. E. SMITH.
“ <i>regia</i> ,	J. E. SMITH.
“ <i>angustata</i> ,	J. E. SMITH.
“ <i>dentata</i> ,	J. E. SMITH.
<i>Cyclopteris fragilis</i> ,	GRAY.
“ <i>fragilis</i> , var. <i>rhætica</i> ,	GRAY.
“ <i>dentata</i> ,	GRAY.

*Cystopteris*—Bladder Fern.

*Fragilis*—Brittle.

THE Brittle Bladder Fern, as it is commonly called, is an abundant species in Great Britain, and well worthy of cultivation.

An indigenous species, deciduous and hardy. It is to be met with in a vast number of places in Great Britain.

A native of England, Scotland, Ireland, Hebrides, throughout the whole of Europe, India, Persia, Armenia, Siberia, China, California, Mexico, Guatemala, Columbia, Venezuela, West Indies, New Granada, Chili, Port Famine, North Atlantic Islands, Abyssinia, and Tasmania.

It grows in the fissures of rocks and masonry.

Introduced into the Royal Gardens, Kew, in 1793.

Fronds herbaceous, smooth, sub-bipinnate, (occasionally tripinnate,) and oblong-lanceolate in form; pinnæ ovate-lanceolate; pinnules ovate near the base, oblong near the apex, and toothed.

Veins flexuose and branched. Fructification covering the under side of the frond.

Sori numerous and nearly circular. Rhizoma perennial, short, tufted, and decumbent.

Stipes slender, brown, and slightly scaly near the base.

Length of frond from three to eighteen inches; colour dull green.

Amongst the varieties Mr. Moore gives—

1.—*Fragilis*, var. *dentata*. Figured here as a distinct species.

2.—*Fragilis*, var. *angustata*. This is much attenuated and lengthened at the apex; it is large in growth, having long narrow teeth on the lobes.

3.—*Fragilis*, var. *Dickieana*. Small, from four to five inches in length; fronds narrow and bipinnate; pinnules blunt.

4.—*Fragilis*, var. *obtusa*. Lanceolate; pinnules brief and blunt, deeply pinnatifid. Length of frond from eight to twelve inches.

5.—*Fragilis*, var. *decurrens*. Discovered in Fife, by Mr. A. Tait. More acute than *C. Dickieana*.

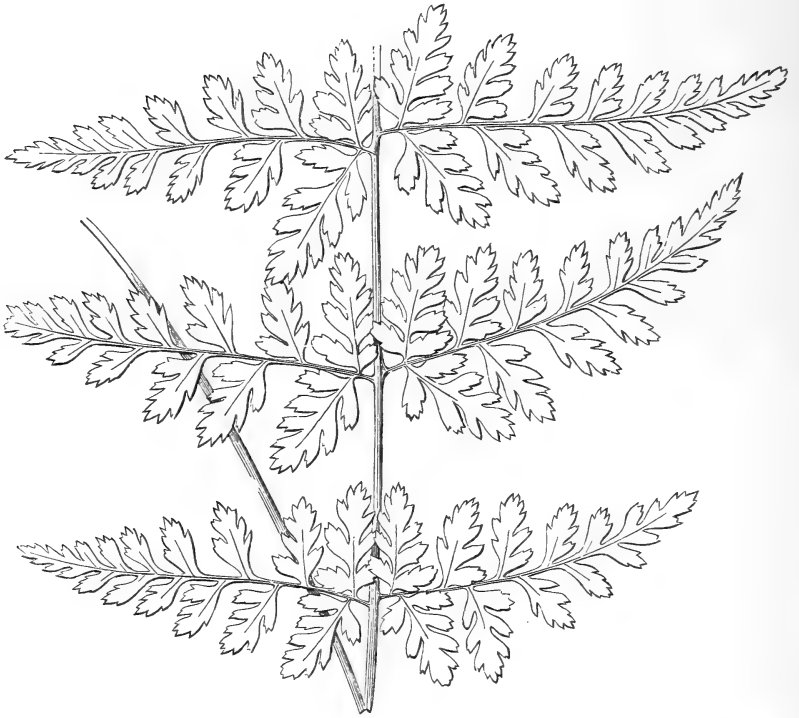
6.—*Fragilis*, var. *interrupta*. Fronds narrow and very dissimilar.

The wood-cut illustration is a very distinct variety found at Moffat, by Professor Balfour.

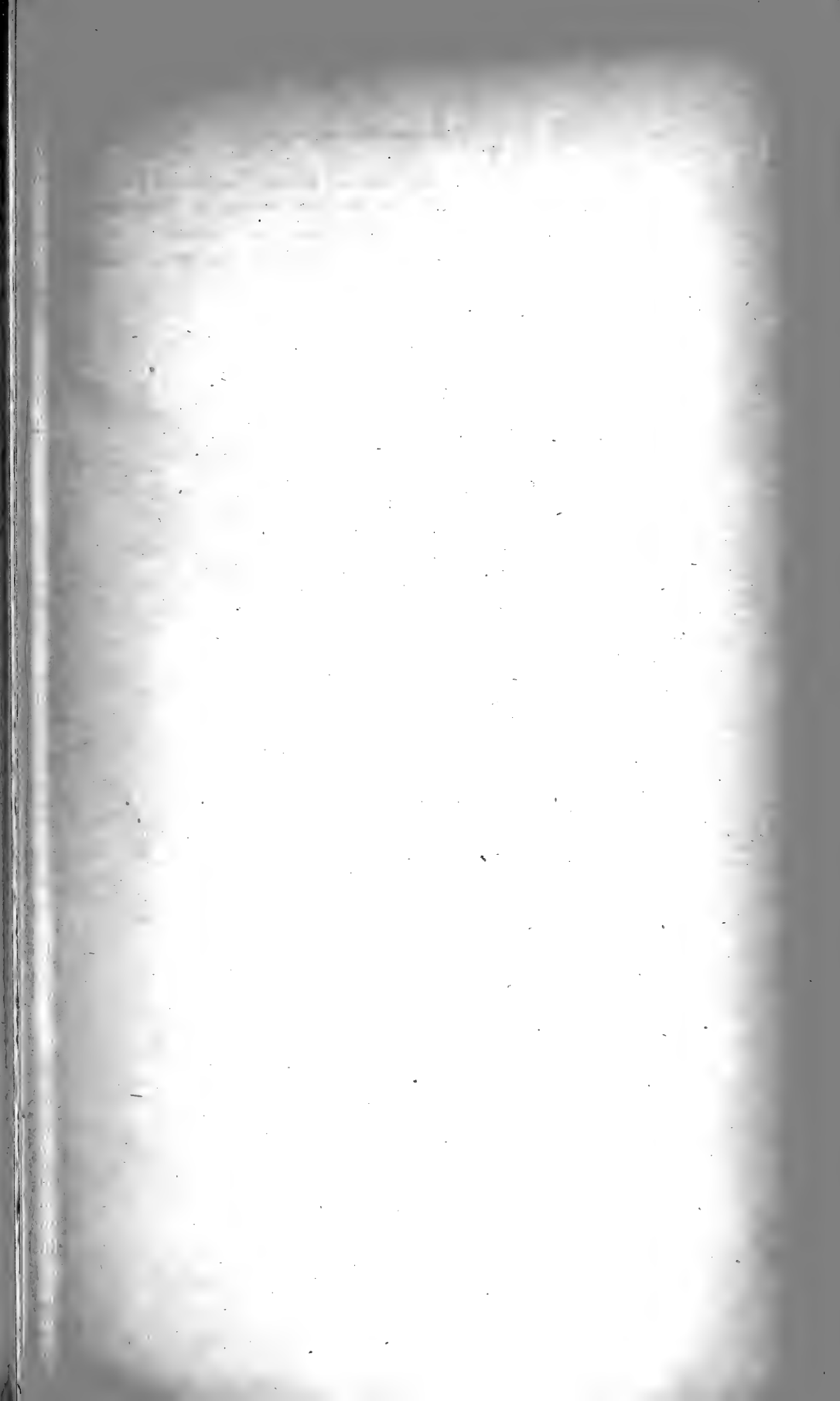
This Fern is subject to the ravages of a parasitical bright yellow fungus, the *Uredo filicum*; all damaged fronds from this cause should be cut away, as it spreads rapidly over the fronds.

For plants my thanks are due to Messrs. Veitch, of Chelsea; Rollisson, of Tooting; Mr. Joseph Sidebotham, of Manchester; Mr. Clapton, of Scarbro'; and M. Schott, of Vienna.

The illustrations are from Mr. Joseph Sidebotham's fronds.



Portion of a frond of variety of *C. fragilis*, gathered at Moffat, by Professor Balfour.

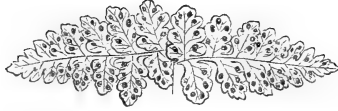




CYSTOPTERIS DICHOYANA.

XXXIII-VOL. I.





Portion of fertile Frond—under side.

## CYSTOPTERIS DICKIEANA.

SIM. NEWMAN.

PLATE XXXIII. VOL. VII.

<i>Cystopteris fragilis</i> var. <i>Dickieana</i> ,	MOORE. J. SMITH.
“ “ “	SOWERBY. HOOKER.
“ <i>dentata</i> var. <i>Dickieana</i> ,	BABINGTON. SOWERBY.

*Cystopteris*—Bladder Fern.

*Dickieana*—Named after Dr. Dickie.

A VERY handsome indigenous dwarf species, easily cultivated, and making a charming specimen.

A deciduous hardy Fern.

Discovered by Dr. Dickie on dripping rocks in a cave at Cove, near Aberdeen, and since then at Dunkeld, by Dr. Balfour.

It has not been found in any other country.

Authorities feel inclined to place the *Cystopteris Dickieana* as a form of *C. fragilis*. In the present work, however, I have preferred figuring it as a distinct species. On page 79 in giving a list of Mr. Moore's varieties, in mentioning *Var. dentata*, it is stated as being figured as a distinct species, this notification was intended to apply to *C. Dickieana*. *C. dentata*, may, however, be another form of the *C. Dickieana*.

Fronds bipinnate, and ovate-lanceolate in form, the pinnae being rather ovate and overlapping each other, and deflexed.

Pinnules obtuse, oblong-ovate, approximate, and pinnatifid.  
Rachis winged.

Stipes near the base scaly.

Terminal, and adherent to a tufted rhizoma.

Sori situated near the margin.

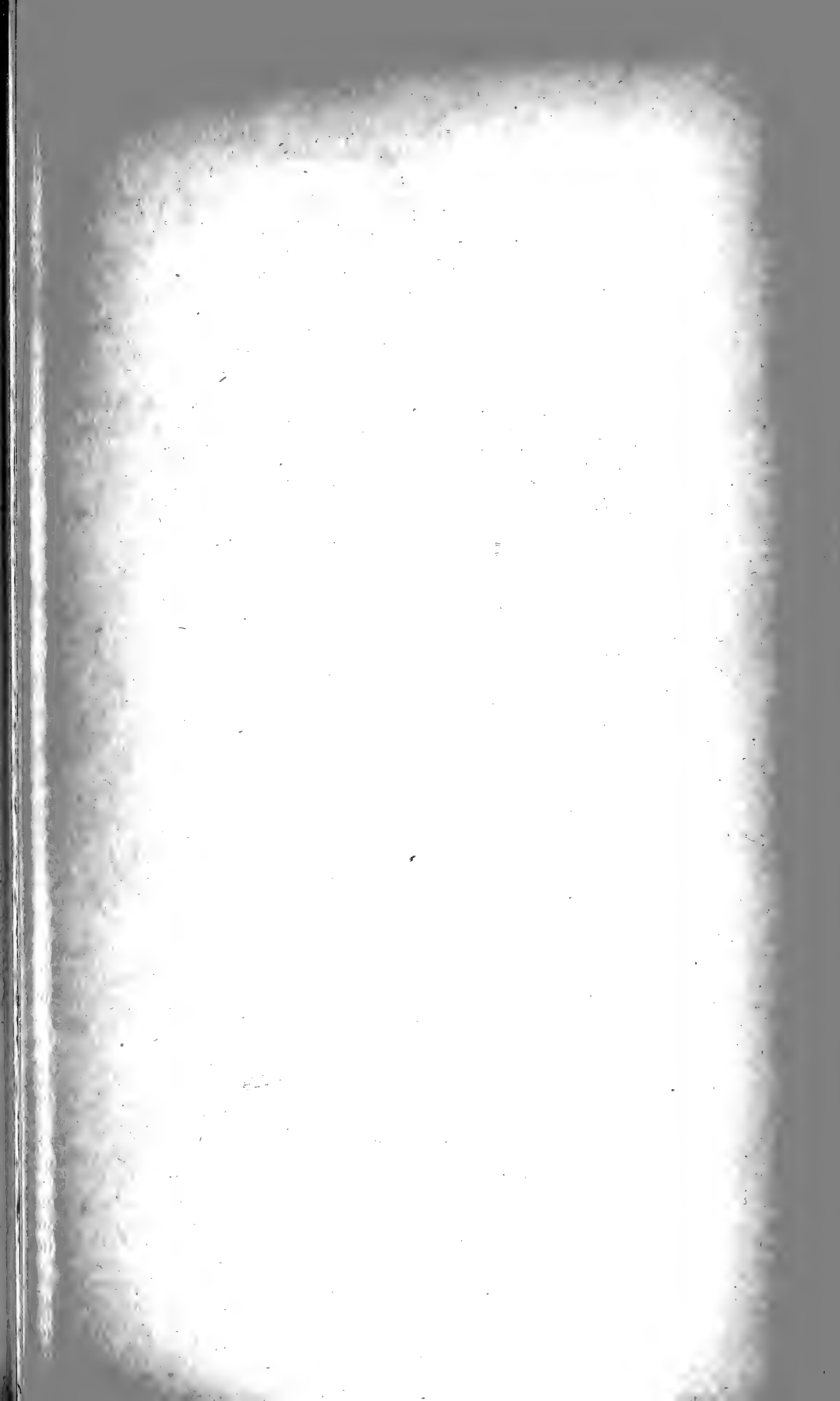
Length of frond from four to six inches; colour brilliant green.

Veins forked.

For plants my thanks are due to Mr. Veitch, of the Exotic Nursery, Chelsea, and to Mr. Joseph Henderson, of Wentworth; and for fronds to Mr. Joseph Sidebotham, of Manchester.

It may be procured of any Nurseryman.

The illustration is from a plant in my own collection.





CHELOIDOPHYLLUM MICHIANA.  
XXXXV—VOL. 7.



Pinna of fertile Frond—under side.

## CYSTOPTERIS MONTANA.

LINK. LINDLEY AND MOORE. NEWMAN. J. SMITH.  
 BERNHARDI. HOOKER AND ARNOTT. DEAKIN. BABINGTON.  
 SOWERBY. KUNZE.

PLATE XXXIV. VOL. VII.

<i>Aspidium montanum</i> ,	SWARTZ. SCHUHR.
“ “	WILDENOW.
<i>Cystopteris allioni</i> ,	NEWMAN.
“ <i>myrrhidifolium</i> ,	NEWMAN.
<i>Polypodium montanum</i> ,	LAMARCK. HENKE. ALLIONI.
“ <i>myrrhidifolium</i> ,	VILLARS.
<i>Athyrium montanum</i> ,	ROEHLING.
<i>Cyathea montana</i> ,	SMITH. ROTH.

*Cystopteris*—Bladder Fern.

*Montana*—Mountain.

THE Mountain Bladder Fern is a very rare indigenous species, very distinct from all others, and having very elegant fronds.

A deciduous hardy Fern.

Discovered in 1836 on Ben Lawers, in Perthshire, by Mr. W. Wilson. Found also on the mountains between Glen

Lochey and Glen Dochart, Perthshire, and in Glen Isla, Clova, Forfarshire, and on Belvinnes, Banffshire.

Native of Scotland, Kamtschatka, Rocky Mountains of North-west America, in the extreme North of Europe, Spain, Italy, Hungary, Lapland, Norway, and on the Alps.

Fronde triangular and tripinnate; pinnæ spreading, the pinnales being oblong-obtuse; segments blunt and inciso-dentate.

Fronde lateral or terminal, and adherent to a long slender creeping rhizoma.

Stipes half the length of the frond, and frequently more; slightly scaly.

Sori minute, circular, and becoming confluent.

Length of frond from four to twelve inches; colour a lively green.

To grow this Fern successfully plant it in a shallow pan, with a mixture of peat, sphagnum, and sand, giving it an open medium for its roots, a moist shady place to grow in, and water freely. In a wild state it grows on ledges of dripping rocks, amongst sphagnum.

For plants my obligations are due to Mr. Atkins, of Painswick; Messrs. Rollisson, of Tooting; and Messrs. Backhouse, of York; and for fronds to Professor Balfour, of Edinburgh.

It may be procured of Messrs. Kennedy, of Covent Garden; Veitch, of Chelsea; Sim, of Foot's Cray; A. Henderson, of Pine-apple Place; and Stansfield, of Todmorden.

The illustration is from Professor Balfour's frond.





CYSTOPTERIS TENUIA

XXXV VOL. 7.





Pinna of barren Frond—under side.

## CYSTOPTERIS TENUIS.

SCHOTT. J. SMITH. MOORE AND HOULSTON.

PLATE XXXV. VOL. VII.

<i>Aspidium tenue</i> ,	SWARTZ. SCHKUHR. WILLDENOW.
“ <i>atomarium</i> ,	MUHLENBERG. WILLDENOW.
<i>Nephrodium tenue</i> ,	MICHAUX.
<i>Cystopteris fragilis</i> , var.,	HOOKEE.

*Cystopteris*—Bladder Fern.

*Tenuis*—Slender.

It would be difficult to find a Fern more appropriately named than this species, the fronds are so slender and fragile that they can scarcely bear their own weight, although the substance of the frond is remarkably thin. Some authorities consider it a variety of *Cystopteris fragilis*, but I think there can hardly be a doubt as to the two being perfectly distinct species.

A half-hardy deciduous Fern.

Native of North America.

The fronds are sub-tripinnate, and oblong-lanceolate in form; pinnules oblong and rather ovate, the one next the rachis being largest; profoundly pinnatifid, with blunt dentate segments.

Fronds lateral or terminal, and adherent to a creeping rhizoma.

Sori circular, medial, and minute.

Veins forked, simple, and free.

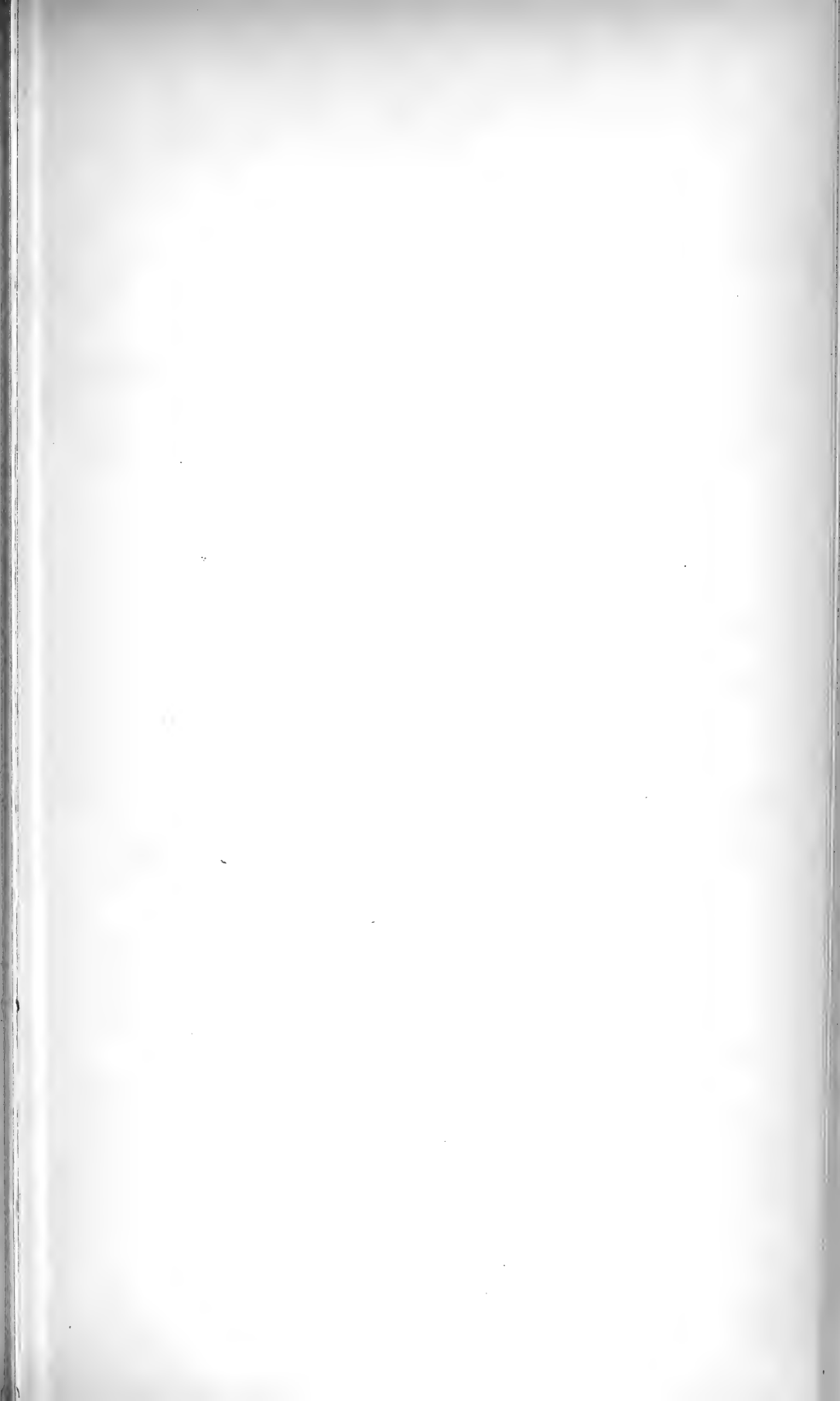
Fronds slender and glabrous.

Length twelve inches; colour a bluish green.

For plants my thanks are due to Mr. Joseph Henderson, of Wentworth, and to Mr. R. Sim, of Foot's Cray.

It may be procured from Messrs. Sim, of Foot's Cray; A. Henderson, of Pine-apple Place; E. G. Henderson, of St. John's Wood; Kennedy, of Covent Garden; and Cooling, of Derby.

The illustration is from a plant in my own collection.





CYSTOPTERIS BULBIFERA.

XXXVI—Vol. 7.



Pinna of fertile Frond—under side.

## CYSTOPTERIS BULBIFERA.

BERNHARDI. J. SMITH. KUNZE. LINK.

PLATE XXXVI. VOL. VII.

<i>Aspidium bulbiferum</i> ,	SWARTZ. SCHKUHR. WILLDENOW.
<i>Polypodium</i> “	LINNÆUS.
<i>Nephrodium</i> “	MICHAUX.

*Cystopteris*—Bladder Fern. *Bulbifera*—Bulb-bearing.

*Cystopteris bulbifera* should be in every hardy collection, flourishing without any care and attention, and rapidly spreading itself both by its bulbs and seeds. It is really a very pretty Fern, and one that eventually will be naturalized and found wild throughout England.

A hardy deciduous species.

Native of North America—United States, Canada, Kentucky, and Virginia.

Introduced into the Royal Gardens, Kew, by Mr. Tradescant, in 1648.

The fronds, which are bipinnate, are of a lanceolate-elongate form, the pinnæ being lanceolate, and the pinnules ovate-oblong, profoundly pinnatifid, and having dentate segments. The fronds bear a number of bulbs on their under surface, which are easily detached, and speedily make plants.

Fronds terminal, being adherent to a tufted rhizoma.

Sori circular, minute, and medial.

Veins forked.

Length of frond from twelve to twenty inches; colour pale green, frequently brownish.

Stipes and rachis reddish.

For plants my thanks are due to Sir Oswald Mosley, Bart., of Rolleston Hall, and to Mr. J. Pearson, of Chilwell.

It may be procured of any Nurseryman.

The illustration is from a plant in my own collection.

## CONTINUATION OF POLYPODIEÆ FROM VOL. II.

## GENUS X.

## HEMIONITIS. LINNÆUS.

THE fronds of this small dwarf genus are simple, and are either cordate, palmate, or pinnate. Veins reticulated and wholly covered by sporangia, being, in fact, reticulated sori.

Mr. Smith, in his "Catalogue of the Ferns of Kew," gives the following:—

Hemionitis palmata, <i>Linnæus</i> .		Hemionitis pedata, <i>Swartz</i> .
"    cordata, <i>Roxburgh</i> .		

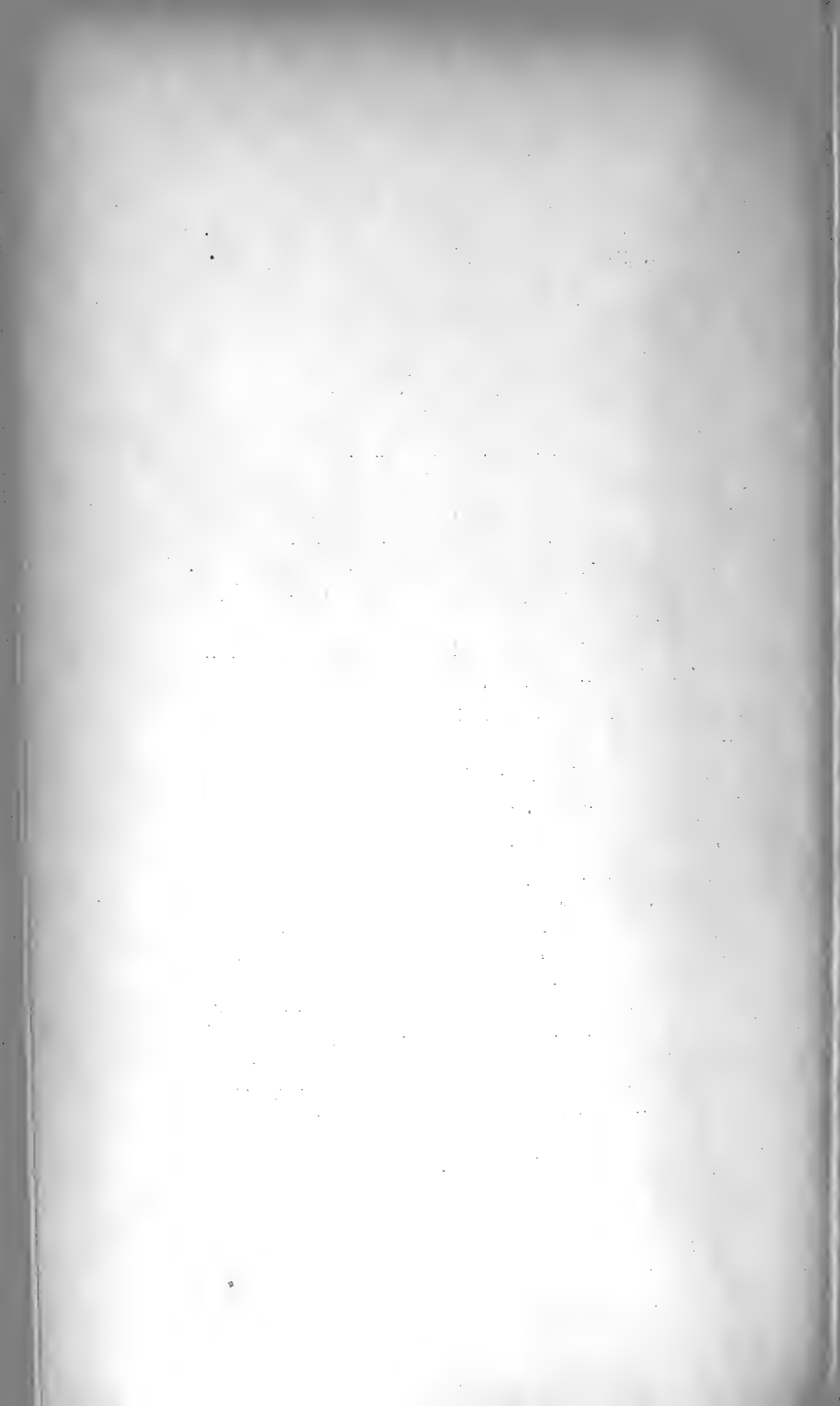
Feé, in his "Genres de la Famille des Polypodiées," gives—

Hemionitis palmata, <i>Willdenow</i> .		Hemionitis sagittata, <i>Fee</i> .
"    cordata, <i>Roxburgh</i> .		

Presl, in his "Tentamen Pteridographiæ," enumerates—

Hemionitis cordata, <i>Roxburgh</i> .		Hemionitis coriacea, <i>Presl</i> .
palmata, <i>Linnæus</i> .		plantaginea, <i>Cavanilles</i> .
Cayennensis, <i>Desvaux</i> .		concava, <i>Presl</i> .
lanceolata, <i>Linnæus</i> .		Hookeriana, <i>Presl</i> .
falcata, <i>Willdenow</i> .		Lessonii, <i>Presl</i> .
Blumeana, <i>Presl</i> .		Boryana, <i>Willdenow</i> .
semicostata, <i>Presl</i> .		Reinwardtiana, <i>Presl</i> .
spatulata, <i>Presl</i> .		callæfolia, <i>Presl</i> .
immersa, <i>Bory</i> .		reticulata, <i>Forster</i> .
obtusata, <i>Willdenow</i> .		parvula, <i>Presl</i> .

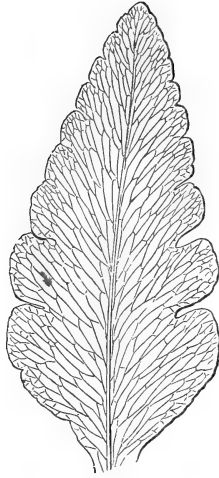
We have no British representative.











Segment of barren Frond—under side.

## HEMIONITIS PALMATA.

LINNÆUS. PLUMIER. HOOKER. SCHOTT. J. SMITH.  
 WILLDENOW. LIEBMANN. LINK. KAULFUSS. KUNZE.  
 SWARTZ. SPRENGEL. LAMARCK. PETIVER. PLUKENET.  
 MORISON. SIEBER. SLOAN. FEE. PRESL.

PLATE XXXVII. VOL. VII.

*Gymnogramma palmata*,  
*Hemionitis aurea-hirsuta*,

LINK.  
 PLUMIER.

*Hemionitis*—Derived from *hemionos*, a mule. *Palmata*—Hand-shaped.

AN extremely beautiful Fern when well grown, and requiring to be cultivated in a very moist atmosphere.

An evergreen stove species.

Native of the West Indies, Brazil, and Mexico.

Fronds palmate or ivy-leaf-shaped, from two to three inches wide, simple, with five oblong segments, lobed bluntly or crenulate. Terminal, being hirsute both above and below.

The habit of the sterile fronds is horizontal, whilst that of the fertile ones is erect. The fronds are viviparous, bearing many young plants on their upper surface.

Rhizoma fasciculate.

Sori linear and reticulated, eventually becoming confluent.

Veins reticulated.

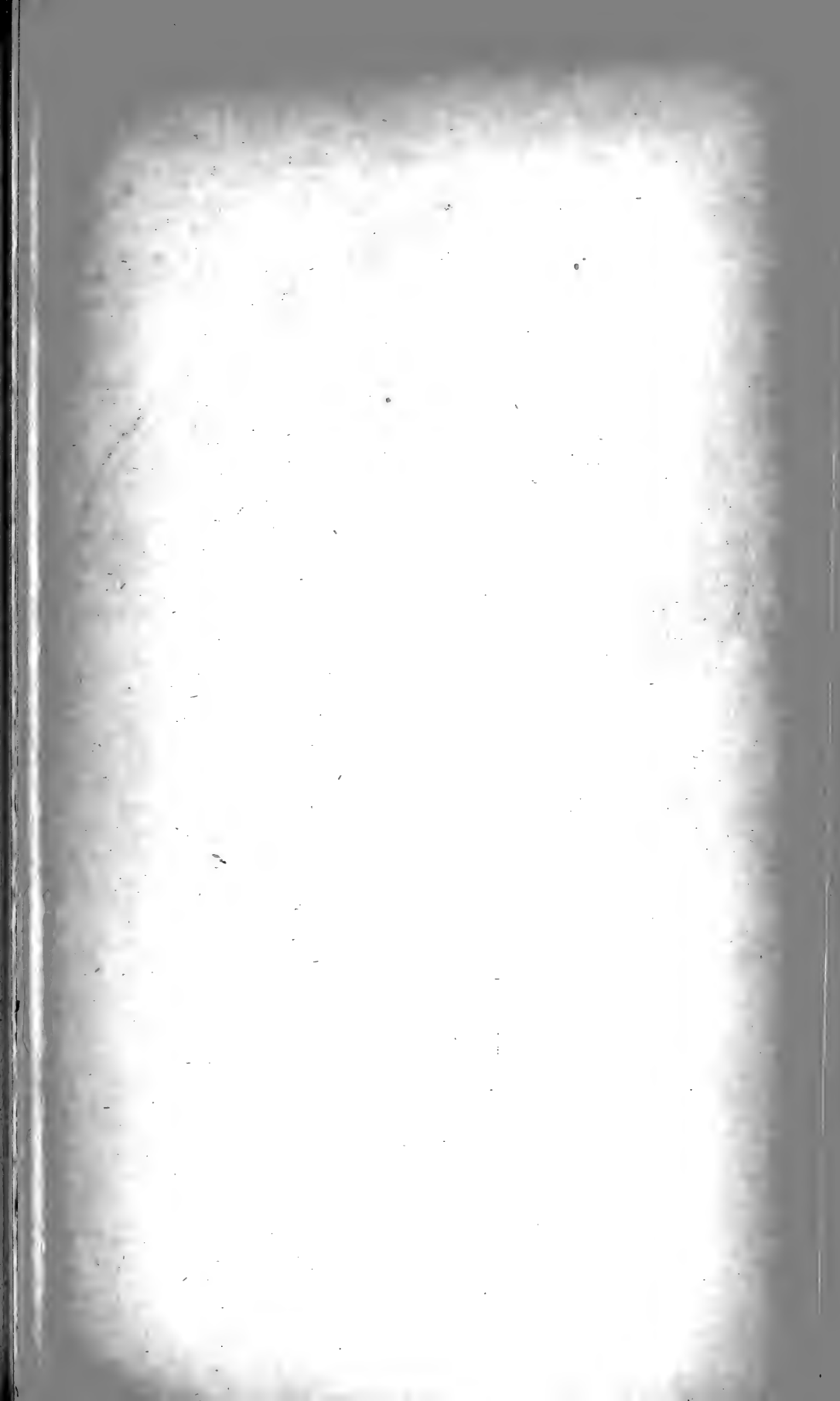
Length of frond from six to ten inches.

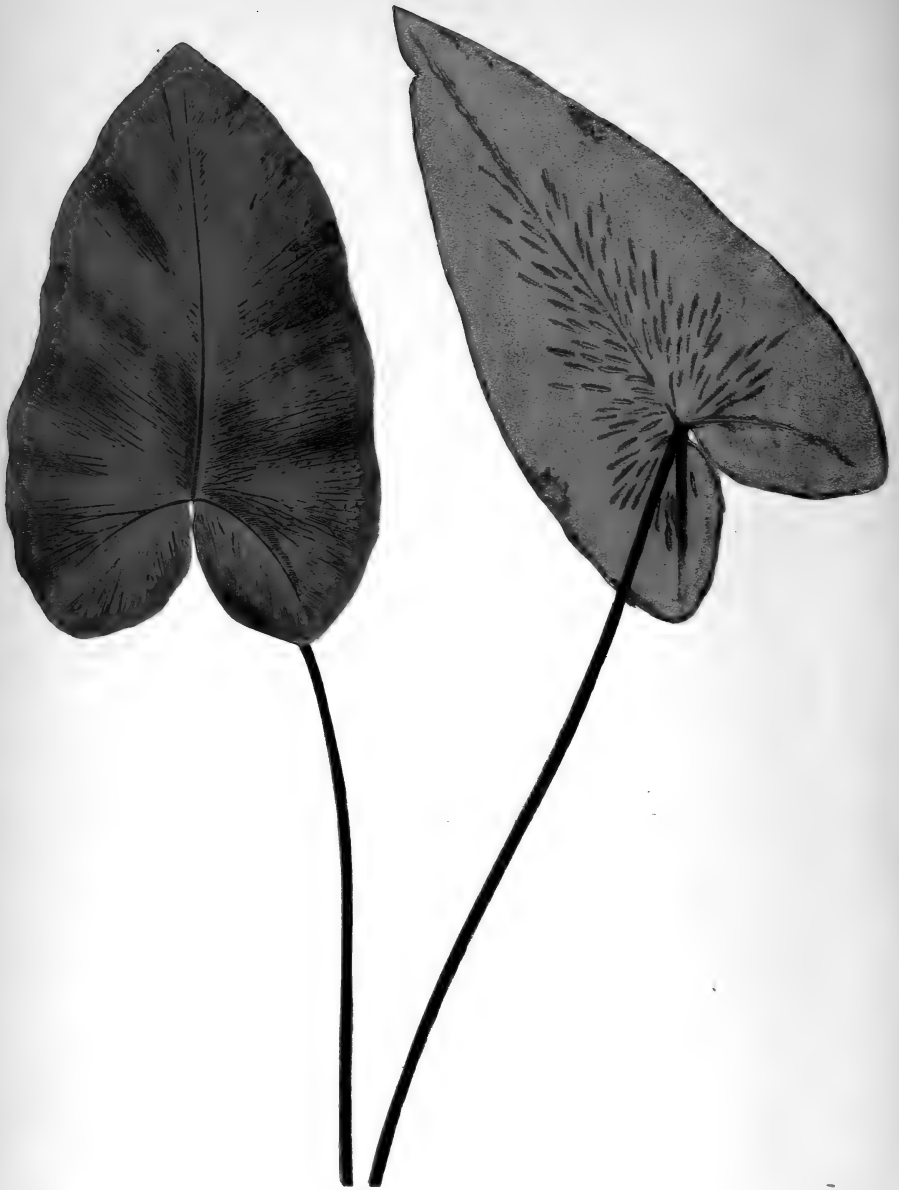
Rachis and stipes covered with red hairs.

For a plant my thanks are due to Mr. Dryden, gardener to Mr. Evans, of Allestre Hall, near Derby.

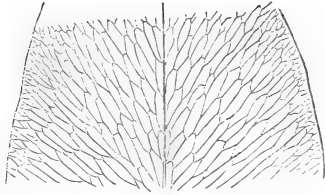
It is in the Catalogues of Messrs. Rollisson, of Tooting; Jackson, of Kingston; Veitch, of Chelsea; E. G. Henderson, of St. John's Wood; Sim, of Foot's Cray; A. Henderson, of Pine-apple Place; Stansfield, of Todmorden; Booth, of Hamburg; and Cooling, of Derby.

The illustrations are from a plant in my own collection.





MONILIS CORP. A.  
1888-1889



Portion of barren Frond—under side.

## HEMIONITIS CORDATA.

HOOKER AND GREVILLE. J. SMITH. PRESL.

PLATE XXXVIII. VOL. VII.

*Hemionitis sagittata*,  
 “ *cordifolia*,

FEE.  
 ROXBURGH.

*Hemionitis*—Derived from *hemionos*, a mule.

*Cordata*—Heart-shaped.

A VERY handsome species, and more easily grown than the *Hemionitis palmata*.

An evergreen stove Fern.

Native of the East Indies.

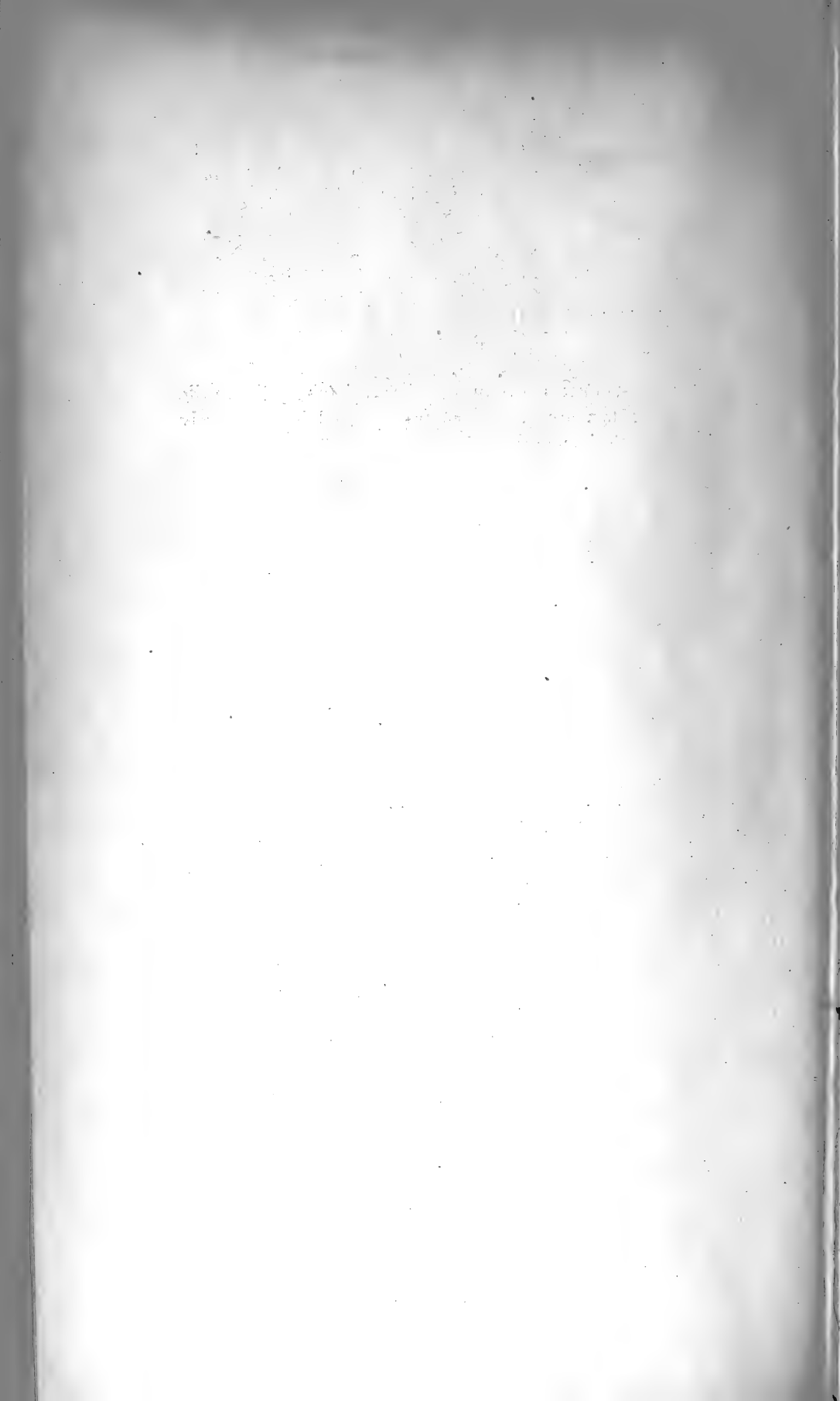
The fronds, which are simple and two inches wide, are cordate or heart-shaped.

Rachis and stipes black, and covered with pinkish white hairs. Stem brief.

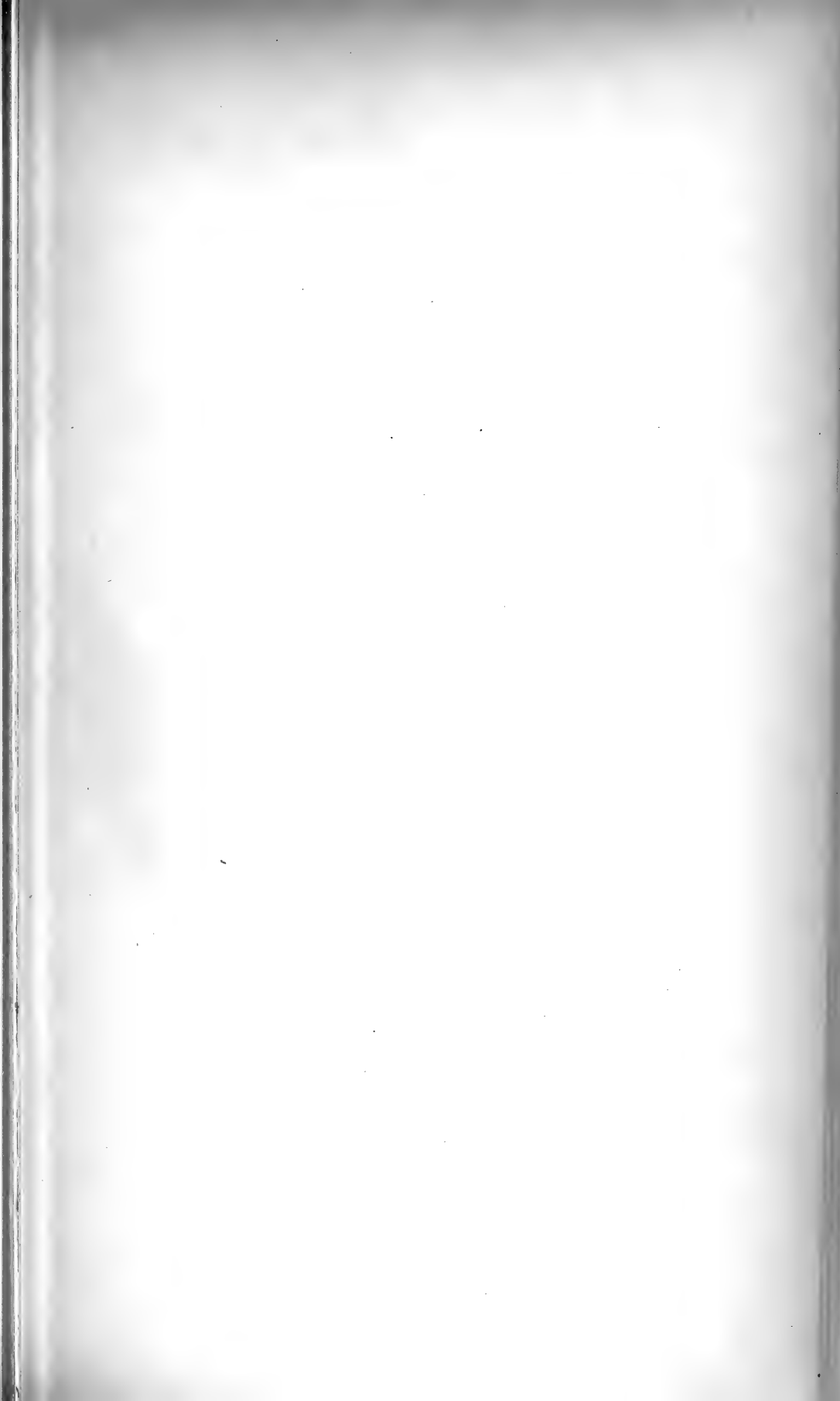
The veins reticulated, immersed in the frond, and indistinct.

The fronds are hirsute both above and below; the colour rich dark green above, pale green beneath. Thick, smooth, and shining.

Length of frond usually from six to ten inches.







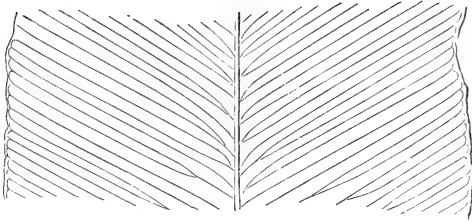






*Adiantum cernuum*.

Fig. 10.



Portion of barren Pinna—under side.

## OLFERSIA CERVINA.

PRESL. J. SMITH. KUNZE. HOOKER AND GREVILLE.  
MOORE AND HOULSTON.

PLATES XXXIX AND XL. VOL. VII.

<i>Acrostichum cervinum</i> ,	SWARTZ. PLUMIER. SPRENGEL.
“ “	LIEBMANN.
“ <i>linearifolium</i> ,	PRESL. SPRENGEL.
“ <i>sorbifolium</i> ,	OF ENGLISH & BERLIN GARDENS.
<i>Olfersia corcovadensis</i> ,	RADDI. HOOKER. LINK.
<i>Polybotrya Raddiana</i> ,	OF CONTINENTAL GARDENS.
“ <i>cervina</i> ,	KAULFUSS. SWARTZ.
“ “	HOOKER AND GREVILLE.
<i>Osmunda cervina</i> ,	LINNÆUS.

*Olfersia*—Named after Olfers, a German Botanist. *Cervina*—Stag-horned.

AN interesting and very distinct handsome Fern.

An evergreen stove species.

Native of the West Indies, Mexico, and Tropical America.

Introduced into the Royal Gardens, Kew, in 1841, having been received from the Messrs. Loddiges.

Fertile and sterile fronds dissimilar. Sterile fronds glabrous, pinnate, with oblong-acuminate pinnæ; superior base rounded,

and inferior one truncate. Habit weeping. Fertile fronds bipinnate, the pinnæ being linear and entirely sporangiferous; stipes covered with scales. Habit erect. The fronds terminal, and adherent to a creeping rhizoma, which is scaly.

Length of frond from twenty-four to thirty-six inches; colour bright green.

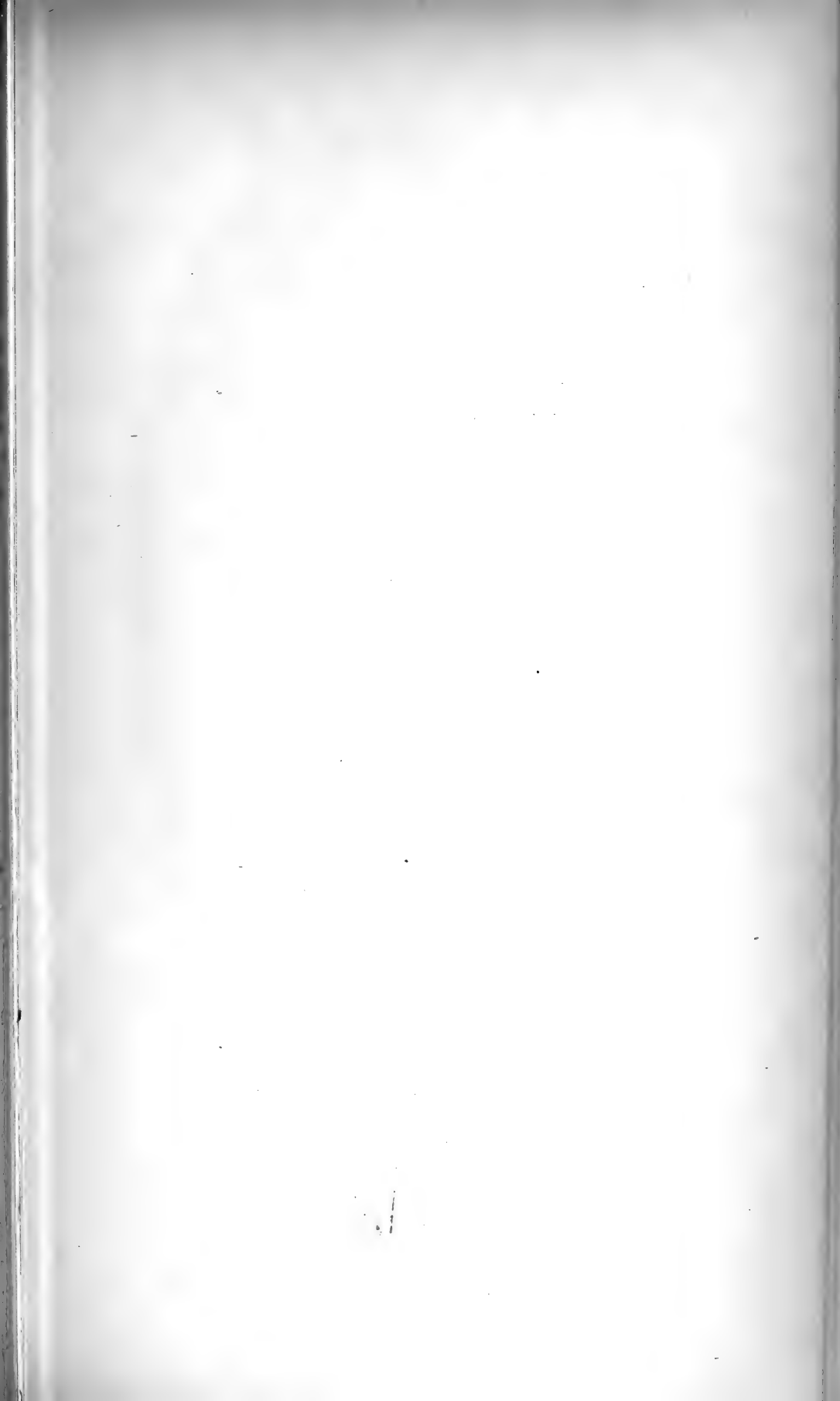
Sori amorphous, densely covering the fertile fronds.

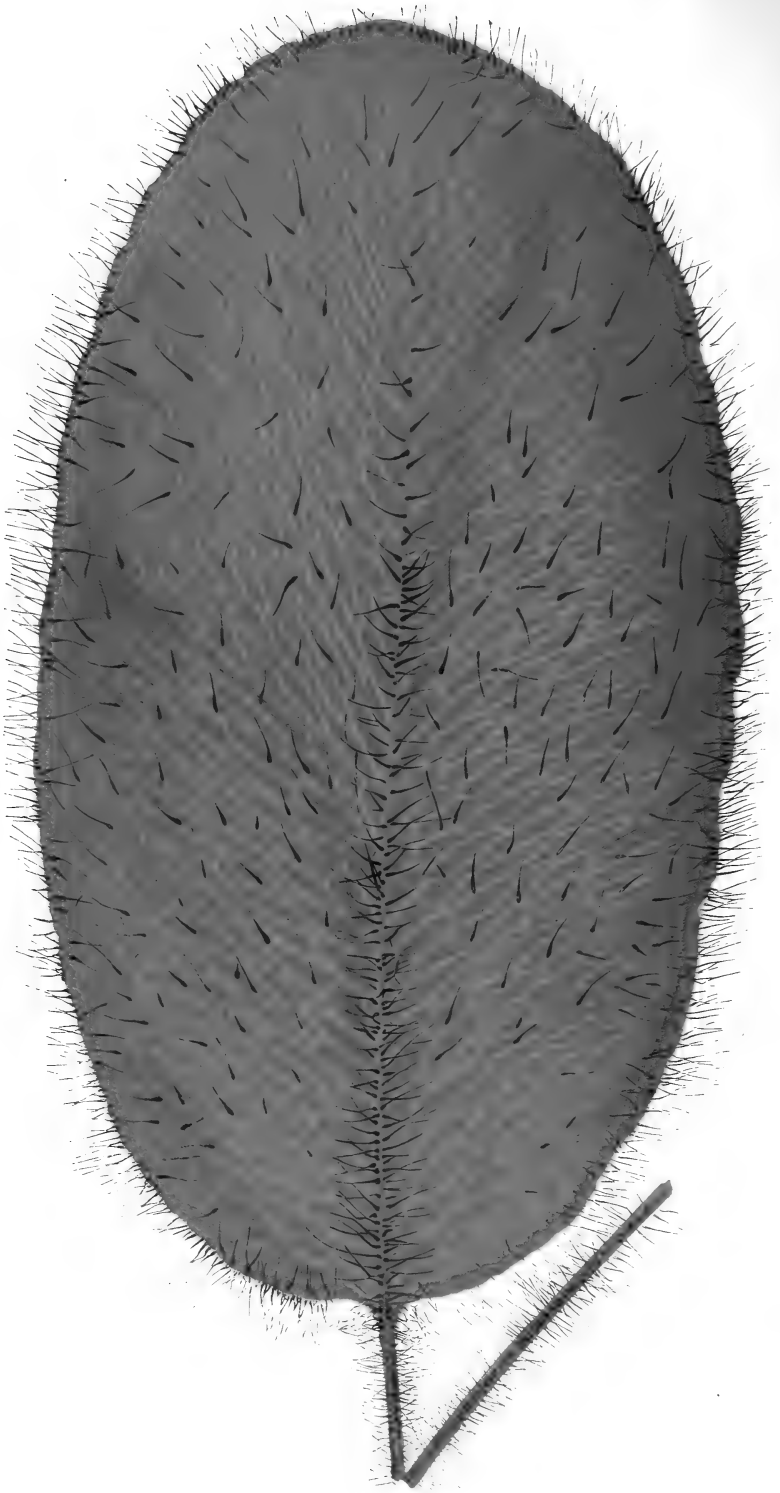
Veins forked, internal, and combined by a transverse continuous marginal vein.

To Mr. Sim my thanks are due for a plant of this species, and to Mr. G. Norman, of Hull, for fronds.

It is in the Catalogues of Messrs. Rollisson, of Tooting; Sim, of Foot's Cray; Veitch, of Chelsea; Jackson, of Kingston; A. Henderson, of St. John's Wood; and Stansfield, of Todmorden.

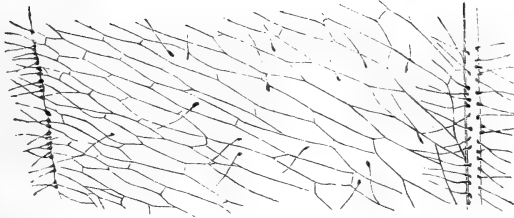
The illustrations are from Mr. Norman's fronds.





CRINIFOL.





Portion of Frond—under side.

## HYMENODIUM CRINITUM.

FEE. J. SMITH. WILLDENOW. KAULFUSS.

PLATE XLI. VOL. VII.

<i>Acrostichum crinitum</i> ,	LINNÆUS. KUNZE. SPRENGEL.
“ “	LIEBMANN. SWARTZ. PLUMIER.
“ “	HOOKEE AND GREVILLE. ( <i>Not of</i> MARTENS AND GALLEOTTI.)
<i>Dictyoglossum</i> “	J. SMITH. MOORE & HOULSTON.
“ “	SCHOTT.
<i>Olfersia crinita</i> ,	PRESL.

*Hymenodium*—Like skin.

*Crinitum*—Hairy.

A VERY singular-looking and very dissimilar Fern, distinct from all others, and perhaps the most extraordinary Fern in cultivation.

An evergreen stove species.

Native of the West Indies, Jamaica, and Mexico. Liebmann says that he procured it in Mexico from Hacienda de Zacuapan, (the Farm of Zacuapan,) where it grew in cracks of rocks.

The fronds, which are very thick and simple, are terminal, oval-elliptical in form, the fertile fronds being shorter than the sterile ones, coriaceous, and somewhat contracted. The edge

of the frond surrounded with black hairs, and the upper surface of the frond covered with them.

The sori occupies the whole of the under side of the frond except the margin.

Rhizoma cæspitose, thick, and decumbent, and densely scaly.

Rachis and stipes densely covered with black hair-like scales, half an inch in length. Stipes from six to nine inches in length.

Veins uniform, reticulated, areoles large, elongated, and somewhat hexagonal in form.

Length of frond from fifteen to twenty inches; width from six to twelve inches. Colour dull green. Stem very stout and short.

For fronds of this Fern I am indebted to Sir W. J. Hooker, Director of the Royal Gardens, Kew, and to Mr. G. Norman, of Hull.

It may be procured from Messrs. Rollisson, of Tooting; Sim, of Foot's Cray; Jackson, of Kingston; Veitch, of Chelsea; E. G. Henderson, of St. John's Wood; A. Henderson, of Pine-apple Place; and Booth, of Hamburg.

The illustration is from Sir W. J. Hooker's frond.

## GENUS XIII.

## ACROSTICHUM. LINNÆUS.

SORI amorphous, universal on the under side of the fertile frond. Venation uniform, reticulated in the normal form, and having elongated areoles. Only one species is at present in cultivation in this country.

The section *Pœcilopteris* differs in having the venation pinnate and the venules arcuately or angularly anastomosing. Fronds pinnate.

The section *Gymnopteris* differs in the pinnate veins having the venules compoundly anastomosing. Fronds simple, lobed, or pinnate.

The section *Polybotrya* has the veins pinnate and the venules simple, free, and external. Fronds bi-tripinnate.

The section *Elaphoglossum* has simple fronds. The veins simple or forked, and internal; the venules parallel, their apices being free and clavate, terminating within a thickened margin.

The section *Lomariopsis* has the veins uniform, simple, or forked. Fronds pinnate.

There are no British representatives.

Mr. Moore, in his "Genera and Species of Cultivated Ferns," gives—

- Elaphoglossum conforme, *Schott.*
- “ crassinerve, *Kunze.*
- “ callæfolium, *J. Smith.*
- “ longifolium, *J. Smith.*
- “ scolopendrifolium, *J. Smith.*
- “ villosum, *J. Smith,*
- “ Dombeyanum, *Fee.*

*Polybotrya cylindrica*, *Kaulfuss.*

*Acrostichum aureum*, *Linnaeus.*

- Cyrtogonium flagelliferum, *J. Smith.*  
 “ repandum, *J. Houlston.*  
 “ crispatum, *J. Houlston.*  
 Gymnopteris nicotianæfolia, *Presl.*  
 “ decurrens, *J. Smith.*

Also in his “Index Filicum”—

- |  |  |
|--|--|
| <p>Elaphoglossum laminarioides.<br/>         acrocarpon.<br/>         actinotrichum.<br/>         affine.<br/>         adenolepis.<br/>         conforme.<br/>         æmulum.<br/>         callæfolium.<br/>         affine.<br/>         alatum.<br/>         alismæfolium.<br/>         Schiedei.<br/>         alpestre.<br/>         andicola.<br/>         angulatum.<br/>         aphlebium.<br/>         apodum.<br/>         attenuatum.<br/>         Aubertii.<br/>         auricomum.<br/>         Banksianum.<br/>         horridulum.<br/>         Bellermannianum.<br/>         viscosum.<br/>         Boryanum.<br/>         brachyneuron.<br/>         brevipes.<br/>         Calaguala.<br/>         callolepis.<br/>         calophyllum.<br/>         cardiophyllum.<br/>         caudatum<br/>         hybridum</p> | <p>Elaphoglossum crispatum.<br/>         ciliatum.<br/>         perelegans.<br/>         cochleariæfolium.<br/>         pilosum.<br/>         marginatum.<br/>         crassinerve.<br/>         consobrinum.<br/>         blepharodes.<br/>         Cumingii.<br/>         curvans.<br/>         cuspidatum.<br/>         decoratum.<br/>         decurrens.<br/>         didynamum.<br/>         dimorphum.<br/>         dissimile.<br/>         lepidotum.<br/>         durum.<br/>         ellipticum.<br/>         elongatum.<br/>         erinaceum.<br/>         erythrolepis.<br/>         falcatum.<br/>         Feei.<br/>         ferrugineum.<br/>         Lindeni.<br/>         scolopendrifolium.<br/>         simplex.<br/>         frigidum.<br/>         vestitum.<br/>         Funckii.<br/>         Gardnerianum.</p> |
|--|--|

## Elaphoglossum squamatum.

Gayanum.  
 minutum.  
 glaucum.  
 gorgoneum.  
 gratum.  
 Hartwegii.  
 Herminieri.  
 heterolepis.  
 heteromorphum.  
 squamosum.  
 Ruizianum.  
 stipitatum.  
 stelligerum.  
 hystrix.  
 impressum.  
 cognatum.  
 Jamesoni.  
 Junguhnianum.  
 Karstenianum.  
 laminarioides.  
 Langsdorffii.  
 Sieberi.  
 laurifolium.  
 Lechlerianum.  
 Lepervanchii.  
 leptophyllum.  
 lineare.  
 lingua.  
 linquæforme.  
 lloense.  
 lonchophyllum.  
 obductum.  
 stigmatolepis.  
 macropodium.  
 Martinicense.  
 Mathewsii.  
 melanolepis.  
 melanopus.  
 meridense.

## Elophoglossum splendens.

micradenium.  
 microlepis.  
 Moritzianum.  
 stigmatolepis.  
 tectum.  
 notatum.  
 Orbignyanum.  
 ovatum.  
 pachydermum.  
 petiolosum.  
 Webbia.  
 piloselloides.  
 lepidotum.  
 platyneuron.  
 Plumieri.  
 undulatum.  
 Pœppigianum.  
 rabdolepis.  
 ramosissimum.  
 Roeslii.  
 scalpellum.  
 scandens.  
 Schomburgkii.  
 sessile.  
 setosum.  
 spathulatum.  
 squamipes.  
 squarrosus.  
 strictum.  
 venustum.  
 villosus.  
 succisæfolium.  
 tambillense.  
 tragiæfolium.  
 hybridum.  
 Wageneri.

## Acrostichum aureum.

bicolor.  
 contractum.

Acrostichum daneæfolium.	Pæcilopteris punctulata.
flare.	contaminans.
fraxinifolium.	costata.
pteroides.	crispatula.
Polybotrya appendiculata.	heteroclitia.
aspleniifolia.	Finlaysoniana.
bifurcata.	lonchophora.
osmundacea.	ludens.
Hamiltoniana.	repanda.
Plumieri.	Hookeriana.
Gymnopteris Zollingeri.	Presliana.
taccæfolia.	Quoyana.
decurrens.	serratifolia.
quercifolia.	subcrenata.
obtusifolia.	terminans.
normalis.	virens.
lanceolata.	Anapausia acuminata.
axillaris.	aliena.
Lomariopsis spondiæfolia.	bicuspis.
buxifolia.	Heudelotii.
erythrolepis.	dentata.
phlebodes.	nicotanæfolia.
Boryana.	semipinnatifida.
sorbifolia.	vespertilio.
variabilis.	

Mr. Smith, in his "Catalogue of the Ferns Cultivated at Kew," enumerates—

Pæcilopteris flagellifera, <i>J. Sm.</i>	Elaphoglossum conforme, <i>Schott.</i>
crispatula, <i>J. Smith.</i>	callæfolium, <i>J. Smith.</i>
Gymnopteris quercifolia, <i>Bernh.</i>	longifolium, <i>J. Smith.</i>
nicotianæfolia, <i>Presl.</i>	latifolium, <i>J. Smith.</i>
aliena, <i>Presl.</i>	scolopendrifolium, <i>J. Sm.</i>
Polybotrya osmundacea, <i>Hum.</i>	muscosum, <i>J. Smith.</i>
<i>and Bonpland.</i>	lepidotum, <i>J. Smith.</i>
acuminata, <i>Link.</i>	rubiginosum, <i>J. Smith.</i>
incisa, <i>Link.</i>	brachyneuron, <i>J. Smith.</i>
Lomariopsis sorbifolia, <i>Fee.</i>	apodum, <i>Schott.</i>
longifolia, <i>J. Smith.</i>	microlepis, <i>J. Smith.</i>

Kunze, in his "Index Filicum," enumerates—

*Acrostichum alatum*, *Fee*.  
*apodum*, *Kaulfuss*.  
*aureum*, *Linnæus*.  
*brevipes*, *Kunze*.  
*citrifolium*, *Linnæus*.  
*crassinerve*, *Kunze*.  
*crinitum*, *Linnæus*.  
*flagelliferum*, *Wallich*.  
*piloselloides*, *Presl*.  
*Schiedei*, *Kunze*.  
*sorbifolium*, *Linnæus*.  
*staphyleum*, *Link*.  
*glandulosum*, *Carmichael*.

*Acrostichum lingua*, *Raddi*.  
*inæquale*, *Willdenow*.  
*juglandifolium*, *Kaulfuss*.  
*Karstenianum*, *Kunze*.  
*longifolium*, *Jacquin*.  
*melanopus*, *Kunze*.  
*microlepis*, *Kunze*.  
*nicotianæfolium*, *Swartz*.  
*scolopendrifolium*, *Raddi*.  
*simplex*, *Swartz*.  
*villosum*, *Smith*.  
*viscosum*, *Swartz*.

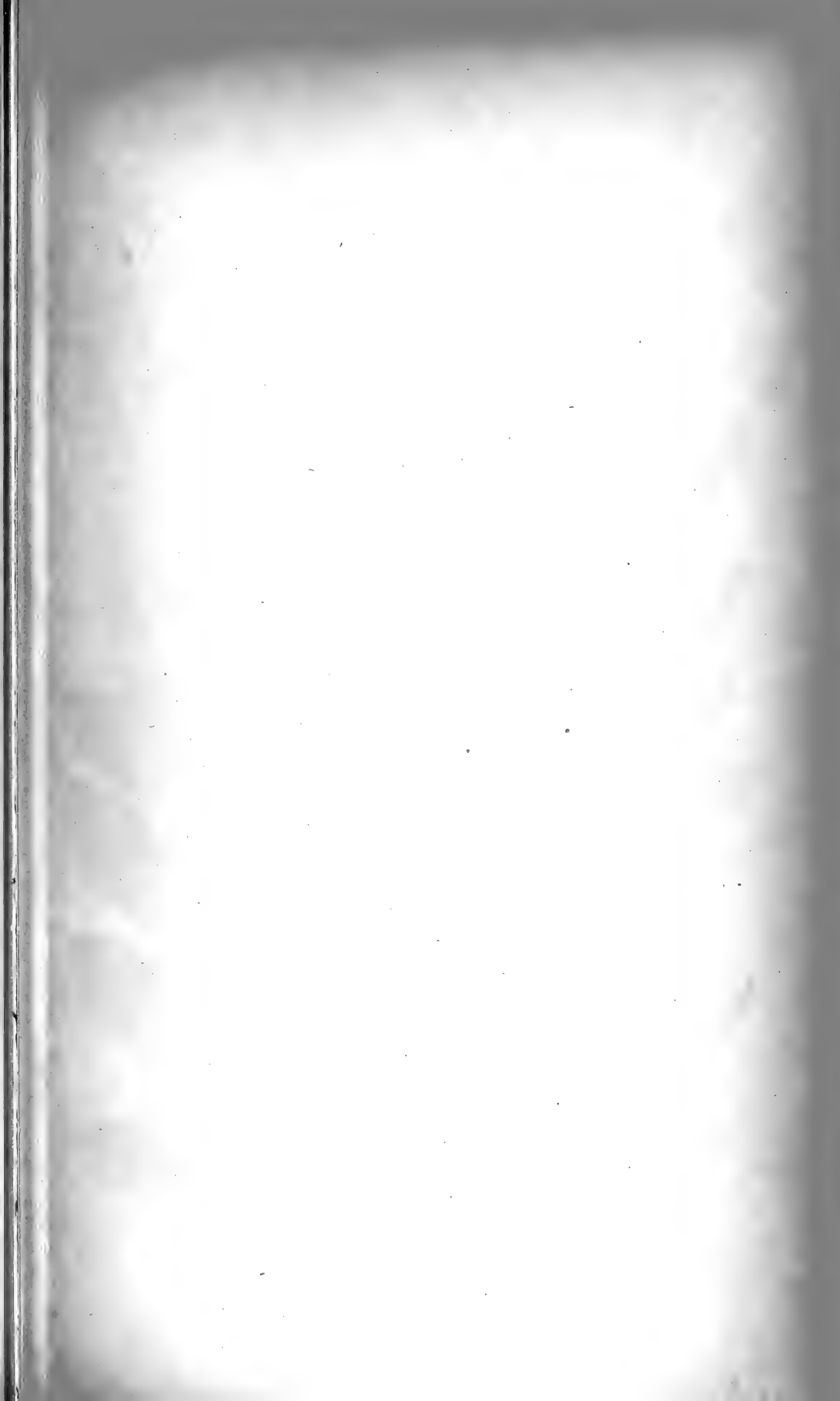
Presl, in his "Tentamen Pteridographiæ," mentions under

*Polybotrya* ten species.  
*Olfersia* sixty-eight species.  
*Aconiopteris* one species.  
*Campium* five species.

*Acrostichum* ten species.  
*Pæcilopteris* five species.  
*Gymnopteris* ten species.

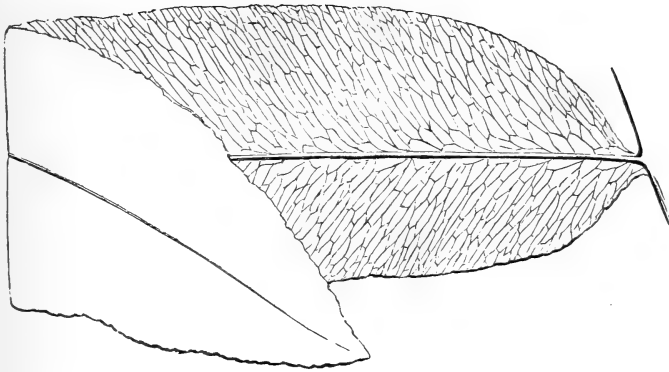








FROND AND FERTILE FROND OF *Adiantum* *sp.*  
XIII. 1895.



Pinna of barren Frond.

## ACROSTICHUM AUREUM.

LINNÆUS. SWARTZ. PLUMIER. LIEBMANN.  
 HUMBOLDT AND BONPLAND. NUTTALL. SCHKUHR. RADDI.  
 MOORE. HOOKER. J. SMITH. WILLDENOW. SPRENGEL.  
 DESVAUX. PRESL. KAULFUSS. LINK. BRACKENRIDGE.  
 KUNZE. WALLICH. ARRABIDA. MEYER. SPLITZGERBEN.  
 (*Not of BORY or CAVANILLES.*)

PLATE XLII. VOL. VII.

<i>Acrostichum fraxinifolium,</i>	R. BROWN. ( <i>Not of</i> PRESL.)
“ <i>emarginatum,</i>	HAMILTON. ROXBURGH.
“ <i>formosum,</i>	PRESL. SPRENGEL.
“ <i>crassifolium,</i>	WALLICH. PRESL.
	( <i>Not of</i> GAUDICHAUD.)
“ <i>obliquum,</i>	BLUME. PRESL. SMITH.
“ <i>rigens,</i>	PRESL.
“ <i>speciosum,</i>	BOJER. WILLDENOW. SPRENGEL.
“ “	DESVAUX. PRESL, IN PART.
“ “	BLUME. KUNZE.
VOL. VII.	Q

<i>Acrostichum marginatum</i> ,	SCHKUHR. MEYER. (Not of WALLICH or LINNÆUS.)
“ <i>maritimum</i> ,	GUIENZIUS.
“ <i>juglandifolium</i> ,	KAULFUSS. KUNZE.
“ <i>scalpturatum</i> ,	PRESL. (Not of KUNZE.)
“ <i>Urvillei</i> ,	PRESL.
“ <i>inæquale</i> ,	WILLDENOW. DESVAUX.
“ “	BLUME. PRESL. KUNZE.
“ <i>Wightianum</i> ,	PRESL. (Not of WALLICH.)
“ <i>Cayennense</i> ,	PRESL.
<i>Chrysodium aureum</i> ,	FEE. METTENIUS.
“ <i>vulgare</i> ,	FEE. METTENIUS.
“ <i>hirsutum</i> ,	FEE.
“ <i>scalpturatum</i> ,	FEE.
“ <i>Urvillei</i> ,	FEE.
“ <i>inæquale</i> ,	FEE.
“ <i>Cayennensis</i> ,	FEE.
“ <i>speciosum</i> ,	FEE.

*Acrostichum*—From the Greek, *akros*—high, *stichos*—order.  
*Aureum*—Golden.

A HANDSOME species, growing in very damp places, and by no means common in cultivation.

An evergreen stove species.

Raised from spores in the Royal Gardens, Kew, in 1838.

Mr. Moore mentions the following varieties:—*Minus*, *rigens*, *hirsutum*, *marginatum*, *scalpturatum*, *Urvillei*, *inæquale*, and *speciosum*.

The normal form is found in the West Indies, Cuba, Jamaica, Martinique, Guadaloupe, Florida, Mexico, Guatemala, Panama, Venezuela, Philippine and the Islands of Tongataboo, Feejee, Society, Galapagos, and New Holland.

Variety *minus*.—A native of Java, Ceylon, India, Philippines, Sunderbund, Bourbon, Brazil, the Island of Sidheé, and Neilgherries.

Variety *rigens*.—Native of Bourbon, Mauritius, Madagascar, Natal, Fernando Po, and Marianne Isles.

Variety *hirsutum*.—Native of Brazil, Guiana, Guatemala, St. Domingo, Jamaica, and the Cape of Good Hope.

Variety *marginatum*.—Native of Brazil, Venezuela, and Essequibo.

Variety *Urvillei*.—Native of Moluccas, Guinea, Tahiti, New Holland, the Friendly Isles, North Caledonia, and Port Essington.

Variety *inaequale*.—India, Java, Philippines, Penang, Singapore, Marianne Island, Panama, Mexico, Guinea, Surinam, and Cayenne.

Variety *speciosum*.—India, Ceylon, Java, Philippines, and New Holland.

This very handsome Fern has its fronds glabrous, the sterile ones pinnate, the pinnæ being lanceolate-acuminate and somewhat membranous; the basal ones petiolate, with a wedge-shaped base; the upper ones adnate at their inferior base, and decurrent. Habit reclining.

The fertile fronds contracted, pinnate, the whole under side of the frond being soriferous, except occasionally that two or three of the lower pairs of pinnæ will be sterile.

Sori amorphous.

Veins reticulated, and forming elongated areoles.

Rhizoma erect and caudiciform.

Length of frond from seventy to one hundred and twenty inches; colour light green.

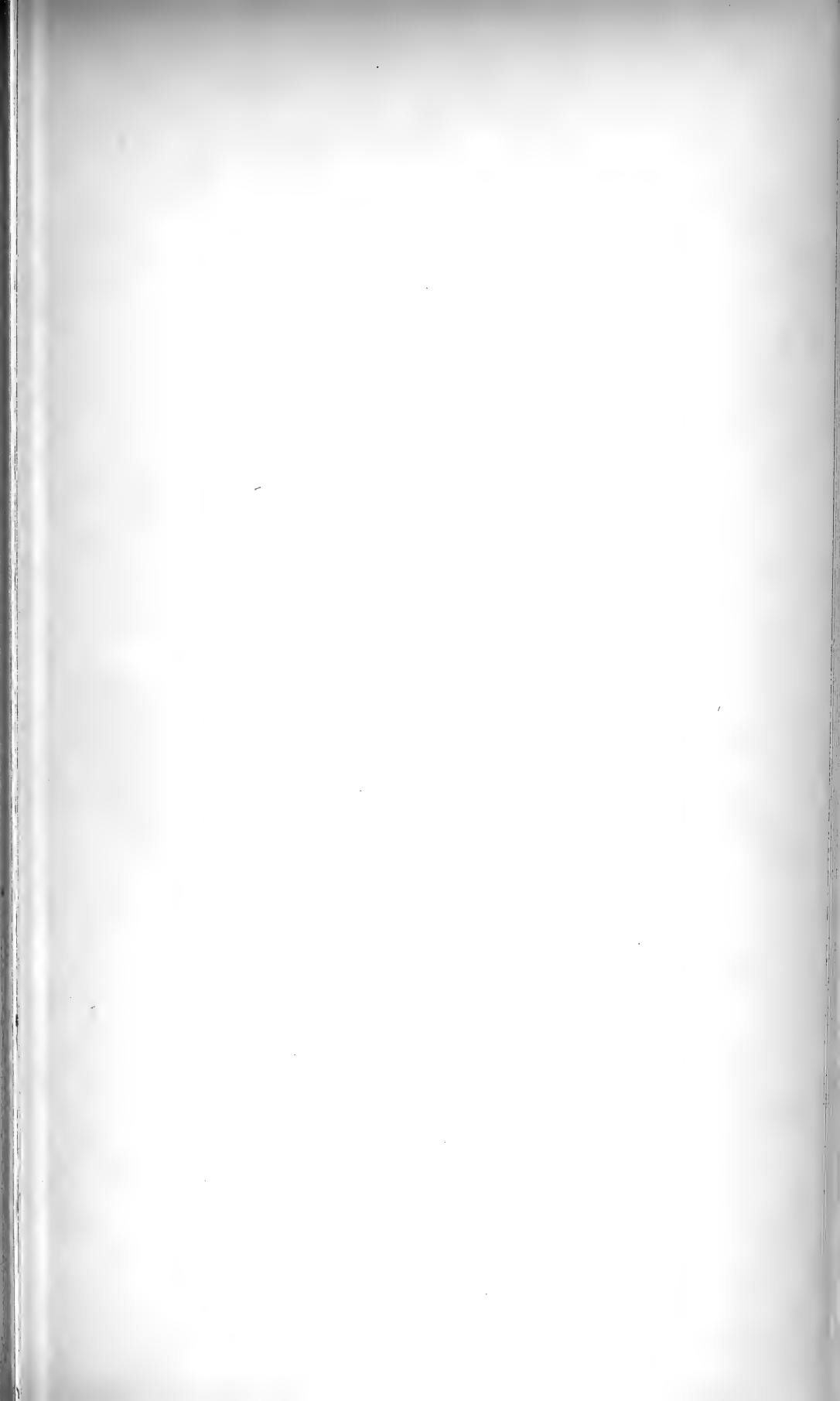
As this Fern grows in morasses and water-courses, it is necessary to supply it with abundance of water, placing the pot in a pan of water, and potting with a mixture of turfy loam and sand, and growing it in stove heat: by this means a magnificent plant may be obtained.

For a plant of this species I am indebted to M. Schott, Director of the Imperial Gardens of Schonbrunn, Vienna; and for fronds to the same gentleman, Mr. G. Norman, of Hull, and Sir W. J. Hooker, Director of the Royal Botanic Gardens, Kew.

It may be procured of Messrs. Sim, of Foot's Cray; E. G. Henderson, of Wentworth; and Booth, of Hamburg.

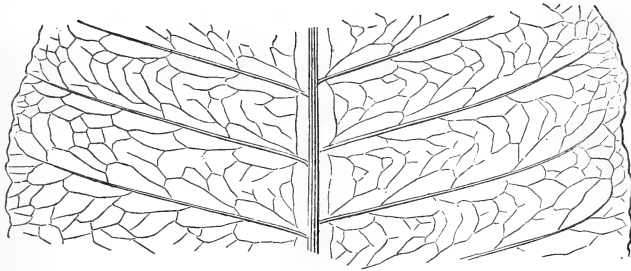
The illustrations are from fronds sent me by Mr. Smith, Curator of the Royal Gardens, Kew.











Portion of a pinna of barren Frond—under side.

## ACROSTICHUM FLAGELLIFERUM.

WALLICH. HOOKER AND GREVILLE. KUNZE. BLUME.

PLATE XLIII. VOL. VII.

<i>Pæcilopteris flagellifera</i> ,	J. SMITH.
“ <i>heteroclita</i> ,	MOORE. PRESL.
<i>Cyrtogonium flagelliferum</i> ,	J. SMITH.
“ “	MOORE AND HOULSTON.
<i>Heteronevron heterocliton</i> ,	FEE.
<i>Acrostichum heteroclitum</i> ,	PRESL.

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.  
*Flagelliferum*—Rod-bearing.

### IN THE SECTION PÆCILOPTERIS OF AUTHORS.

A FREE-GROWING species, somewhat difficult to manage successfully.

An evergreen stove Fern.

Native of the East Indies.

Introduced into the Royal Gardens, Kew, in 1828, having been received from Dr. Wallich.

The fronds are proliferous. Sterile frond glabrous, pinnate, the pinnæ being petiolate, ovate or oblong-acuminate, undulated,

and glabrous; the terminal pinnæ at least twelve inches in length, becoming narrower towards the apex, near which it is proliferous. Fertile frond contracted and pinnate; pinnæ oblong-acuminate and petiolate, the terminal one narrow and elongated.

Lateral, and adherent to a creeping rhizoma.

Sori amorphous.

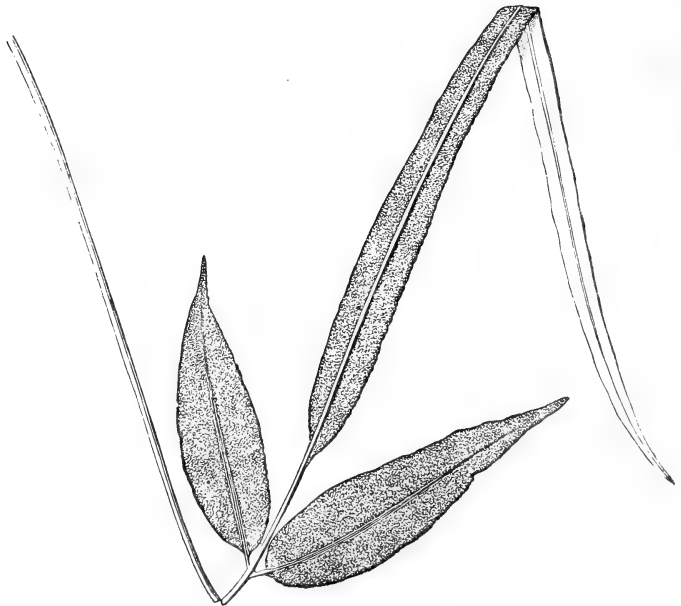
Veins pinnate, the venules being arcuately anastomosing.

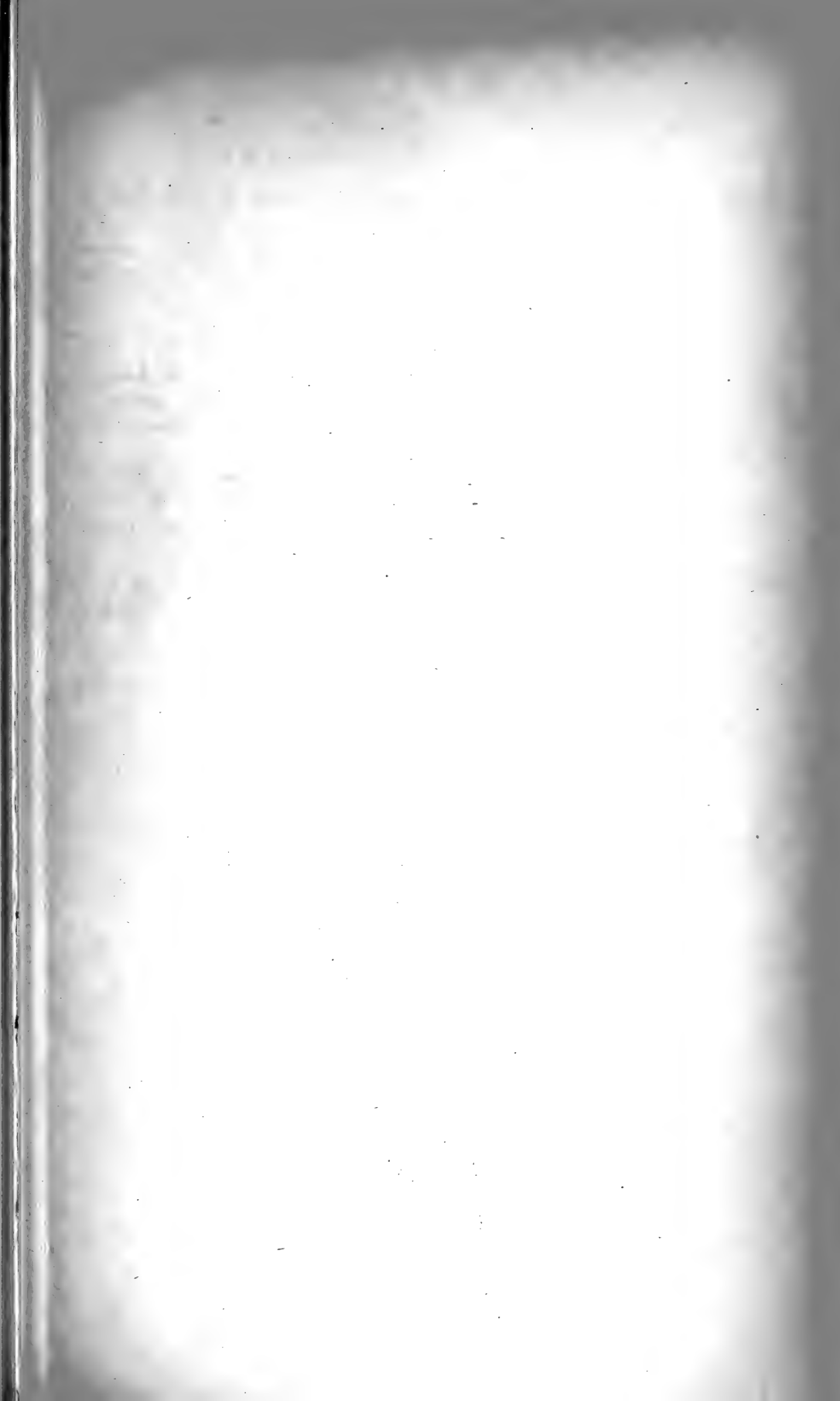
Length of sterile frond from eighteen to thirty inches, of fertile frond from twelve to eighteen inches; colour a dull heavy green.

For a plant of this Fern my thanks are due to Mr. Stewart, late gardener at Sudbury Park; and for fronds to M. Schott, of the Imperial Gardens, Schonbrunn; Mr. Gray, of St. Thomas', Exeter; and to Mr. G. Norman, of Hull.

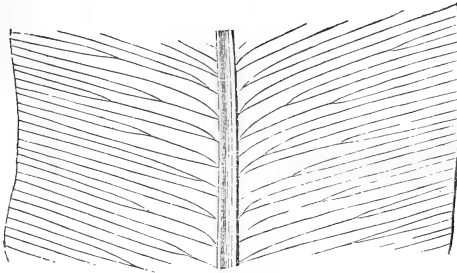
It may be procured of Messrs. Sim, of Foot's Cray; E. G. Henderson, of Wentworth; Booth, of Hamburg; and Cooling, of Derby.

The illustration is from a frond sent by Mr. Gray, of St. Thomas', Exeter. The following engraving is diminished from a fertile frond, sent by M. Schott.









Portion of barren Frond—under side.

## ACROSTICHUM CONFORME.

SWARTZ. KAULFUSS. SPRENGEL. WILLDENOW.  
LINK. BLUME. SCHLECHTENDAL. FEE.

PLATE XLIV. VOL. VII.

<i>Elaphoglossum conforme,</i>	SCHOTT. J. SMITH. MOORE.
<i>Acrostichum æmulum,</i>	BLUME. ( <i>Not of KAULFUSS</i> <i>or MORITZ.</i> )
“ <i>angustatum,</i>	SCHRADER. SCHKUHR.
“ “	SCHLECHTENDAL, <i>a variety.</i>
“ <i>conforme var. angustum,</i>	KUNZE, <i>a variety.</i>
“ <i>glandulosum,</i>	CARMICHAEL. KUNZE.
“ “	HOOKE AND GREVILLE, <i>a variety.</i>
“ <i>latifolium,</i>	SWARTZ, IN PART. ( <i>Not of SIEBER.</i> )
“ <i>oblongum,</i>	DESVAUX.
<i>Olfersia conformis,</i>	PRESL.
“ <i>angustata,</i>	PRESL.

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.  
*Conforme*—Conformed.

IN THE SECTION ELAPHOGLOSSUM OF AUTHORS.

A HANDSOME dwarf species, with very thick shining fronds. An evergreen stove Fern.

Native of Jamaica, Java, South Africa, and the Cape of Good Hope.

Introduced into the Royal Gardens, Kew, in 1841, by Mr. D. Cameron.

Fronds erect; the sterile ones glabrous, coriaceous, simple, and oblong-acuminate in form, the base being attenuated. Fertile fronds small, and ovate or oblong-acuminate in form.

Rhizoma scaly and creeping.

Sori amorphous, densely covering the under side of the frond.

Veins forked and free.

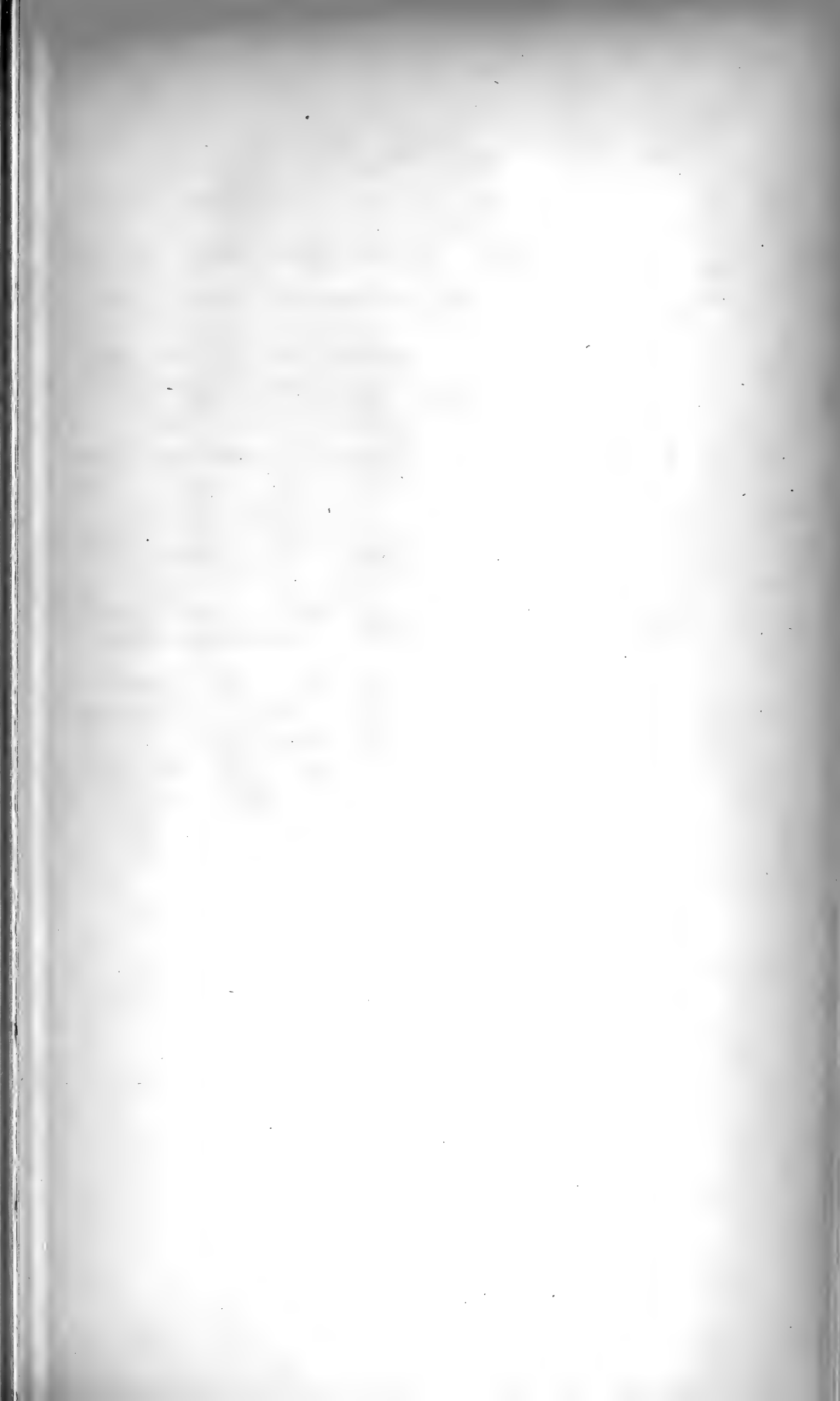
Length of sterile frond from six to twelve inches, of fertile frond from six to ten inches; colour a rich dark shining green.

Articulated near the rachis.

For a plant of this Fern my thanks are due to Mr. J. Henderson, of Wentworth; and for fronds to Mr. G. Norman, of Hull.

It may be procured of Messrs. Veitch, of Chelsea; Rollisson, of Tooting; Sim, of Foot's Cray; A. Henderson, of Pine-apple Place; Booth, of Hamburg; and Cooling, of Derby.

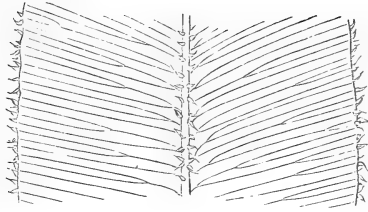
The illustrations are from fronds sent by Mr. Joseph Henderson, of Wentworth.





FRONCHUS SCOLOPENDRIOLIUM.





Portion of barren mature Frond—under side.

## ACROSTICHUM SCOLOPENDRIFOLIUM.

RADDI. KUNZE. LINK. FEE.

PLATE XLV. VOL. VII.

*Elaphoglossum scolopendrifolium*,  
*Acrostichum fimbriatum*,  
*Olfersia scolopendrifolia*,

J. SMITH. MOORE.  
 BERLIN GARDENS.  
 PRESL.

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.  
*Scolopendrifolium*—Scolopendrium-leaved.

IN THE SECTION ELAPHOGLOSSUM OF AUTHORS.

A HANDSOME dwarf species.

An evergreen stove Fern.

Native of Brazil.

Introduced into the Royal Gardens, Kew, in the year 1841, having been received from the Messrs. Loddiges.

Fronds simple. Sterile frond oblong-lanceolate and acuminate, the stipes being one-third of the length of the frond, and undulated; the stipes, rachis, and margin of the frond covered with long cordate scales of a brown colour. Fertile frond much smaller, oblong-lanceolate, and acuminate, the stipes

being two-thirds of the length of the frond. Fertile fronds erect in habit. Articulated near the base of the stipes.

Rhizoma short, creeping, and scaly.

Sori amorphous, the under side being densely covered with it.

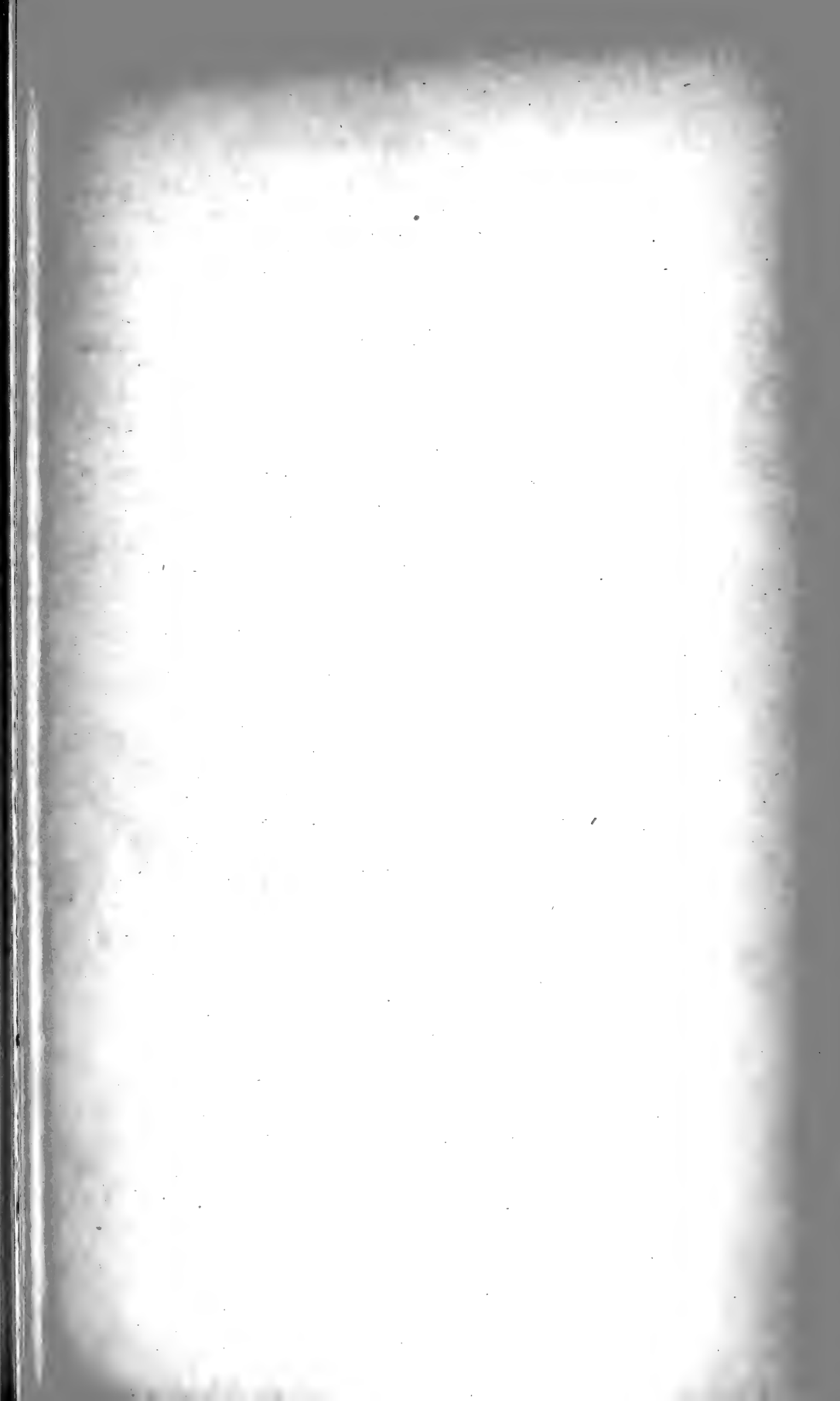
Veins forked, the apices free and clavate.

Length of frond, sterile twelve to fifteen inches, fertile twelve inches; colour pale green.

My thanks are due to Messrs. Rollisson, of Tooting, for a plant of this Fern, and to Mr. J. Henderson, of Wentworth, for fronds.

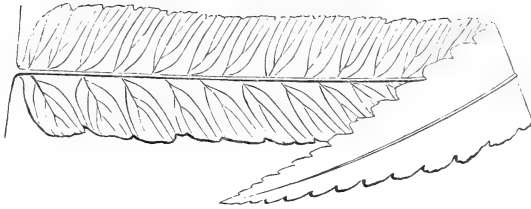
It may be procured of Messrs. Rollisson, of Tooting; Sim, of Foot's Cray; Jackson, of Kingston; and A. Henderson, of Pine-apple Place.

The illustrations are from fronds forwarded by Mr. Joseph Henderson, of Wentworth.





*Adiantum species*  
M. J. Smith



Pinna of barren Frond.

## ACROSTICHUM CRISPATULUM.

WALLICH. (*Not of FEE.*)

PLATE XLVI. VOL. VII.

*Pæcilopteris crispatula*,  
*Cyrtogonium crispatum*,

J. SMITH. MOORE.  
 MOORE AND HOULSTON.

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.  
*Crispatulum*—Curled.

### IN THE SECTION PÆCILOPTERIS OF AUTHORS.

AN exceedingly handsome uncommon species.

An evergreen stove Fern.

Native of the East Indies and the Island of Ceylon.

The fronds, which are somewhat erect, are pinnate, lanceolate-acuminate in form, the pinnæ being petiolate, undulated, glabrous, and linear-acuminate in form, the margin crenate, with a row of spinulose teeth. The fertile pinnæ narrow.

Stipes scaly.

Lateral, and adherent to a creeping scaly rhizoma. •

Sori amorphous.

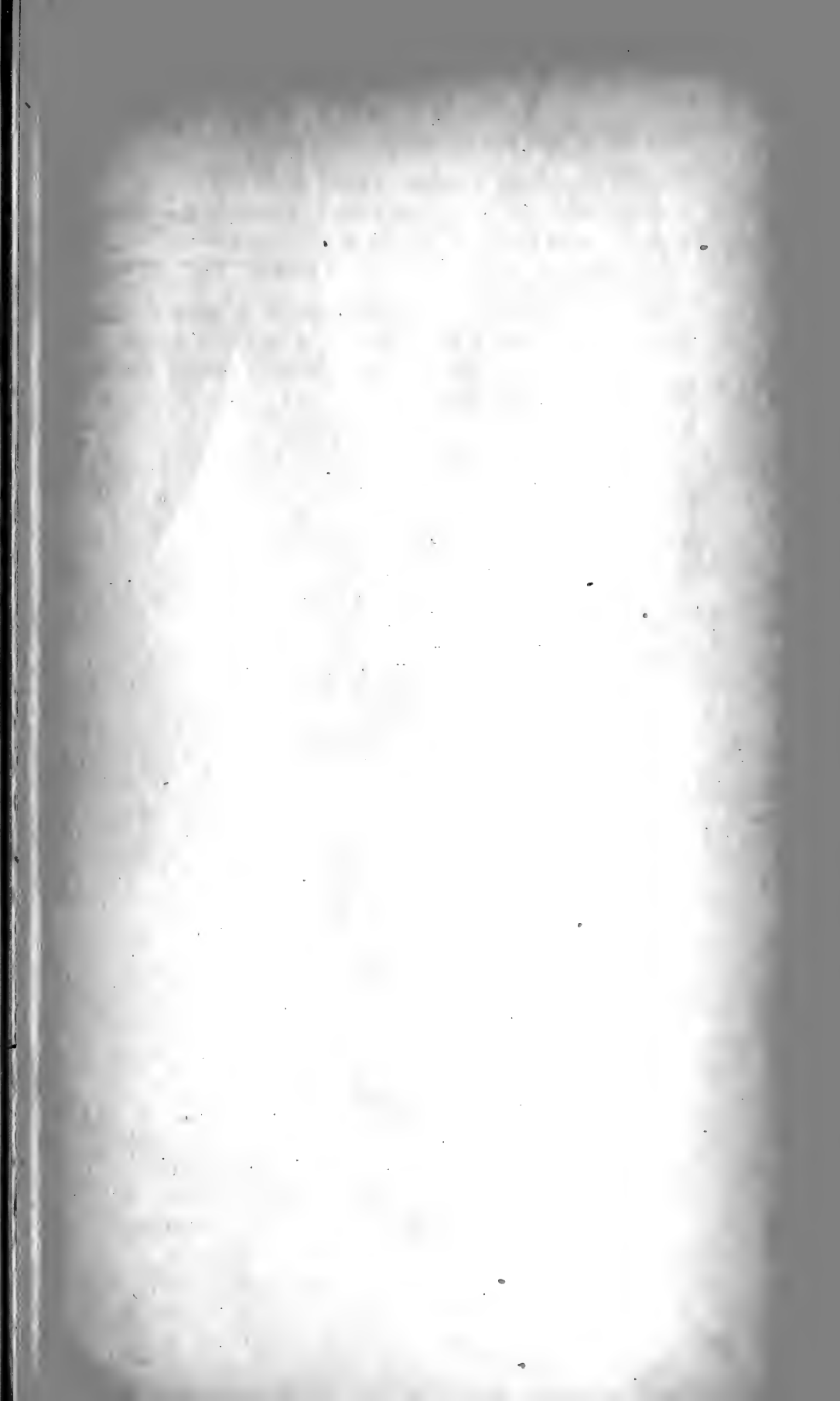
Veins pinnate and arcuately anastomosing.

Length of sterile frond from eighteen to twenty-four inches, of fertile frond twelve inches; colour deep green.

My thanks are due to Mr. Joseph Henderson, of Wentworth, for a plant and fronds of this species.

It is in the Catalogues of Messrs. Veitch, of Chelsea; Sim, of Foot's Cray; and E. G. Henderson, of St. John's Wood.

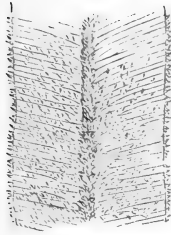
The illustration is from a frond forwarded by Mr. Joseph Henderson, of Wentworth.





STEM FRIGIDUM.  
XLVII—vol. 7.





Portion of barren Frond—under side.

## ACROSTICHUM FRIGIDUM.

LINDEN.

PLATE XLVII. VOL. VII.

<i>Acrostichum rubiginosum, ?</i>	FEE.
“ <i>Schiedei, ?</i>	KUNZE.
“ <i>brachyneuron,</i>	FEE.
<i>Elaphoglossum frigidum,</i>	J. SMITH. MOORE.
“ <i>viscosum,</i>	OF GARDENS. ( <i>Not of</i> SCHOTT.)
“ <i>rubiginosum, ?</i>	J. SMITH.
“ <i>brachyneuron,</i>	J. SMITH.

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.

*Frigidum*—Frigid.

### IN THE SECTION ELAPHOGLOSSUM OF AUTHORS.

AN exceedingly interesting species, and when well grown a compact handsome Fern: more generally known in gardens as the *Elaphoglossum viscosum*. The habit of the plant is good, the strap-shaped fronds being crowded, weeping, and graceful.

An evergreen stove Fern.

Native of Tropical America.

The frond, which is simple, is lanceolate-acuminate in form, rich green in colour, but rendered somewhat glaucous by the great number of stellate whitish scales which cover the whole upper surface of the frond; beneath these scales are brownish red.

Veins internal, indistinct, and forked.

Stipes and rachis scaly; midrib flat above, rounded and prominent on under side of frond.

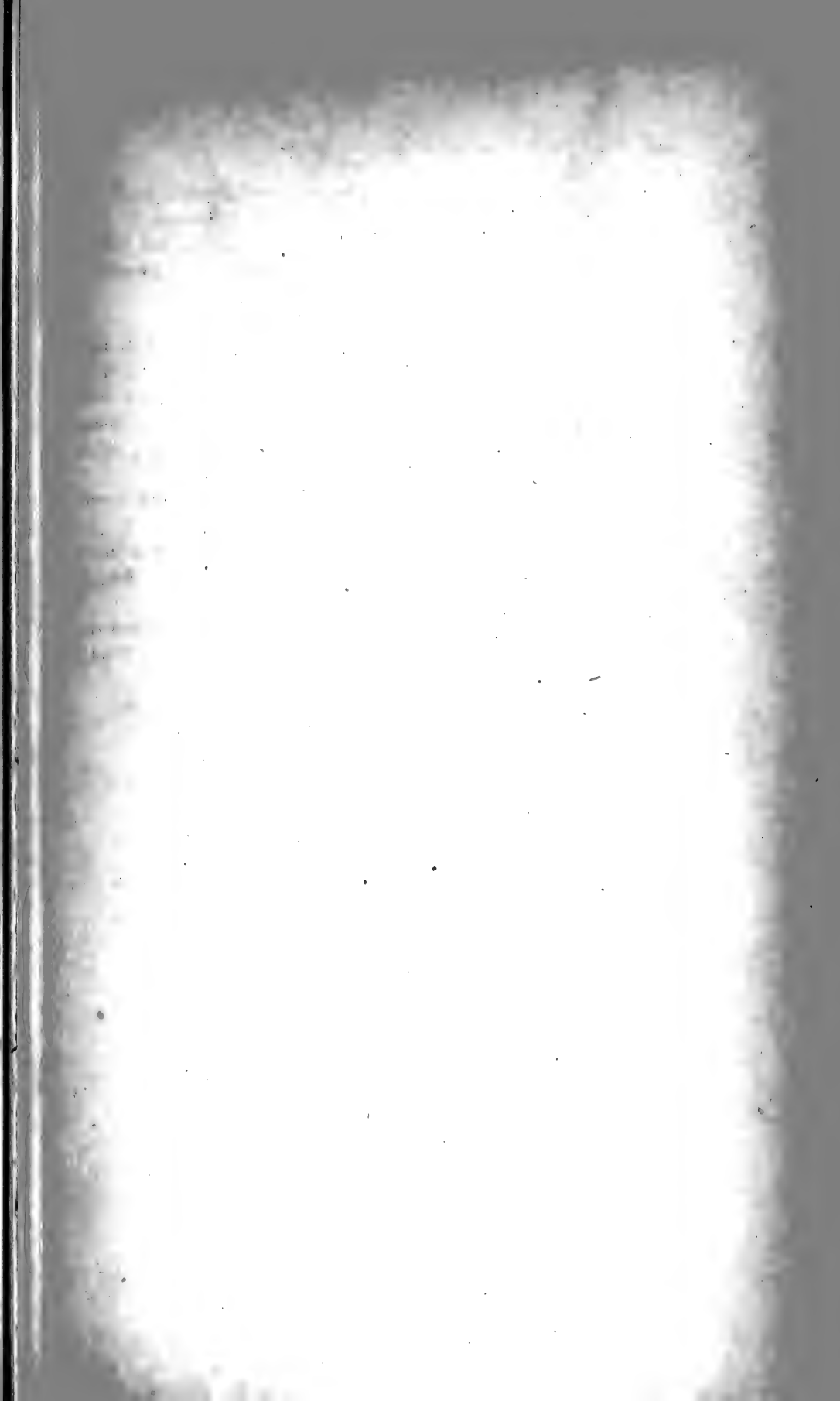
Sori amorphous, and covering the whole of the under side of the frond. Fertile frond contracted. Sometimes the lower portion of a frond will be fertile, whilst near the apex it is barren and broad.

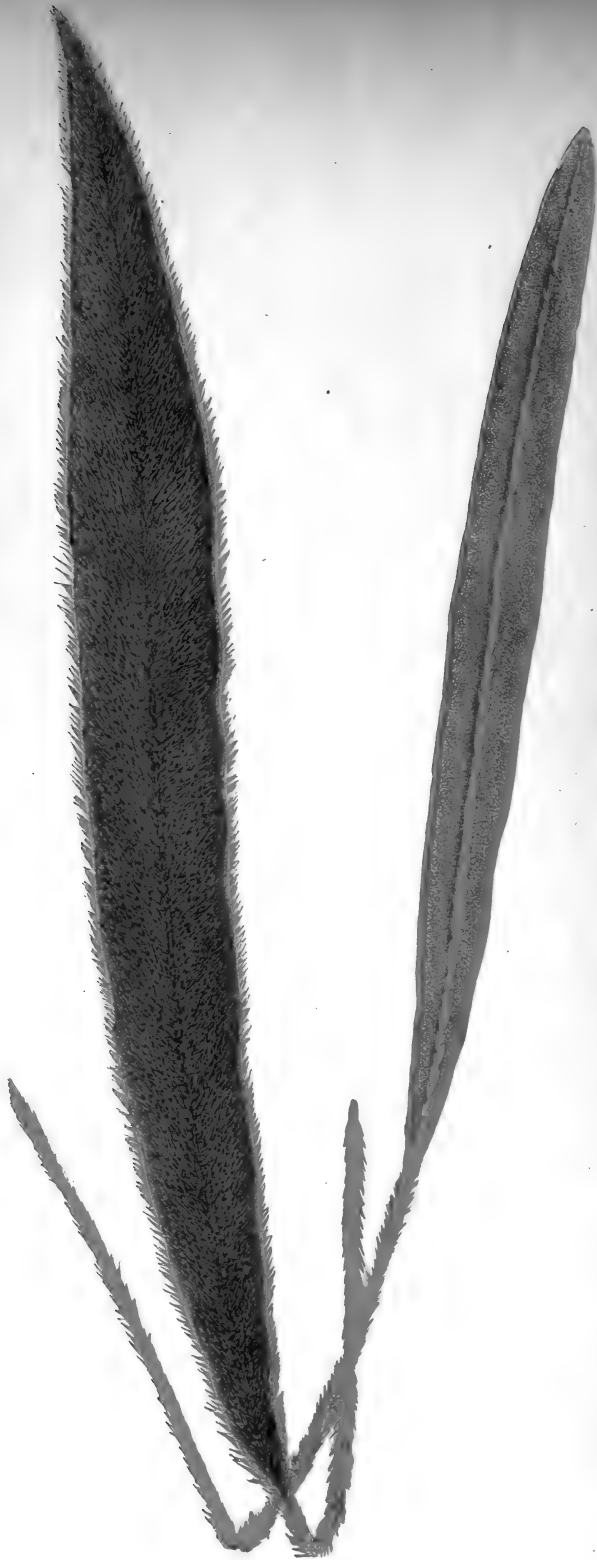
Length of frond about fifteen inches, of which the lower three inches is the stipes.

For a plant my thanks are due to Messrs. Booth, of Hamburg; and for fronds to Mr. G. Norman, of Hull, and Mr. Joseph Henderson, of Wentworth.

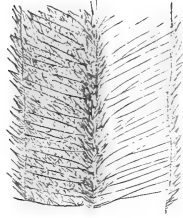
Included in the Catalogues of Messrs. Veitch, of Chelsea; Rollisson, of Tooting; Jackson, of Kingston; Sim, of Foot's Cray; and Booth, of Hamburg.

The illustrations are from a plant in my own collection.





ACROSTICHUM SQUAMOSUM.



Portion of barren Frond—under side.

ACROSTICHUM SQUAMOSUM.

SCHKUHR. SWARTZ. (*Not of PRESL or SPRENGEL.*)

PLATE XLVIII. VOL. VII.

<i>Elaphoglossum squamosum,</i>	MOORE.
“ <i>muscosum,</i>	J. SMITH.
<i>Acrostichum muscosum,</i>	SWARTZ. WILLDENOW.
“ “	KAULFUSS. FEE.
“ <i>vestitum,</i>	HOOKER AND GREVILLE.
	( <i>Not of SCHLECHTENDAL</i>
	<i>or LIEBMANN.</i> )
<i>Olfersia muscosa,</i>	PRESL.

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.  
*Squamosum*—Scaly.

IN THE SECTION ELAPHOGLOSSUM OF AUTHORS.

A remarkable-looking Fern.

An evergreen stove plant.

Native of Madeira and Tropical America.

Fronds simple. Barren frond elliptical, attenuated downwards into a short stipes and upwards into a somewhat obtuse apex.

Fronds scarcely an inch wide; stipes an inch in length. Thickly covered both above and below with variously-shaped, ciliated, closely adpressed scales, which are brownish or fulvous in the centre, with white ciliæ.

The fertile frond much narrower, on a long stipes about equal in length with the frond; the width of the fertile frond half an inch. Apex obtuse, and, as in the barren frond, densely covered with scales. The midrib and margin of both fronds are more thickly covered with scales of a larger size.

Rhizoma creeping.

Sori amorphous, and covering the whole under side of the frond.

Length of barren frond five to six inches, of fertile frond from four to five inches; colour pale green.

For fronds and much information my thanks are due to Mr. Joseph Henderson, of Wentworth.

This plant must not be confounded with the following:—*Acrostichum squamipes* of Hooker, which is the *Elaphoglossum squamipes* of Moore; the *A. squamatum* of Swartz, which is the *E. squamatum* of Moore; the *A. squamosum* of Cavanilles, which is the *E. squamatum* of Moore; the *A. squamosum* of Presl, which is the *E. lepidotum* of Moore; the *A. squarrosom* of Kaulfuss, which is the *E. squarrosom* of Moore; or the *A. vestitum* of Schlechtendal or Liebmann, which is the *A. fulvum* of Martens and Galleotti.

It may be procured of Messrs. Veitch, of Chelsea; Sim, of Foot's Cray; and E. G. Henderson, of St. John's Wood.

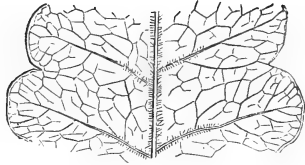
The illustrations are from fronds forwarded by Mr. Henderson, of Wentworth.





1. *Adiantum punctatum* L.  
2. *Adiantum punctatum* L.





Portion of mature Frond—under side.

## ACROSTICHUM QUERCIFOLIUM.

RETZIUS. SWARTZ. SCHKUHR. SPRENGEL.

PLATE XLIX. VOL. VII.

<i>Gymnopteris quercifolia</i> ,	BERNHARDI. PRESL.
“ “	J. SMITH. MOORE.
“ <i>Neitneri</i> ,	SIM'S CATALOGUE.
<i>Osmunda trifida</i> ,	JACQUIN.
<i>Ophioglossum ceilanicum</i> ,	HOUTTUYN.
<i>Dendroglossa quercifolia</i> ,	FEE.

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.  
*Quercifolium*—Oak-leaved.

### IN THE SECTION GYMNOPTERIS OF AUTHORS.

AN uncommon and singular dwarf species, having short-stalked, nearly prostrate, oak-leaf-shaped, inch wide, barren fronds; rather hirsute, with short brown hairs.

An evergreen stove Fern.

Native of the Island of Ceylon.

Fronds ternate and lateral. The fertile fronds very much contracted, linear, sub-repand, halbert-shaped, erect, and on lengthy footstalks.

Veins pinnate; venules compoundly anastomosing.

Rhizoma creeping slowly.

Sori amorphous, copious, and covering the whole under side of the frond.

Length of frond from three to six inches; the fertile frond being nearly twice the length of the sterile one.

For a plant my thanks are due to Mr. R. Sim, of Foot's Cray; and for fronds both to Sir W. J. Hooker, of the Royal Gardens, Kew, and to Mr. R. Sim.

It may be procured of Mr. R. Sim, of Foot's Cray.

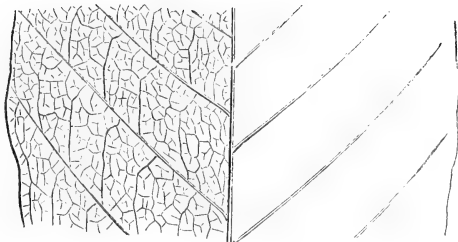
The illustration is from a plant in my own collection.





*Quercus agrifolia* Nutt.

Plate 100



Portion of mature Frond—under side.

ACROSTICHUM NICOTIANÆFOLIUM.

SWARTZ. WILLDENOW. SPRENGEL. DESVAUX.  
HEWARD. KUNZE.

PLATE L. VOL. VII.

<i>Gymnopteris nicotianæfolia</i> ,	PRESL. J. SMITH. FEE.
“ “	MOORE AND HOULSTON. SCHOTT.
<i>Anapausia nicotianæfolia</i> ,	MOORE.
<i>Chrysodium nicotianæfolium</i> ,	METTENIUS.

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.  
*Nicotianæfolium*—Tobacco-leaved.

IN THE SECTION GYMNOPTERIS OF AUTHORS.

A PRETTY and by no means common Fern.  
An evergreen stove species.  
Native of the West Indies, Jamaica, Cuba, Trinidad, Guiana,  
and Para.  
Introduced into the Royal Gardens, Kew, in the year 1843,  
having been received from Mr. N. Wilson.  
Barren and fertile fronds different.

Sterile frond glabrous, pinnate, and shining; the pinnæ being oblong-acuminate, undulated, large, and somewhat membranous; the basal ones petiolate, and roundish at the base, the upper pinnæ adnate-decurrent. Fertile frond pinnate or bipinnate below; the pinnæ oblong-ovate; the basal ones petiolate and the upper ones adnate.

Stipes covered with narrow scales, scaly near the base.

Fronds lateral, and adherent to a creeping rhizoma. Fertile fronds erect in habit.

Sori amorphous.

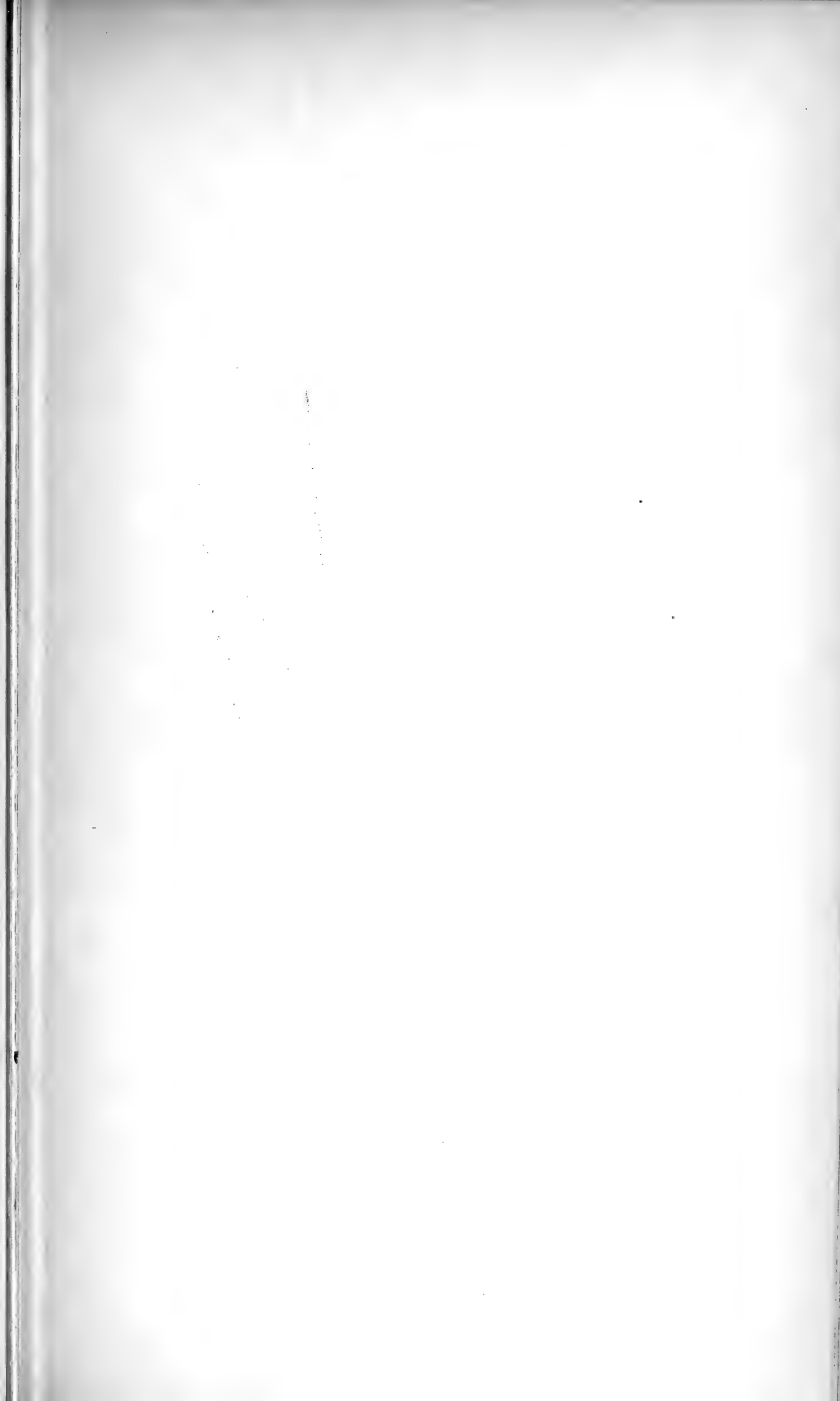
Veins pinnate; venules compoundly anastomosing.

Length of frond from twelve to thirty inches; colour bright green.

For a frond my thanks are due to M. Schott, Director of the Imperial Gardens of Schonbrunn, near Vienna.

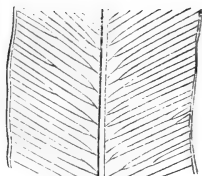
It is in the Catalogues of Messrs. Sim, of Foot's Cray; A. Henderson, of Pine-apple Place; E. G. Henderson, of Wentworth; and Booth, of Hamburg.

The illustration is from M. Schott's frond.









Portion of mature Frond—under side.

ACROSTICHUM LONGIFOLIUM.

JACQUIN. PLUMIER. SPRENGEL. (*Not of* BURMANN.)  
KUNZE.

PLATE LI. VOL. VII.

<i>Elaphoglossum longifolium</i> ,	J. SMITH.
“ <i>crassinerve</i> ,	MOORE.
<i>Olfersia longifolia</i> ,	MOORE. PRESL.
<i>Acrostichum latifolium</i> ,	SWARTZ, IN PART.
	( <i>Not of</i> SIEBER.)
<i>Aconiopteris longifolia</i> ,	FEE.

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.  
*Longifolium*—Long-leaved.

IN THE SECTION ELAPHOGLOSSUM OF AUTHORS.

AN interesting dwarf species, more generally known in gardens as *Elaphoglossum latifolium*.

An evergreen stove Fern.

Native of the West Indies and Tropical America.

Introduced into the Royal Gardens, Kew, in 1841, having been received from Mr. D. Cameron.

Fronds simple and glabrous. Sterile fronds coriaceous, lan-

ceolate-acuminate in form, slightly undulated, having the base attenuated, and bright green in colour. Fertile fronds erect, also lanceolate-acuminate, attenuated at the base, smaller than the barren frond, and somewhat narrower.

Both fronds articulated immediately above the base of the stipes. Fronds lateral.

Rhizoma creeping and scaly.

Sori amorphous, densely covering the whole under surface, except the midrib, the contrast between the black sori and the green midrib being very conspicuous.

Veins forked and free, internal and indistinct.

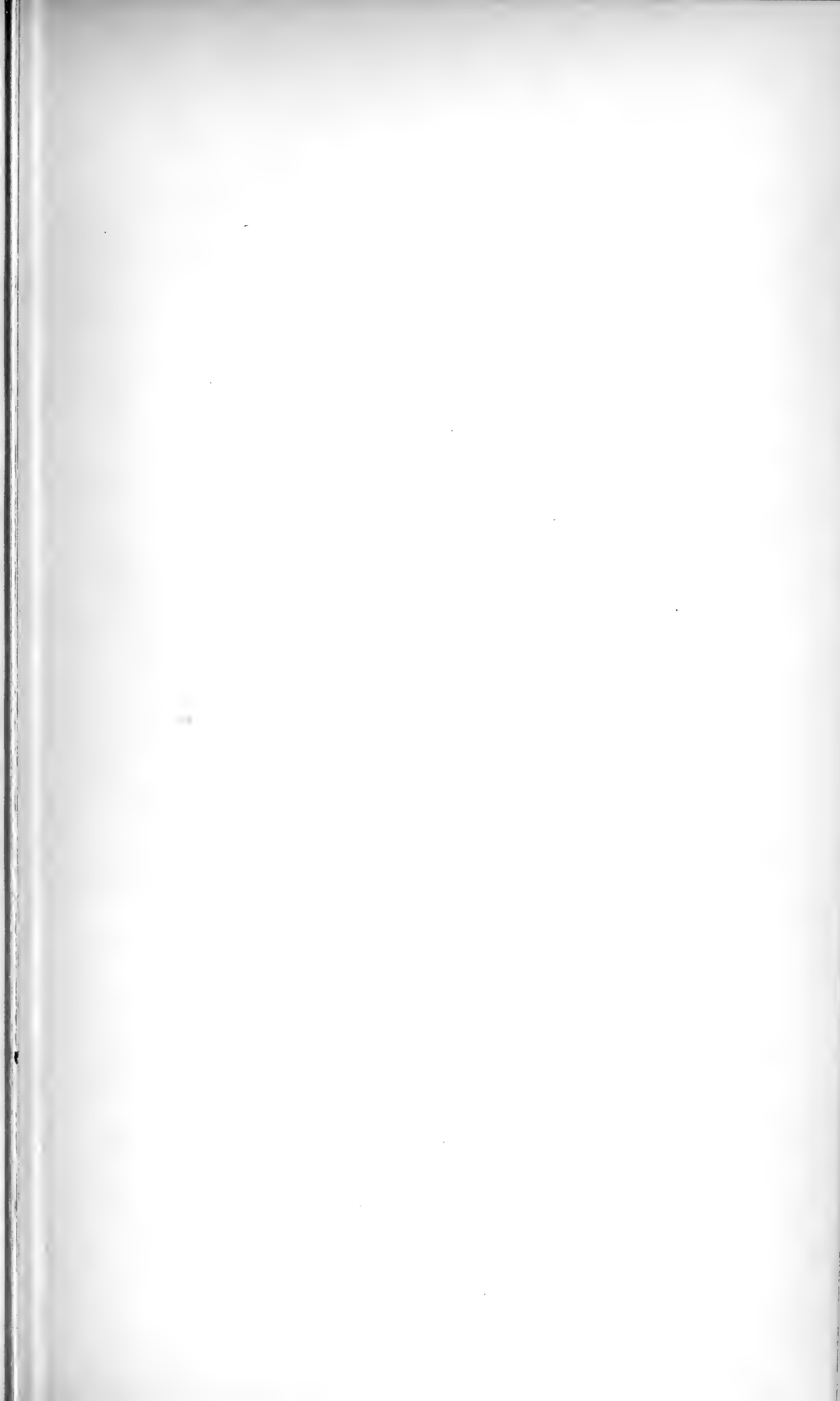
Length of frond from twelve to eighteen inches.

Rachis and stipes, as well as the frond itself, scattered over with large brown scales.

For a plant my thanks are due to Mr. P. Clarke, Director of the Royal Botanic Gardens, Glasgow.

It may be procured of Messrs. Sim, of Foot's Cray; Rollisson, of Tooting; and Jackson, of Kingston.

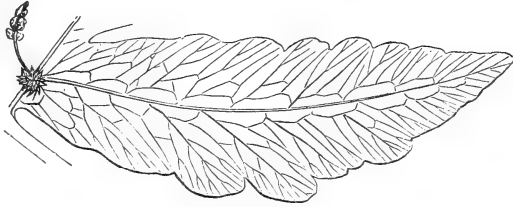
The illustration is from a plant in my own collection.











Portion of mature Frond, upper side, with young plant growing upon it.

## ACROSTICHUM AURITUM.

SWARTZ. (*Not of* POIRET.)

PLATES LII AND LIII. VOL. VII.

*Acrostichum floridum*,

POIRET.

*Stenosemia aurita*,

PRESL. J. SMITH. FEE.

“ “

MOORE. RUMPHIUS.

*Polybotrya aurita*.

BLUME.

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.

*Aurita*—Ear-leaved.

### IN THE SECTION STENOSEMIA OF AUTHORS.

AN exceedingly pretty dwarf Fern, and scarcely yet known in ordinary collections.

An evergreen stove species.

Native of Java.

Fronds ternately-pinnate; the pinnæ being laciniately-lobed and bulbiferous, giving the plant a very interesting appearance; short-stalked, prostrate in habit, and three inches in width. Fertile segments linear, rachiferous, convolute, and nearly wholly sporangiferous; long-stalked, erect in habit, and much contracted.

Veins pinnate; the lower venules transversely anastomosing, and forming elongated costal areoles, the superior venules being free.

Fronds erect; vernation fasciculate.

Length of frond from five to ten inches.

The fertile fronds all rise from a crown, giving the plant a very pretty appearance.

Sori confluent, covering the whole of the frond.

For fronds my thanks are due to Mr. J. Smith, Curator of the Royal Gardens, Kew.

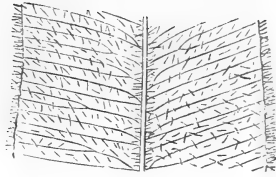
It may be procured of Messrs. Veitch, of Chelsea; Sim, of Foot's Cray; and Booth, of Hamburg.

The illustrations are from Mr. Smith's fronds.









Portion of mature Frond—under side.

## ACROSTICHUM VILLOSUM.

SWARTZ. (*Not of GAUDICHAUD nor SIEBER.*) KUNZE?  
SPRENGEL. FEE. LAMARCK. HOOKER AND GREVILLE.

PLATE LIV. VOL. VII.

*Elaphoglossum villosum*,  
*Olfersia villosa*,

MOORE. J. SMITH.  
PRESL.

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.  
*Villosum*—Shaggy.

IN THE SECTION ELAPHOGLOSSUM OF AUTHORS.

A PRETTY dwarf Fern.

An evergreen stove species.

Native of Jamaica.

Introduced into the Royal Gardens, Kew, in the year 1843,  
having been received from Mr. N. Wilson.

Sterile fronds simple, oblong-lanceolate, acuminate, undulated,  
hirsute, and pale green in colour. Fertile fronds oblong-  
lanceolate and acuminate.

Both fronds articulated near the base of the stipes, and lateral.  
Rhizoma creeping and scaly.

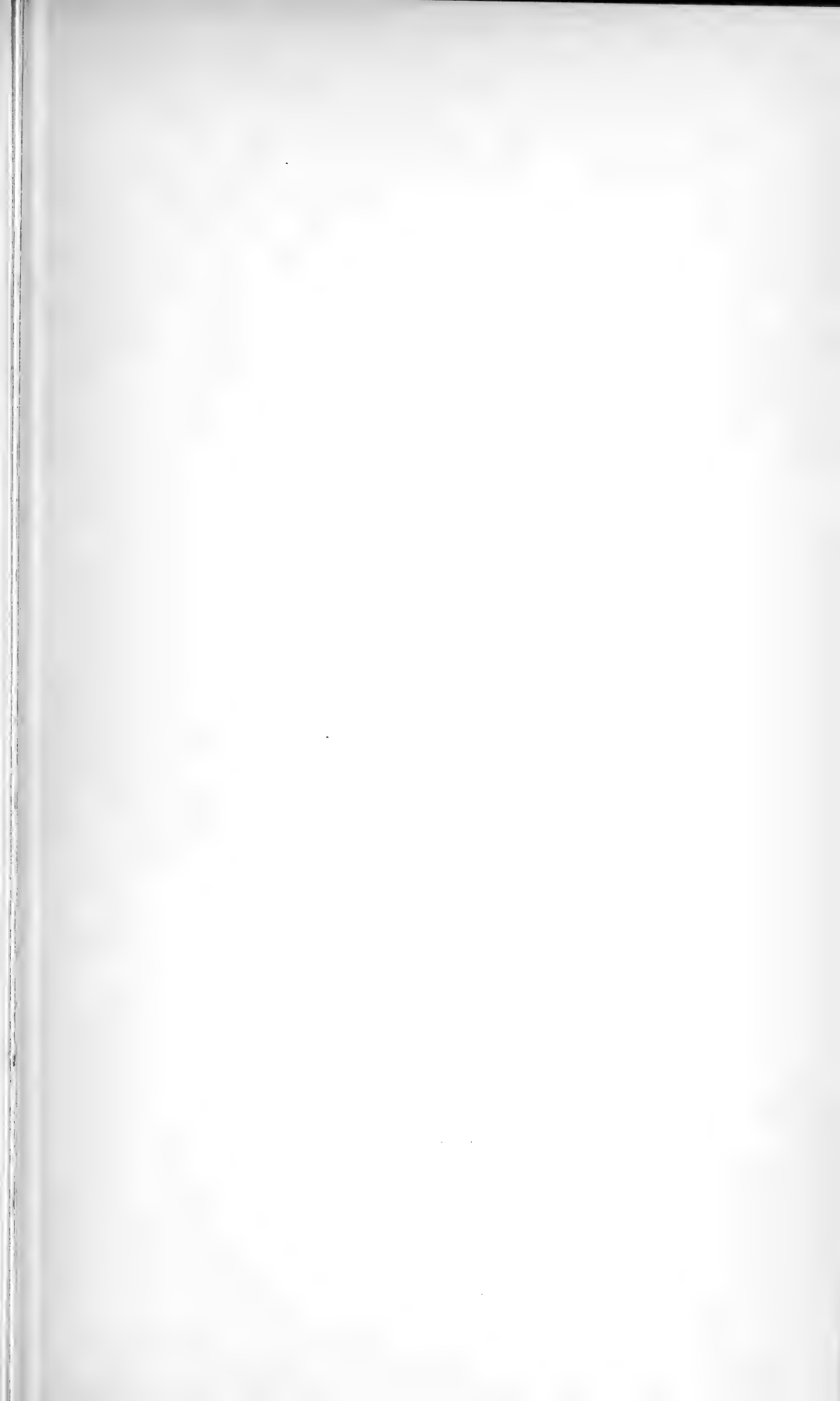
Length of sterile frond ten inches, fertile eight inches.

Sori amorphous, and densely covering the under side of the frond.

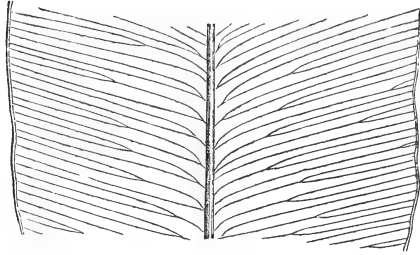
Veins forked and free.

For a plant of this Fern I am indebted to Mr. Joseph Henderson, of Wentworth.

This plant may be procured of Messrs. Sim, of Foot's Cray.  
The illustrations are from a plant in my own collection.







Portion of mature Frond—under side.

## ACROSTICHUM BREVIPES.

KUNZE. FEE.

PLATE LV. VOL. VII.

<i>Elaphoglossum brivipes,</i>	MOORE. SCHOTT.
“ <i>callæfolium,</i>	J. SMITH.
“ “	MOORE AND HOULSTON.
<i>Acrostichum callæfolium,</i>	LINK.
“ <i>lingua,</i>	OF GARDENS. ( <i>Not of RADDI</i>
“ <i>luridum,</i>	<i>nor THUNBERG.)</i>
<i>Olfersia callæfolia,</i>	FEE.
	PRESL.

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.  
*Brevipes*—Short-footed.

IN THE SECTION ELAPHOGLOSSUM OF AUTHORS.

AN ornamental Fern, known better in gardens, perhaps, as  
*Elaphoglossum callæfolium.*  
 An evergreen stove species.  
 Native of Java and Brazil.

Introduced into the Royal Gardens, Kew, in the year 1841, having been received from the Royal Gardens of Berlin.

Fronds simple and glabrous. Fertile frond erect in habit, ovate-elliptical, and acuminate. Sterile frond ovate or oblong-acuminate, coriaceous, undulated, and roundish at the base.

Stipes and rachis dark purple in colour beneath, green above.

Fronds articulated near the rhizoma.

Rhizoma scaly and creeping.

Length of fertile frond twelve inches, of sterile frond twelve to eighteen inches. Colour a deep shining green.

Sori amorphous, and densely covering the under side of the frond.

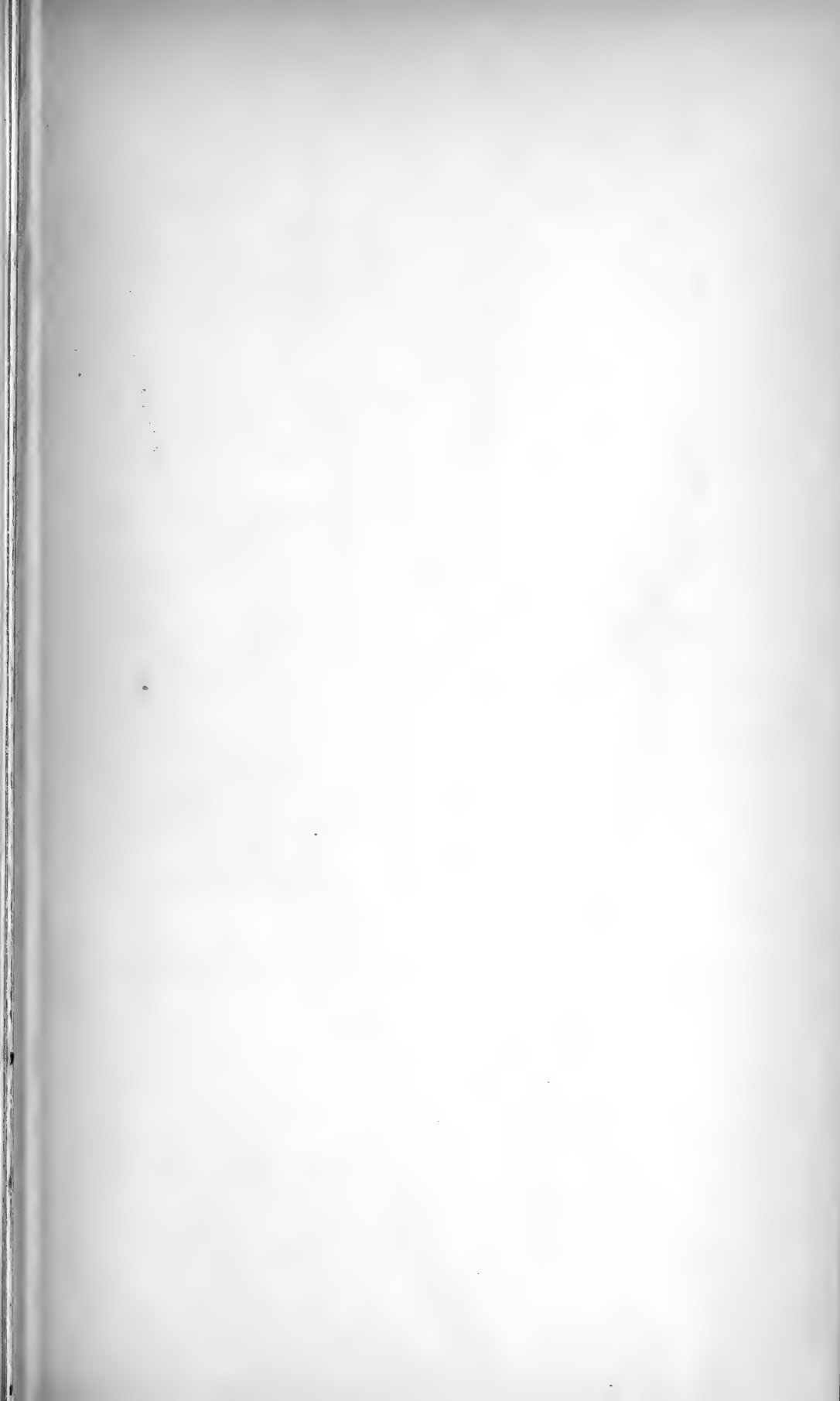
Veins forked and free.

For a plant my thanks are due to Messrs. A. Henderson, of Pine-apple Place Nursery.

It may be procured of Messrs. Veitch, of Chelsea; Rollison, of Tooting; A. Henderson, of Pine-apple Place; E. G. Henderson, of Wentworth; Jackson, of Kingston; Sim, of Foot's Cray; Booth, of Hamburg; and Cooling, of Derby.

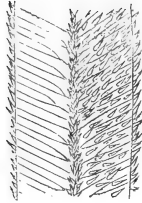
The illustration is from a plant in my own collection.







...—FERTILE AND BARREN BRANCHES.  
181-182



Portion of barren Frond—under side.

## ACROSTICHUM CUSPIDATUM.

WILLDENOW. FEE.

PLATE LVI. VOL. VII.

*Elaphoglossum cuspidatum*,  
*Olfersia cuspidata*,

MOORE.  
PRESL.

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.  
*Cuspidatum*—Pointed.

### IN THE SECTION ELAPHOGLOSSUM.

A HANDSOME, dwarf, rare species, well worthy of cultivation.  
An evergreen stove Fern.

Native of Caraccas.

The fronds are linear-oblong, elongate, pointed, covered with whitish scales above, and with reddish scales beneath.

Stipes scaly, from two to six inches in length.

The frond narrowing to the base and to the apex.

The scales of two sorts, some membranaceous, closely adpressed, and with sub-rotund white fine hairs; the others for the most part red. Costa black.

Fructification amorphous and distinct, covering the whole under side, except the midrib, where there are red scales.

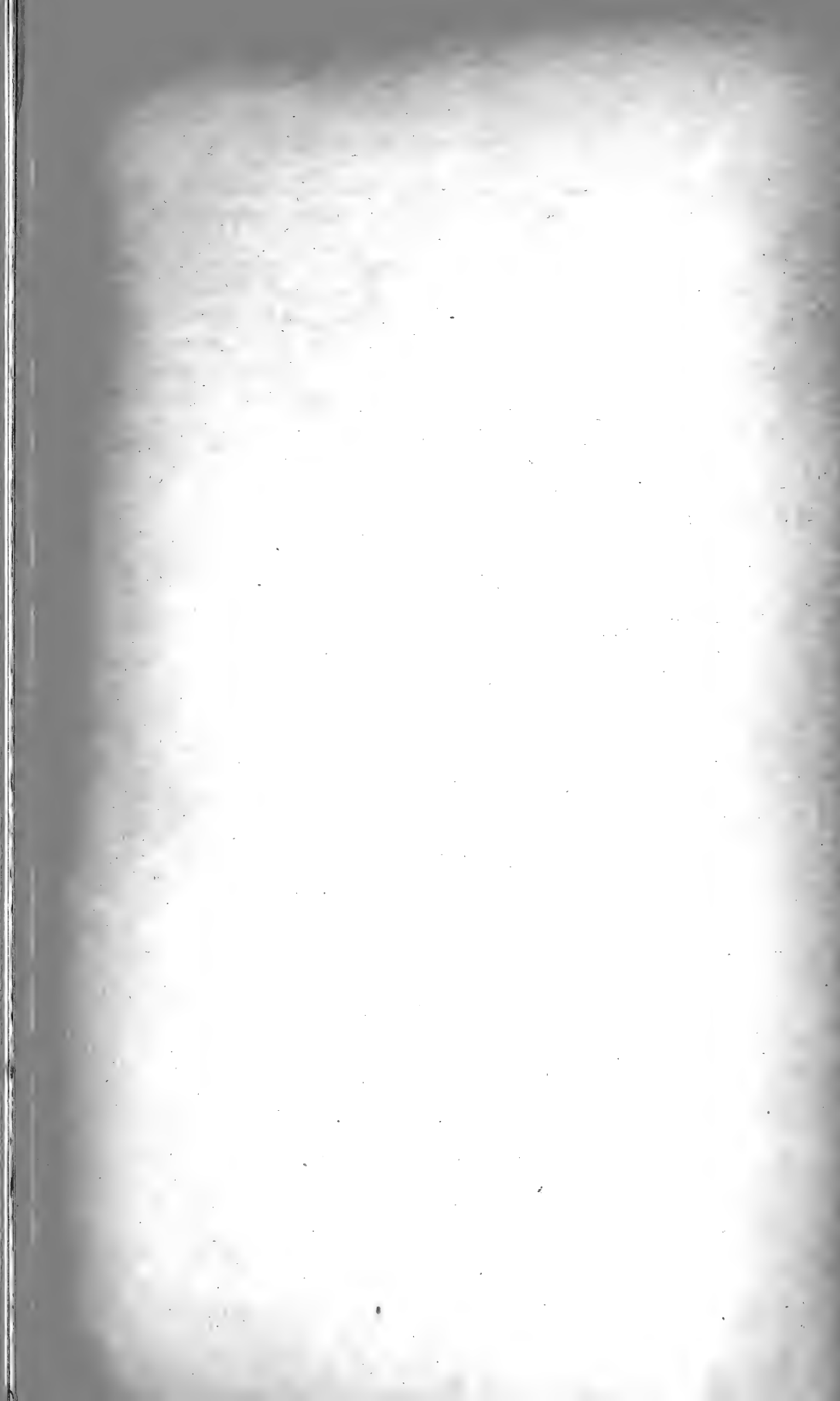
Veins forked and free.

Sterile and fertile fronds different. In the example figured the sterile frond was eight inches in length, of which the stipes was two inches, broadest in the middle, where six-tenths of an inch wide, pointed at the apex, the scales on the upper surface being mostly stellate. The fertile frond eight inches and a half in length, of which the stipes was five inches and a half; width four-tenths of an inch. Apex rounded.

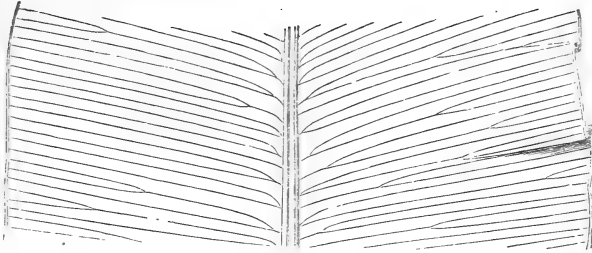
I am indebted to Mr. Henderson, of Wentworth, for fronds of this species.

It is in no Nurseryman's Catalogue.

The illustrations are from Mr. Henderson's fronds.







Portion of mature Frond—upper side.

## ACROSTICHUM CRASSINERVE.

KUNZE. FEE.

PLATE LVII. VOL. VII.

<i>Elaphoglossum crassinerve</i> ,	MOORE.
<i>Acrostichum conforme</i> ,	RADDI. ( <i>Not of BLUME or SWARTZ.</i> )
“ <i>simplex</i> ,	SPRENGEL. ( <i>Not of SWARTZ or PRESL.</i> )

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.  
*Crassinerve*—Thick-nerved.

### IN THE SECTION ELAPHOGLOSSUM OF AUTHORS.

A FERN of somewhat the character of *Acrostichum conforme*, yet more gigantic in size, and thicker in substance.

An evergreen stove species.

Native of the West Indies.

Fertile and sterile fronds different. The sterile fronds glabrous, simple, oblong-ovate, or lengthy lance-shaped in form; apex bluntly acuminate; attenuated at the base, thick, coriaceous,

and undulated. The fertile fronds also oblong-ovate in form, simple, base attenuated, and shorter and narrower than the sterile fronds.

Both fertile and sterile fronds are articulated near the base of the stipes, and are lateral.

Rhizoma short, scaly, and creeping.

Length of fertile frond from ten to twelve inches, of sterile frond from fourteen to eighteen inches; colour deep shining green. Coriaceous.

Stipes and rachis smooth and stout.

Sori amorphous, covering the whole under side of the frond.

Veins internal and forked; the apices free and clavate.

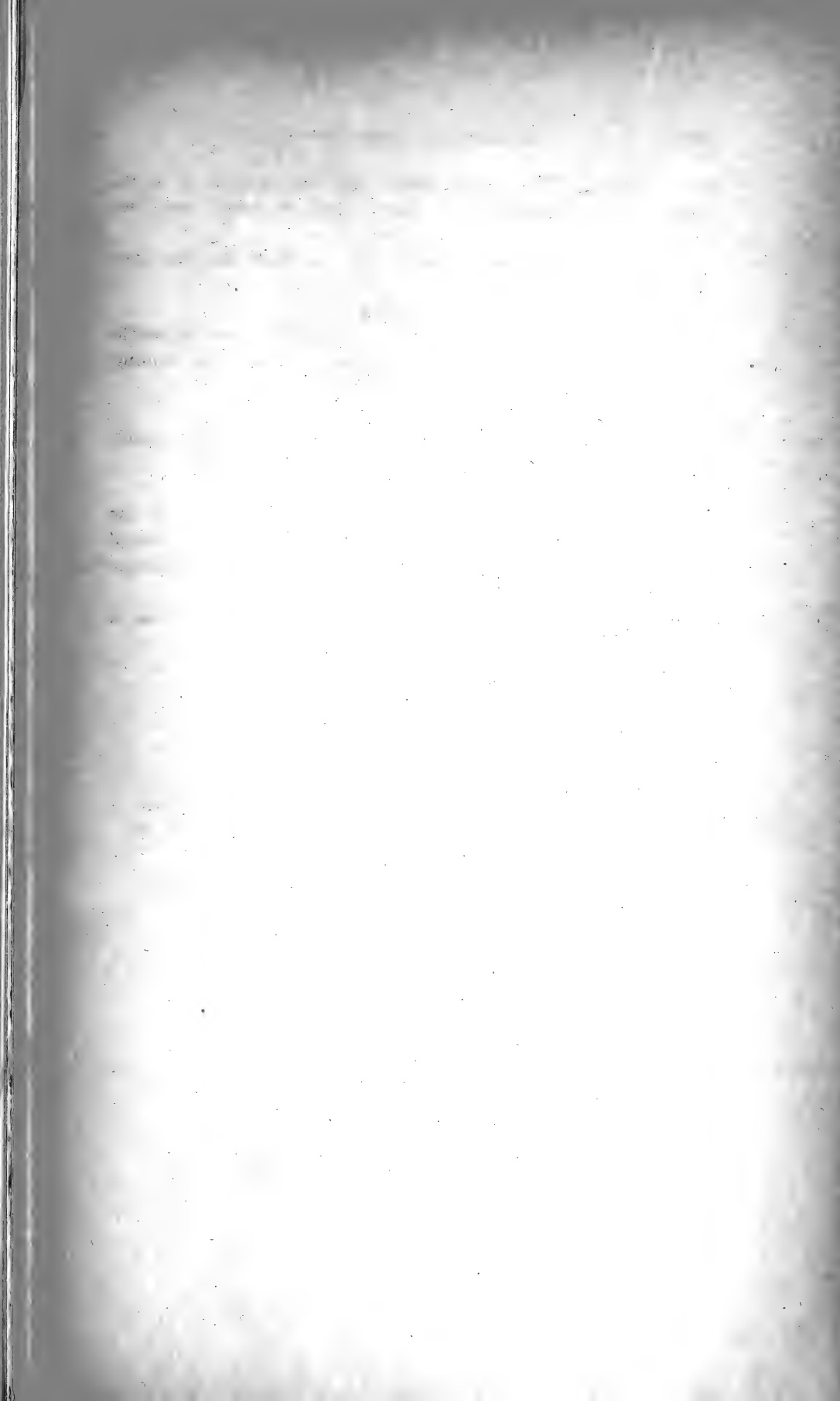
Margin of the frond thickened.

For fronds my thanks are due to Mr. T. Moore, of the Botanic Gardens, Chelsea; to Mr. J. Smith, of the Royal Gardens, Kew; and to Mr. Clarke, of the Royal Botanic Gardens, Glasgow.

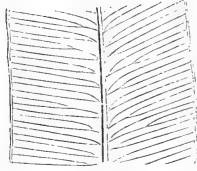
It may be procured of Messrs. Veitch, of Chelsea; Sim, of Foot's Cray; and Kennedy, of Covent Garden.

The illustration is from Mr. Smith's frond.









Portion of mature Frond—upper side.

ACROSTICHUM GARDNERIANUM.

KUNZE. FEE.

PLATE LVIII. VOL. VII.

*Elaphoglossum Gardnerianum*,

MOORE.

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.  
*Gardnerianum*—Named after Mr. Gardner.

IN THE SECTION ELAPHOGLOSSUM OF AUTHORS.

A VERY pretty and scarcely-known species.

An evergreen stove Fern.

Native of Tropical America.

Fronds simple; sterile and fertile different, the sterile being of a lengthy oblong, and having a pointed apex, and the fertile ones being linear and lengthy.

Veins internal and forked.

Substance of the frond thick.

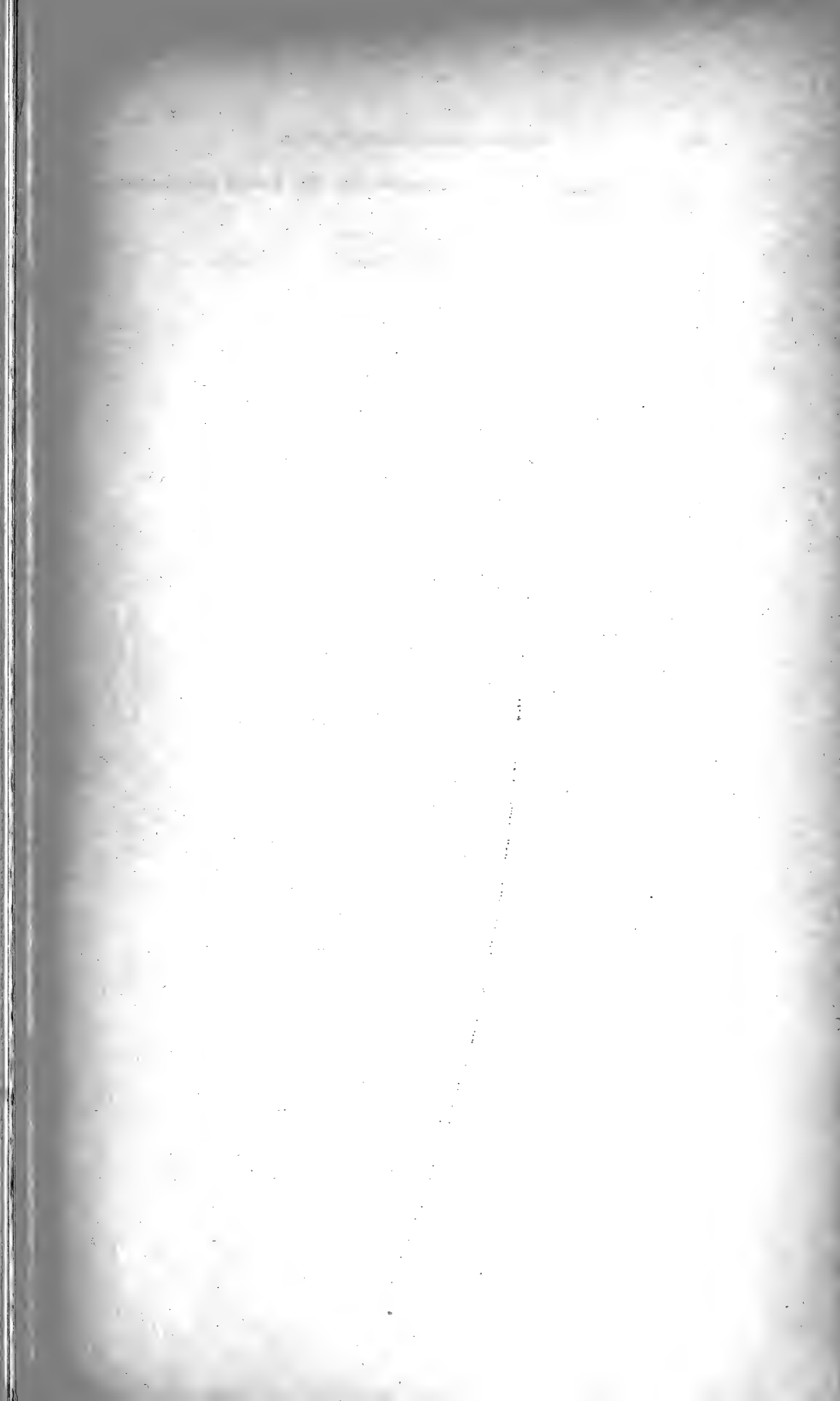
Sori amorphous, and covering the whole under side.

Length about seven inches, of which the basal two inches is naked.

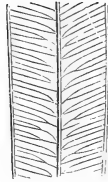
For fronds my thanks are tendered to Mr. Joseph Henderson,  
of Wentworth.

It is in no English Fern Catalogues.

The illustrations are from Mr. Henderson's fronds.







Portion of mature Frond—upper side.

ACROSTICHUM LAURIFOLIUM.

D. PETIT-THOUARS. SPRENGEL. FEE.

PLATE LIX.—A. VOL. VII.

<i>Olfersia laurifolia</i> ,	PRESL.
<i>Acrostichum lingua</i> ,	KUNZE.
<i>Elaphoglossum laurifolium</i> ,	MOORE. ?

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.  
*Laurifolium*—Laurel-leaved.

IN THE SECTION ELAPHOGLOSSUM OF AUTHORS.

A VERY pretty dwarf species, almost unknown in cultivation. Mr. Moore seems inclined, from seeing the fronds here figured, to consider it as the *Elaphoglossum stigmatolepis*.

An evergreen stove Fern.

Native of Brazil.

The fronds, which are oblong-obtuse, are glabrous on both sides, the sterile ones being widest in the middle, pointed at apex, very narrow at the base, and coriaceous. The fertile fronds contracted to only half the width of the sterile ones,

very short, and having a long naked footstalk; apex pointed, but not narrowing materially at the base.

Rachis and stipes covered with very broad pale red scales.

Fronds scaly beneath.

Veins forked and internal.

Sori amorphous, and covering the whole under side of the frond, except the midrib; colour reddish brown.

Length of fertile frond four inches and a half, of which the lower two inches and a half is naked; length of sterile frond six inches, the lower two inches being naked.

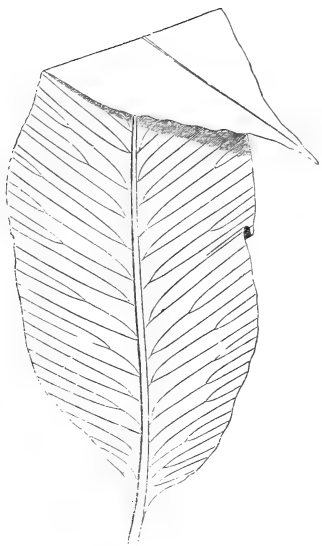
Stipes channeled, and somewhat four-sided.

My thanks are tendered to Mr. Joseph Henderson, of Wentworth, for fronds of this Fern.

It cannot be procured of any of our Nurserymen.

The illustration is from Mr. Henderson's fronds.





Mature Frond—upper side.

ACROSTICHUM MELANOPUS.

KUNZE.

PLATE LIX.—B. VOL. VII.

*Elaphoglossum melanopus*,

MOORE.

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.

*Melanopus*—.....?

IN THE SECTION ELAPHOGLOSSUM OF AUTHORS.

A DWARF, rare species. An evergreen stove Fern.  
Native of Venezuela.

The frond elliptical-oblong, with an acuminate apex; the margin fusco-paleaceous; base of frond a rounded cuneate form.

Rachis and stipes covered thickly with long blackish scales. Stipes short.

Outline of frond occasionally irregular and undulated.

Veins forked.

Length from four to five inches, of which the lower inch or inch and a half is naked.

Fertile frond only half the size, elliptical-oblong, shorter and narrower. Stipes longer.

Rhizoma scaly, short, and creeping.

Fronde coriaceous; costa covered with stout rufous scales.

For fronds my thanks are due to Mr. Sim, of Foot's Cray, and to Messrs. Booth, of Hamburg.

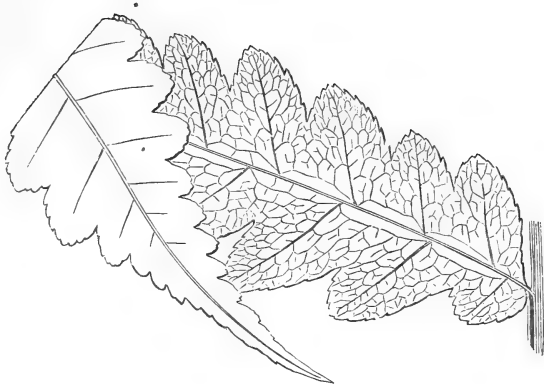
This Fern may be procured of Mr. Sim, of Foot's Cray, and also of Messrs. Booth, of Hamburg.

The wood-cut illustration is from a frond forwarded by Mr. R. Sim.

The first part of the book is devoted to a general history of the United States from its discovery by Columbus in 1492 to the present time. It covers the early years of settlement, the struggle for independence, the formation of the Constitution, and the development of the nation as a great power. The second part of the book is devoted to a detailed history of the United States from 1789 to the present time. It covers the early years of the Republic, the struggle for the abolition of slavery, the Civil War, and the Reconstruction period. The third part of the book is devoted to a detailed history of the United States from 1865 to the present time. It covers the Reconstruction period, the Gilded Age, the Progressive Era, and the modern era.

The book is written in a clear and concise style, and is suitable for use in schools and colleges. It is a valuable source of information for anyone interested in the history of the United States. The book is divided into three parts, each of which covers a different period of American history. The first part covers the early years of settlement and the struggle for independence. The second part covers the early years of the Republic and the struggle for the abolition of slavery. The third part covers the Reconstruction period and the modern era. The book is a comprehensive and authoritative history of the United States, and is a must-read for anyone interested in the history of the nation.





Pinna of barren Frond—upper side.

## ACROSTICHUM ALIENUM.

SWARTZ. PLUMIER. WILLDENOW. SPRENGEL.  
DESVAUX. KAULFUSS.

PLATE LX. VOL. VII.

<i>Gymnopteris aliena</i> ,	PRESL. HOOKER AND BAUER.
“ “	J. SMITH. FEE.
“ <i>portoricense</i> ,	FEE.
<i>Anapausia aliena</i> ,	MOORE.
“ <i>cladorrhizans</i> , var.,	MOORE.
“ <i>portoricensis</i> ,	PRESL.
<i>Acrostichum caudatum</i> ,	CAVANILLES.? SWARTZ.
“ “	WILLDENOW. SPRENGEL. DESVAUX.
	(Not of HOOKER.)
“ <i>hastatum</i> ,	LIEBMANN.
“ <i>portoricense</i> ,	SPRENGEL. DESVAUX.
“ <i>umbrosum</i> ,	LIEBMANN.
“ <i>bruneum</i> ,	WILLDENOW. SPRENGEL. DESVAUX.
“ <i>cladorrhizans</i> ,	SPRENGEL. DESVAUX.
<i>Chrysodium alienum</i> ,	METTENIUS.
<i>Pæcilopteris brunnea</i> ,	PRESL.

*Acrostichum*—From the Greek, *akros*—high, and *stichos*—order.  
*Alienum*—Different.

IN THE SECTION GYMNOPTERIS OF AUTHORS.

A VERY distinct Fern.

An evergreen stove species.

Native of South America, West Indies, Cuba, Jamaica, Martinique, Trinidad, Portorico, Guadaloupe, Columbia, New Granada, Equador, Panama, Mexico, and Guatemala.

The fronds are pinnate, the pinnæ being broad, lanceolate-elongate, and pinnatifid, the upper ones confluent; the segments ovate and obtuse-denticulate; fertile pinnæ contracted, acuminate, and repand. Lower ones pinnatifid, upper ones confluent.

Stipes glabrous.

Fronds arising from a somewhat creeping rhizoma.

Veins costæform; venules compound anastomosing.

Sori amorphous.

Length of frond from twelve to twenty-four inches.

For a frond my thanks are due to Mr. R. Sim, of Foot's Cray.

It can be procured of Mr. Sim, of Foot's Cray.

The illustration is from Mr. Sim's frond.

## GENUS XIV.

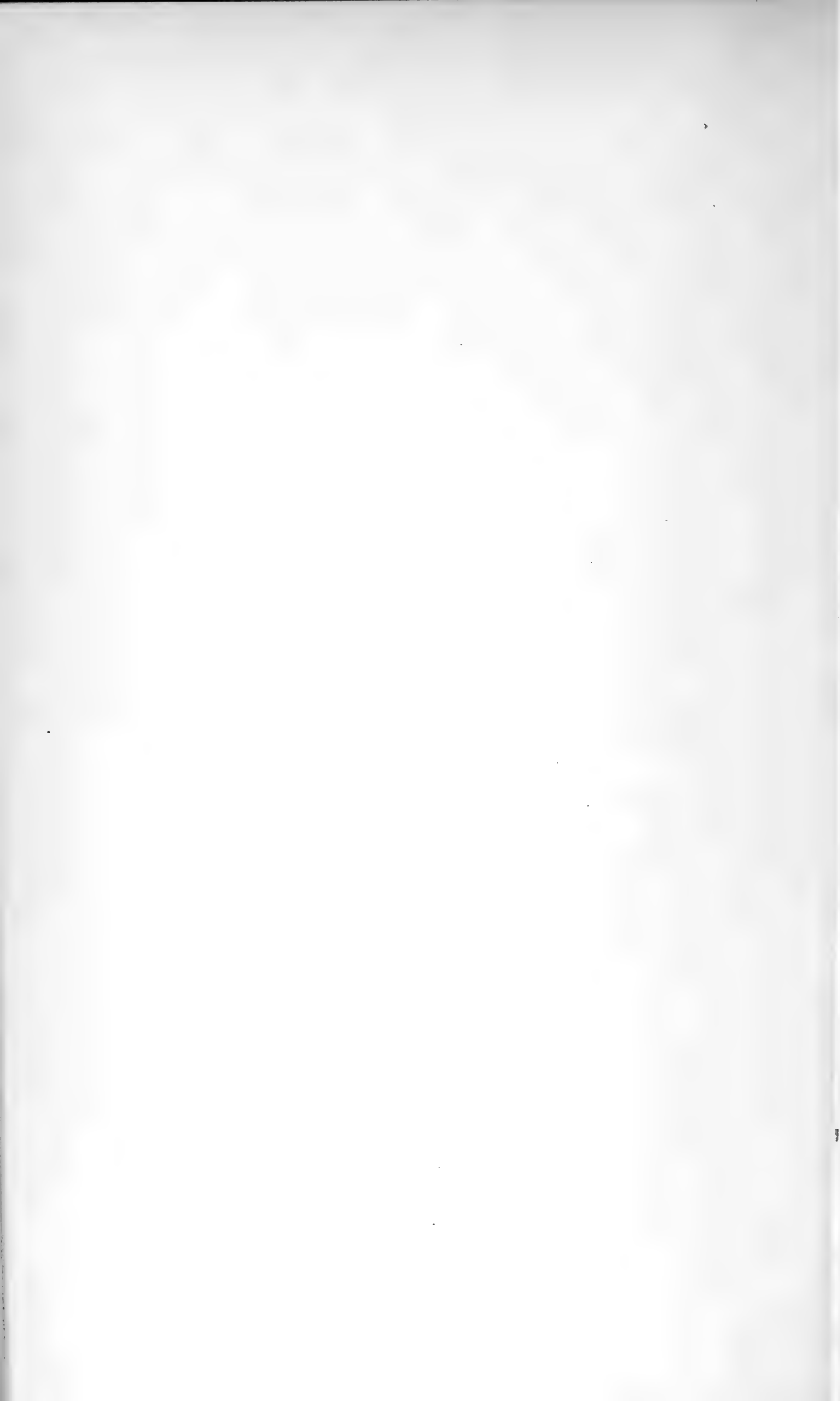
## POLYBOTRYA. HUMBOLDT.

A SMALL genus of tropical Ferns, having bi-tripinnate fronds of from two to three feet high. Veins pinnate; venules free. Fertile segments convolute, pinnatifid, or spicæform, wholly sporangiferous.

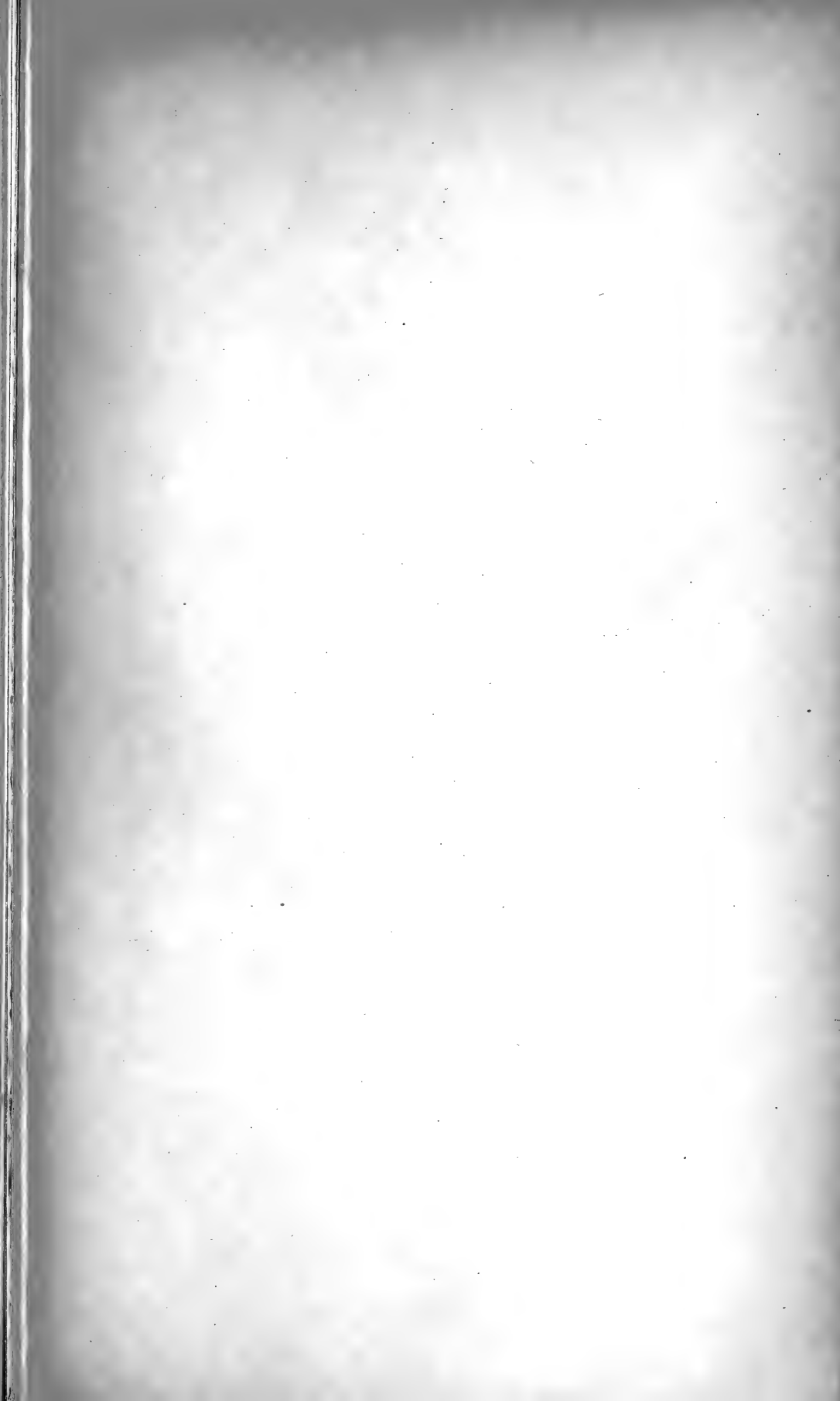
There is no British representative.

Mr. Smith, in his "Catalogue of Ferns cultivated in the Kew Gardens," enumerates—

- 1.—*P. osmundacea*, *Humboldt & Bonpland*. Tropical America.
- 2.—*P. acuminata*, *Link.* Brazil.
- 3.—*P. incisa*, *Link.* Brazil.











Pinna of barren Frond—upper side.

POLYBOTRYA OSMUNDACEA.

HUMBOLDT AND BONPLAND. HOOKER. J. SMITH.  
 SPRENGEL. KAULFUSS. HOOKER AND BAUER.  
 FEE. PRESL.

PLATE LXI. VOL. VII.

<i>Polybotrya cylindrica</i> ,	KAULFUSS. SPRENGEL.
“ “	KUNZE. J. SMITH. PRESL.
“ “	FEE. SCHOTT. MOORE.
“ <i>speciosa</i> ,	SCHOTT.

*Polybotrya*—From the Greek, *polys*—many, and *botrys*—a raceme.

A VERY handsome Fern.

An evergreen stove species, with a scandent habit, climbing more than twenty feet up trunks of trees.

Native of Brazil, St. Catharine Island, Jamaica, and South America.

Introduced into the Royal Gardens, Kew, in 1843, having been received from Mr. N. Wilson.

Barren and fertile fronds different; the sterile ones, rising from a dark, scaly, stout, creeping stem, being erect and short-stalked. Fronds spreading, and four to six inches wide, a lengthy triangular form; edge toothed; glabrous, deep green, and having much the appearance of a *Polystichum*.

Sterile frond bi-tripinnate; pinnules oblong-acuminate; base of a rounded cuneate form and bluntly lobed. Fertile one contracted, also bi-tripinnate, and erect in habit.

Stipes scaly.

Sori amorphous.

Veins pinnate; venules external, free, and simple.

Rhizoma creeping.

Fronds lateral, and adherent to a coarse, scaly, creeping rhizoma.

Length of frond from twenty-four to thirty inches.

For fronds my thanks are due to Mr. Smith, Curator of the Royal Gardens, Kew.

It may be procured of Messrs. Veitch, of Chelsea; Sim, of Foot's Cray; and A. Henderson, of Pine-apple Place.

The illustration is from Mr. Smith's frond.

## GENUS XV.

## PLATYCERIUM. DESVAUX.

A SMALL singular family of epiphytal Ferns, the name being derived from the Greek, *platys*—broad, and *keras*—a horn, on account of the fertile fronds resembling the broad horns of the elk.

The fronds are simple, forked, coriaceous, thick, and spongy, the sterile ones sessile, permanent, and successively imbricated. The whole surface of the frond covered with a stellate pubescence.

Veins repeatedly forked and distantly anastomosing; venules internal, compoundly reticulated, with free veinlets terminating in the areoles.

Length of fronds from one to three feet.

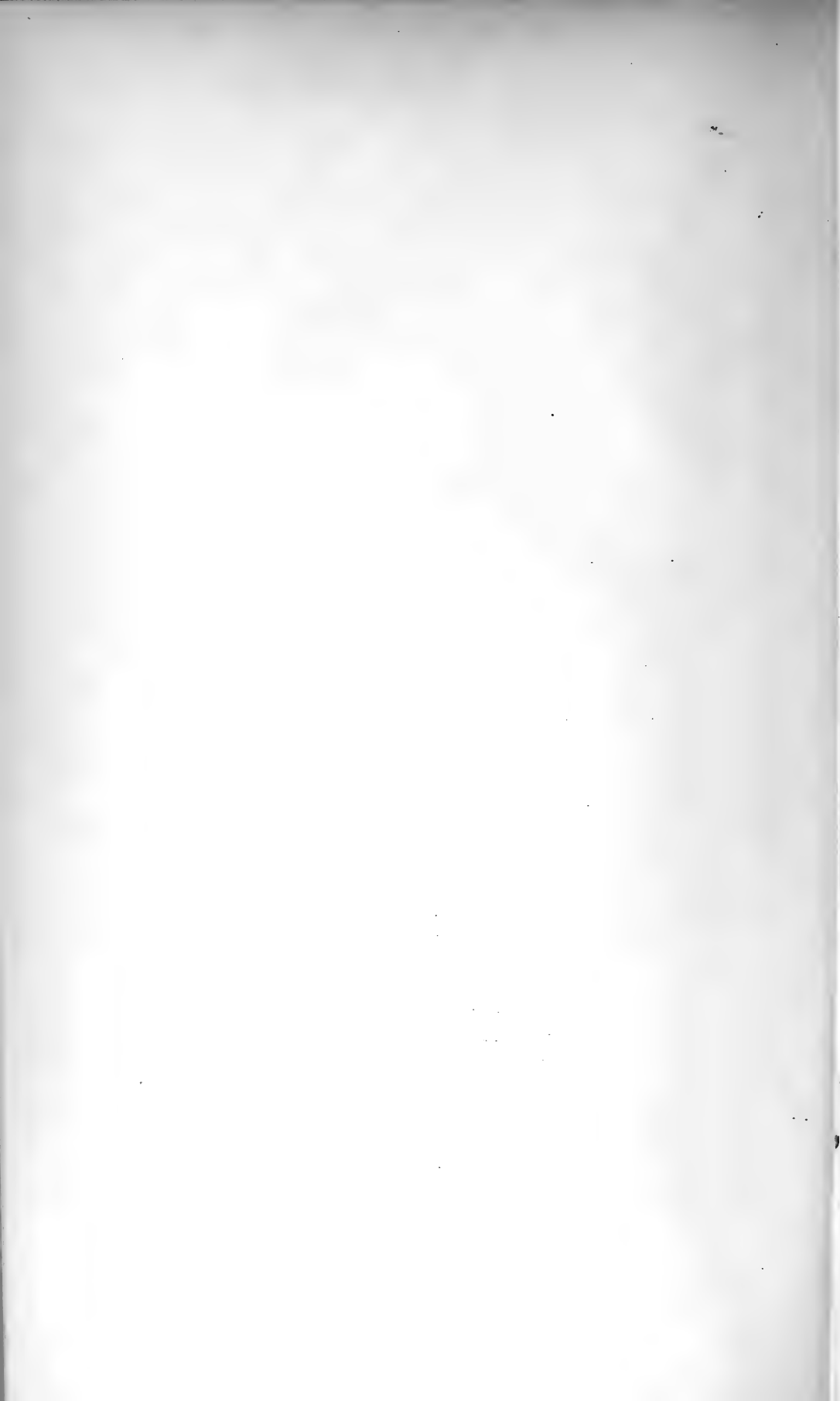
There is no British representative.

Mr. Moore, in his "Index Filicum," enumerates—

P. stemmaria.		P. biforme.
P. alcicorne.		P. grande.

Dr. Hooker describes five species, namely:—

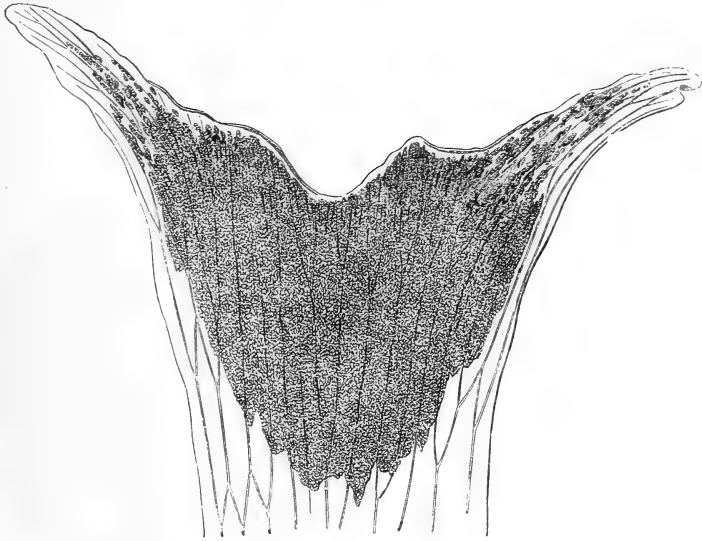
- P. alcicorne. Madagascar, Eastern Asia, and Peru.
- P. stemmaria, *Desvaux*. Western Africa.
- P. grande, *Cunningham*. New Holland, Singapore, and Luzon?
- P. biforme, *Blume*. Malay Islands.
- P. Wallichii, *Hooker*. Moulmein.











Portion of mature Frond—under side.

## PLATYCERIUM STEMMARIA.

DESVAUX. KUNZE. PRESL. (*Not of* SCHOTT.)

PLATE LXII. VOL. VII.

<i>Acrostichum stemmaria</i> ,	BEAUVAIS. PALIS. ( <i>Not of</i> COMMERSON.)
“ <i>æthiopicum</i> ,	BEAUVAIS. PALIS.
“ <i>alcicorne</i> ,	SWARTZ. PALIS. SCHUHR.
<i>Platycerium stemmaria</i> ,	MOORE. DESVAUX. J. SMITH.
<i>Nevroplatyceros æthiopicus</i> ,	PLUKENET. FEE.

*Platycerium*—From the Greek, *platys*—broad, and *keras*—a horn.

*Stemmaria*—Stemmaria.

AN interesting species, less known than *P. alcicorne* in collections, yet nevertheless a very curious and handsome Fern

An evergreen stove species.

Native of Western Africa.

Introduced into the Royal Gardens, Kew, in 1848.

Sterile and fertile fronds different. Sterile frond sessile, elongated, and ascending; upper portion scarcely lobed, reniform, permanent, elevated, spongy, and depressed. Fertile frond simple, horizontal, thick and coriaceous, divided, and widening upwards. Articulated with the rhizoma.

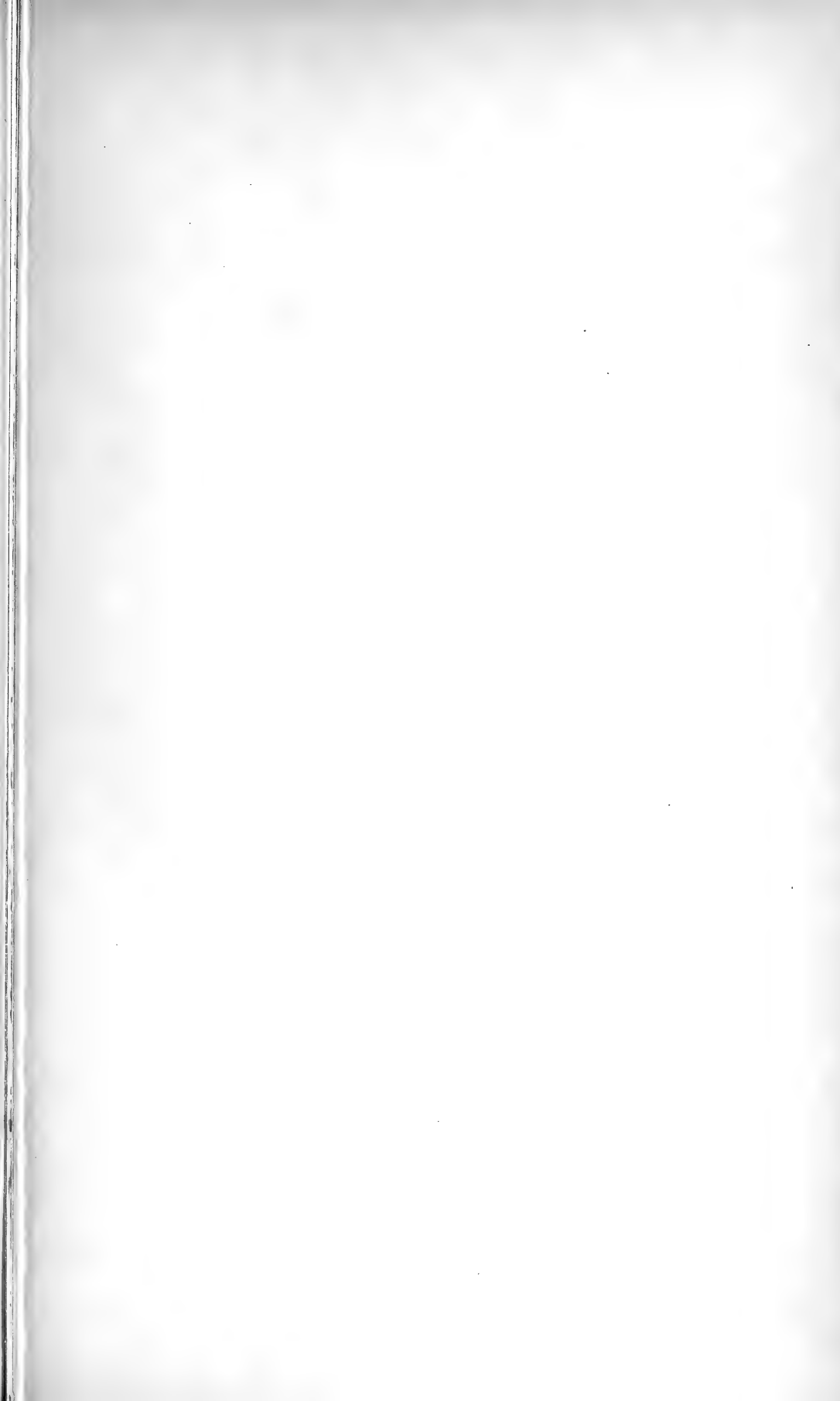
Veins repeatedly forked, and distantly anastomosing; venules internal and compoundly reticulated.

Sori occupying the lobes.

For plants and fronds my thanks are due to Mr. Joseph Henderson, of Wentworth, and to Messrs. Rollisson, of Tooting.

It may be procured of Messrs. Sim, of Foot's Cray; Rollisson, of Tooting; Veitch, of Chelsea; E. G. Henderson, of St. John's Wood; A. Henderson, of Pine-apple Place; Jackson, of Kingston; and Kennedy, of Covent Garden.

The illustration is from a frond forwarded by Mr. Henderson, of Wentworth.







Plant from a photograph.

PLATYCERIUM ALCICORNE.

GAUDICHAUD. KUNZE. J. SMITH. DESVAUX. SWARTZ.  
MOORE. LINK. BLUME.

PLATE LXIII. VOL. VII.

<i>Acrostichum alcinorne,</i>	SWARTZ, IN PART. TURPIN.
“ “	SPRENGEL. WILLEM.
“ “	KAULFUSS. ( <i>Not of SCHKUHR.</i> )
“ <i>bifurcatum,</i>	CAVANILLES. ( <i>Not of SWARTZ.</i> )
“ <i>stemmaria,</i>	COMMERTON. SCHOTT.
	( <i>Not of BEAUVAIS.</i> )
<i>Nevroplatyceros alcinornis,</i>	FEE.
<i>Platycerium angustatum,</i>	DESVAUX.
VOL. VII.	Y

*Platycerium*—From the Greek, *platys*—broad, and *keras*—a horn.  
*Alcicorne*—Elk's-horn.

AN extremely interesting Fern, one of a singular genus of epiphytal plants, growing on the branches of trees; very easily cultivated, and making a handsome specimen when well grown.

An evergreen warm greenhouse species.

Native of New South Wales, New Holland, Java, Asia, East Indies, Australia, Malay Archipelago, Madagascar, and Peru.

Introduced into the Royal Gardens, Kew, in 1808, having been received from Mr. Caley, and now generally distributed throughout private collections.

Fertile and sterile fronds different. Sterile frond sessile and nearly circular; upper portion sub-lobate, permanent, elevated, spongy, and depressed. Fertile frond simple, divided, nearly horizontal, thick, coriaceous, widening upwards, and articulated on a short slightly-creeping rhizoma. Under surface of fronds white, and upper surface throughout covered with a dense stellate pubescence.

Veins repeatedly forked and distantly anastomosing; venules internal and compoundly reticulated, having free veinlets terminating in the areoles.

Sori amorphous in patches, formed in the lobes or at the extremities of the frond.

For a plant my thanks are due to Mrs. Empson, of Goole Hall.

It may be procured of any Nurseryman.

The coloured illustration, and an engraving from a photograph, shewing the habit of the Fern, are from a plant in my own collection.









Plant from a photograph.

## PLATYCERIUM GRANDE.

KUNZE. J. SMITH. MOORE. HOOKER AND BAUER.

PLATE LXIV. VOL. VII.

*Acrostichum grande*,  
*Neuroplatyceros grandis*,

A. CUNNINGHAM.  
FEE.

*Platycerium*—From the Greek, *platys*—broad, and *keras*—a horn.  
*Grande*—Grand.

As its name implies, a grand species, only to be found in the best collections. Easily cultivated, and indeed requiring no care if grown in a proper stove house.

An evergreen stove Fern.

Native of the East Indies, Singapore, Luzon,? Malayan Islands, and New Holland.

Introduced into the Royal Gardens, Kew, by Mr. Bidwill, in the year 1842.

An epiphytal Fern, having fertile and sterile fronds different. The sterile frond sessile, nearly round, and ascending, the upper portion being divided into a number of broad blunt segments, permanent, spongy in texture, and depressed.

Fertile fronds simple, two or three times divided, horizontal, and pendulous at the apex, thick and coriaceous, widening upwards, and being articulated on a brief rhizoma.

Veins repeatedly forked and distantly anastomosing; venules internal, compoundly reticulated, and having free veinlets terminating in the areoles.

Sori near the sinus of the first division, and forming a large triangular patch.

The fronds entirely covered with a stellate pubescence, giving the Fern a glaucous, or rather woolly appearance.

Length of sterile frond twenty-four to thirty inches, of fertile frond from thirty to thirty-six inches. .

For plants of this Fern I am indebted to Messrs. Rollisson, of Tooting, and to Mr. J. Henderson, of Wentworth; and for fronds to the same gentlemen.

It may be procured of any of the principal Nurserymen.

The illustration is from a frond sent by Messrs. Rollisson, of Tooting; and the wood engraving, shewing the habit of the plant, is from a photograph of a plant in my own collection.

## OPHIOGLOSSACEÆ.

A SINGULAR class of Ferns, having sub-globose sporangia, which are sessile, unilocular, and opening by a vertical or transverse slit, and being bivalved.

Fronds solitary, bearing a fertile and sterile branch on the same stem.

There are two divisions, namely, *Ophioglossum* and *Botrychium*.

## GENUS I.

## OPHIOGLOSSUM. LINNÆUS.

A SMALL family of herbaceous Ferns, having the sterile and fertile branches distinct, yet on the same stem.

Veins reticulated.

The name derived from the Greek, *ophios*—a serpent, and *glossa*—a tongue; hence the name Adder's-tongue.

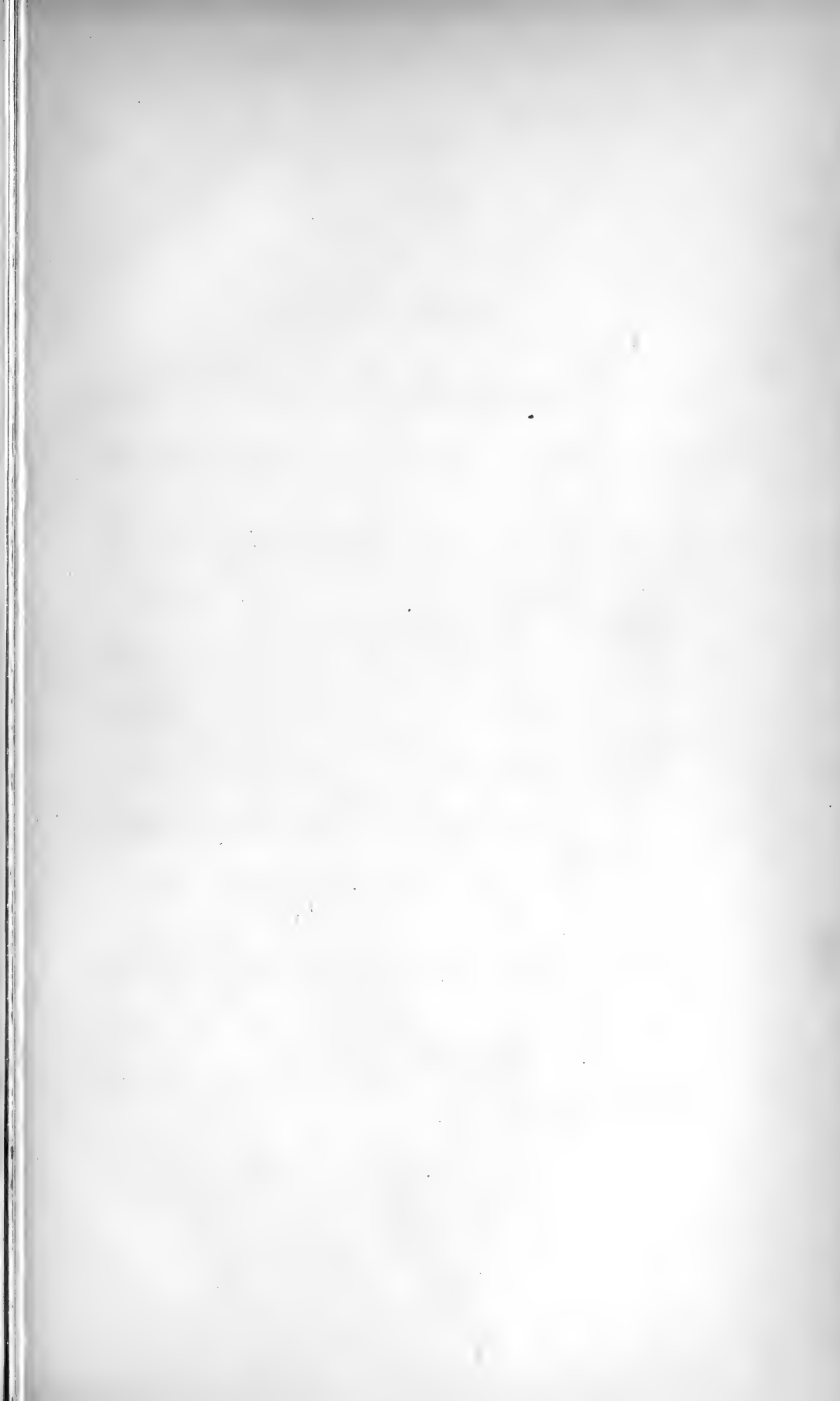
There are two British species,—*Ophioglossum vulgatum* and *O. Lusitanicum*.

Kunze, in his "Index Filicum," enumerates—

O. bulbosum, <i>Michaux</i> , North America.	O. costatum, <i>Brown</i> , New Holland.
— gramineum, <i>Willdenow</i> , New Holland.	— Lusitanicum, <i>Linnæus</i> , Europe.
— palmatum, <i>Linnæus</i> , American Meridian.	— pedunculatum, <i>Desvoux</i> , Java.
— reticulatum, <i>Linnæus</i> , American Meridian.	— vulgatum, <i>Linnæus</i> , Europe.

Sprengel, in his "Systema Vegetabilium," gives—

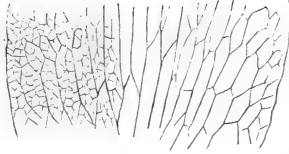
O. vulgatum, <i>Linnæus</i> .	O. costatum, <i>Brown</i> .
— ovatum, <i>Swartz</i> , Molucca.	— Bergianum, <i>Schlechtendal</i> .
— petiolatum, <i>Hooker</i> , India.	— pendulum, <i>Linnæus</i> , Molucca.
— reticulatum, <i>Linnæus</i> .	— palmatum, <i>Linnæus</i> .
— bulbosum, <i>Michaux</i> .	<i>Helminthostachys dulcis</i> , <i>Kaulfuss</i> , India.
— capense, <i>Schlechtendal</i> , Africa.	<i>H. Mexicana</i> , <i>Sprengel</i> , Mexico.
— Lusitanicum, <i>Linnæus</i> .	
— gramineum, <i>Willdenow</i> .	





*C. ROGERSSUM* VEROE. F. H.

*C. LUSITANICUM.*



Portion of barren Frond.

## OPHIOGLOSSUM VULGATUM.

LINNÆUS. BOLTON. SMITH. HOOKER AND ARNOTT.  
BABINGTON. NEWMAN. DEAKIN. SOWERBY.  
MOORE. SCHKUHR.

PLATE LXV.—A. VOL. VII.

<i>Ophioglossum ovatum,</i>	SALISBURY.
“ <i>Riehlii,</i>	AUSTRIAN GARDENS.
“ <i>unifolium,</i>	GILIBERT.

*Ophioglossum*—Adder’s-tongue.

*Vulgatum*—Common.

THE Common Adder’s-tongue is a native of Great Britain, being found in tolerable abundance in many localities. In Nottinghamshire it is very abundant in fields at Highfield House, Stanton-on-the-Wolds, and at Clifton, growing on moist loamy ground, on meadow land, and on higher and drier ground, where there is very strong loam or clay. Mr. Moore remarks that it is less common in Wales, Scotland, and Ireland. It is found in Orkney, Shetland, throughout Europe—from Russia to Tuscany; in Siberia and North America.

The fertile and sterile fronds different, but upon the same

stem. Sterile branch sessile, entire, ovate-elongate, smooth, and pale yellowish green in colour. Fertile branch erect, a simple spike on an elongate foot-stalk proceeding from the inner base of the sterile branch.

Veins anastomosing, and without a mid-vein.

Rhizoma a corm-like crown.

Roots thick, brittle, and spreading horizontally.

Stipes erect, smooth, cylindrical, succulent, and hollow.

Length of frond from three to twelve inches.

There is a dwarf variety, which was found in Orkney by Mr. Syme, known as variety *Minor*, the barren branches being narrow and oval. The plant also is much later in the year in coming to maturity.

For plants my thanks are due to Mr. Gray, of St. Thomas', Exeter; to Mr. Joseph Sidebotham, of Manchester; and to Mr. Clarke, gardener to Mr. Wilkinson Dent, of Flass House, Crosby Ravensworth, Westmorland.

It may be procured from Mr. Sim, of Foot's Cray.

The illustration is from Mr. Clarke's plant.





Barren Frond—upper side, (slightly magnified.)

## OPHIOGLOSSUM LUSITANICUM.

LINNÆUS. MOORE. NEWMAN. SOWERBY. BABINGTON.  
HOOKER AND GREVILLE. LINDLEY.

PLATE LXV.—B. VOL. VII.

*Ophioglossum*—Adder's-tongue.

*Lusitanicum*—Lusitania.

A VERY interesting pigmy Fern from Guernsey, having been discovered in the year 1854 growing in sandy loam near Petit Bot Bay, by Mr. G. Wolsey, and since found in other places in that island.

This species may be called a winter Fern, the fronds coming up in winter, and arriving at maturity about the middle of January.

An indigenous Fern, with annual fronds.

Found in Portugal, Spain, France, Italy, Sicily, Greece, the Mediterranean Islands, Tangiers, Algiers, the Canaries, the Islands of Madeira, Teneriffe, Azores, and Guernsey.

The fronds are thick, fleshy, and pale green in colour. Sterile and fertile branches on the same stem; the sterile branch linear to linear-lanceolate in shape, tapering below to where it joins the fertile branch; fertile branch longer, erect, being a linear-oblong spike on a long stalk, and apiculate.

Veins anastomosing, and without any mid-vein.

Roots thick, fleshy, brittle, and spreading.

Rhizoma a corm-like crown.

Stipes erect, smooth, succulent, and cylindrical.

This Fern, known as the Dwarf Adder's-tongue, has usually solitary fronds, or occasionally two or three from the same crown.

Length of frond from less than an inch to an inch and a half.

For plants my thanks are due to Mr. James, of Vauvert.

It may be procured of Mr. Sim, of Foot's Cray.

The illustrations are from plants in my own collection.

## GENUS II.

## BOTRYCHIUM. SWARTZ.

A SMALL family of dwarf Ferns, only one species of which, *Botrychium lunaria*, is a native of Great Britain.

Fronds herbaceous; fertile and sterile branches distinct, yet on the same stem.

Veins repeatedly branched from a central costa; venules free.

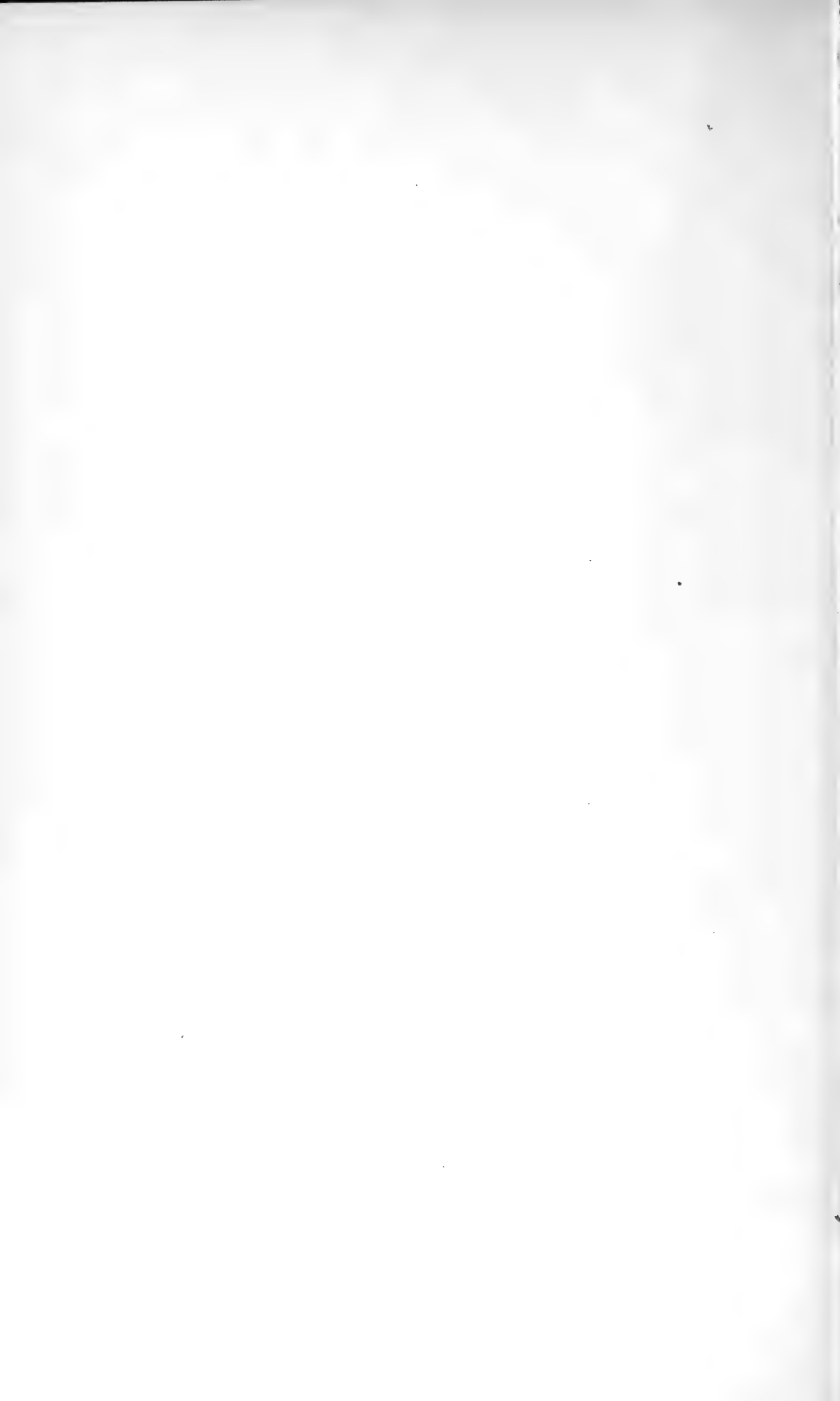
The name derived from the Greek—*botrys*, signifying a bunch or cluster.

Sprenzel enumerates—

- |  |  |
|--|--|
| <p><i>B. lunaria</i>, <i>Swartz</i>, Europe.<br/>— <i>Australe</i>, <i>Brown</i>, New Holland.<br/>— <i>Matricariæ</i>, <i>Sprenzel</i>, Europe.<br/>— <i>Fumariæ</i>, <i>Sprenzel</i>, Carolina.<br/>— <i>ternatum</i>, <i>Swartz</i>, Japan.</p> | <p><i>B. dissectum</i>, <i>Sprenzel</i>, North America.<br/>— <i>Virginicum</i>, <i>Swartz</i>, North America.<br/>— <i>cicutarium</i>, <i>Swartz</i>, Hispaniola.</p> |
|--|--|

Kunze gives—

- |  |   |
|--|---|
| <p><i>B. Australe</i>, <i>Brown</i>.<br/>— <i>dissectum</i>, <i>Muhlenberg</i>.<br/>— <i>fumarioides</i>, <i>Willdenow</i>, N. America.<br/>— <i>gracile</i>, <i>Kunze</i>, North America.</p> | <p><i>B. lunaria</i>, <i>Swartz</i>.<br/>— <i>obliquum</i>, <i>Muhlenberg</i>, N. America.<br/>— <i>rutæfolium</i>, <i>Brown</i>, Europe.<br/>— <i>Virginicum</i>, <i>Swartz</i>.</p> |
|--|---|









Portion of barren Frond.

## BOTRYCHIUM LUNARIA.

SWARTZ. SMITH. HOOKER AND ARNOTT.  
 BABINGTON. DEAKIN. NEWMAN. SOWERBY. MOORE.  
 SCHKUHR.

PLATE LXVI.—A AND B. VOL. VII.

<i>Botrychium lunatum</i> ,	GRAY.
“ <i>rutaceum</i> ,	SWARTZ. SCHKUHR. NEWMAN.
“ “	BABINGTON. MOORE.
“ <i>matricariæfolium</i> ,	BRAUN.
<i>Osmunda lunaria</i> ,	LINNÆUS. BOLTON. SMITH.
“ <i>lunata</i> ,	SALISBURY.
“ <i>lunaria var. ramosa</i> ,	ROTH.
“ <i>lunaria var. Moorei</i> ,	LOWE.
<i>Ophioglossum pennatum</i> ,	LAMARCK.
“ <i>pennatum var. rutaceum</i> ,	MOORE.

*Botrychium*—A bunch.

*Lunaria*—Of the Moon.

THE Common Moonwort is a deciduous indigenous species, widely diffused through England, Scotland, Ireland, and Wales, but very local. I have seen it more abundant in Westmorland than in any other county, although it is tolerably abundant at Clifton, in Nottinghamshire.

Found in Orkney, Shetland, Lapland, Iceland, North Cape, Sicily, Spain, Russia, Siberia, Newfoundland, Greenland, Bear Lake, Rocky Mountains, Behring's Bay, Ural Mountains, Altai

Mountains, Kamtschatka, Lake Baikal, Tasmania, the Island of Fuegia, Australian Alps, etc.

A difficult plant to cultivate. Found in dry, open, elevated pastures and waste lands; requiring to be kept cool and moist by a thick low vegetation, which invariably surrounds this species. Hence the difficulty of imitating its natural growth.

Fronds herbaceous, the sterile and fertile branches being distinct.

Fronds solitary; the sterile branch pinnate; pinnæ lunate or fan-shaped, from four to seven pairs; margin somewhat crenate, occasionally partially fertile. The fertile branch pinnate or bipinnate, the contracted rachiform divisions fleshy.

Roots stout, fleshy, and brittle. Stipes erect and smooth, bearing a two-branched frond, the one sterile and the other fertile.

Veins of the barren frond repeatedly forked, radiating from the base, and terminating within the margin.

Fructification sessile, erect, in two rows along each segment.

Spore-cases smooth and spherical, bursting transversely; when mature, golden brown in colour.

The plant perennial, but the fronds annual.

There are two distinct varieties.

The variety *Rutaceum* has a broader barren branch, which is triangular in form and twice divided.

The variety *Moorei*, (Plate LXVI.—B,) named after Mr. Thomas Moore, an indefatigable and well-known cryptogamic botanist, is similar in its fronds to the normal form, with the exception of its edge being deeply incised, giving the frond a very handsome appearance. This variety has been found in some abundance near Crosby Ravensworth, Westmorland, by Mr. Clarke, gardener to Mr. Wilkinson Dent.

Length of frond from eight to ten inches; colour a light yellowish green.

The normal form may be procured of any Nurseryman.

The illustrations are from fronds forwarded by Mr. Clarke.



## AUTHORITIES QUOTED IN VOL. VII.

- |                    |                    |                |
|--------------------|--------------------|----------------|
| Afzelius.          | Greville.          | Plumier.       |
| Agardh.            | Griffith.          | Pœppig.        |
| Aiton.             | Gueinzus.          | Pohl.          |
| Anderson.          | Hænke.             | Poiret.        |
| Arnott.            | Hamilton.          | Presl.         |
| Arrabida.          | Henderson, Joseph. | Pursh.         |
| Babington.         | Heward.            | Raddi.         |
| Balfour.           | Hoffmann.          | Ralfs.         |
| Bauer.             | Hooker, Sir W. J.  | Reinwardt.     |
| Beauvois.          | Hooker, J. D.      | Retzius.       |
| Beck.              | Houlston.          | Roehling.      |
| Belanger.          | Holl.              | Roth.          |
| Bentham.           | Houttuyn.          | Roxburgh.      |
| Bernhardi.         | Hudson.            | Rucker.        |
| Bidwill.           | Hull.              | Rumphius.      |
| Blume.             | Humboldt.          | Ruprecht.      |
| Bojer.             | Jacquin.           | Sadler.        |
| Bolton.            | James.             | Schiede.       |
| Bonpland.          | Karwinski.         | Schkuhr.       |
| Bory.              | Kaulfuss.          | Schlechtendal. |
| Brackenridge.      | Klotzsch.          | Schott.        |
| Braun.             | Koch.              | Schrader.      |
| Bree.              | Kunth.             | Sieber.        |
| Brown, R.          | Kunze.             | Sim.           |
| Burmamn.           | La Billardiere.    | Sloane.        |
| Caley.             | Lamarck.           | Smith, J. E.   |
| Cameron.           | Langsdorff.        | Smith, J.      |
| Carmichael.        | Lapeyrouse.        | Sowerby.       |
| Chamb.             | Lasch.             | Splitgerber.   |
| Commerson.         | Liebmann.          | Sprengel.      |
| Cunningham, Allan. | Liljeblad.         | Sturm.         |
| Dalechamps.        | Linden.            | Swartz.        |
| Deakin.            | Lindley.           | Syme.          |
| Decaisne.          | Link.              | Tait           |
| De Candolle.       | Linnæus.           | Tausch.        |
| Derby, Earl of.    | Loddiges.          | Thunberg.      |
| Desvaux.           | Loureiro.          | Tradescant.    |
| De Vriese.         | Lowe, E. J.        | Turpin.        |
| Dietrech.          | Lowe, H.           | Vahl           |
| Dickie, Dr.        | Macreight.         | Ventenat.      |
| Dickson.           | Martens.           | Villars.       |
| Don.               | Mettenius.         | Viviani.       |
| Ehrhart.           | Meyer.             | Wahlenberg.    |
| Endlicher.         | Michaux.           | Wallich.       |
| Fee.               | Miquel.            | Watson.        |
| Fischer.           | Mohr.              | Webb.          |
| Forster.           | Moore, T.          | Weis.          |
| Fries.             | Morison.           | Wickstr.       |
| Galleotti.         | Moritz.            | Willdenow.     |
| Gardner.           | Muhlenberg.        | Willem.        |
| Gaudichaud.        | Newman.            | Wilson.        |
| Gilibert.          | Nuttall.           | Withering.     |
| Gillies.           | Palisot.           | Wolsey.        |
| Gœpp.              | Petit-Thouars.     | Woods, J.      |
| Gouan.             | Petiver.           | Wulfen         |
| Gray.              | Plukenet.          |                |

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## INDEX TO VOL VII.

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[Those Ferns having *an authority* attached, are the respective names adopted in this Work, of which a description, together with a coloured illustration, and one or more woodcuts are given. Names not having an authority attached, are those adopted by other authors, and are therefore to be found under other names; or they are species not yet introduced into this country in a living state. It sometimes happens, and indeed not unfrequently, that the same name is used by different authors for different species: this will at once be seen by referring to each page given in the index.]

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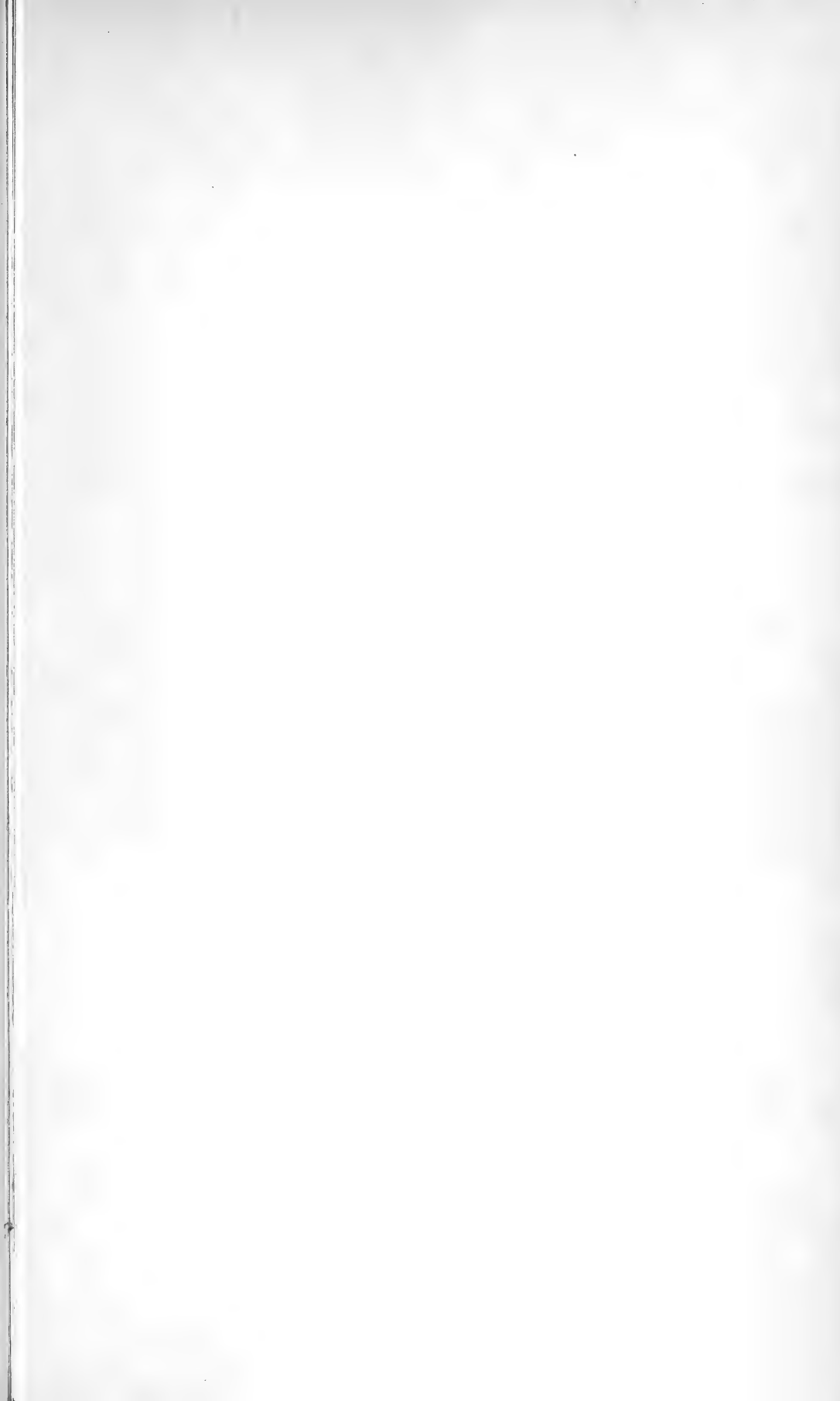
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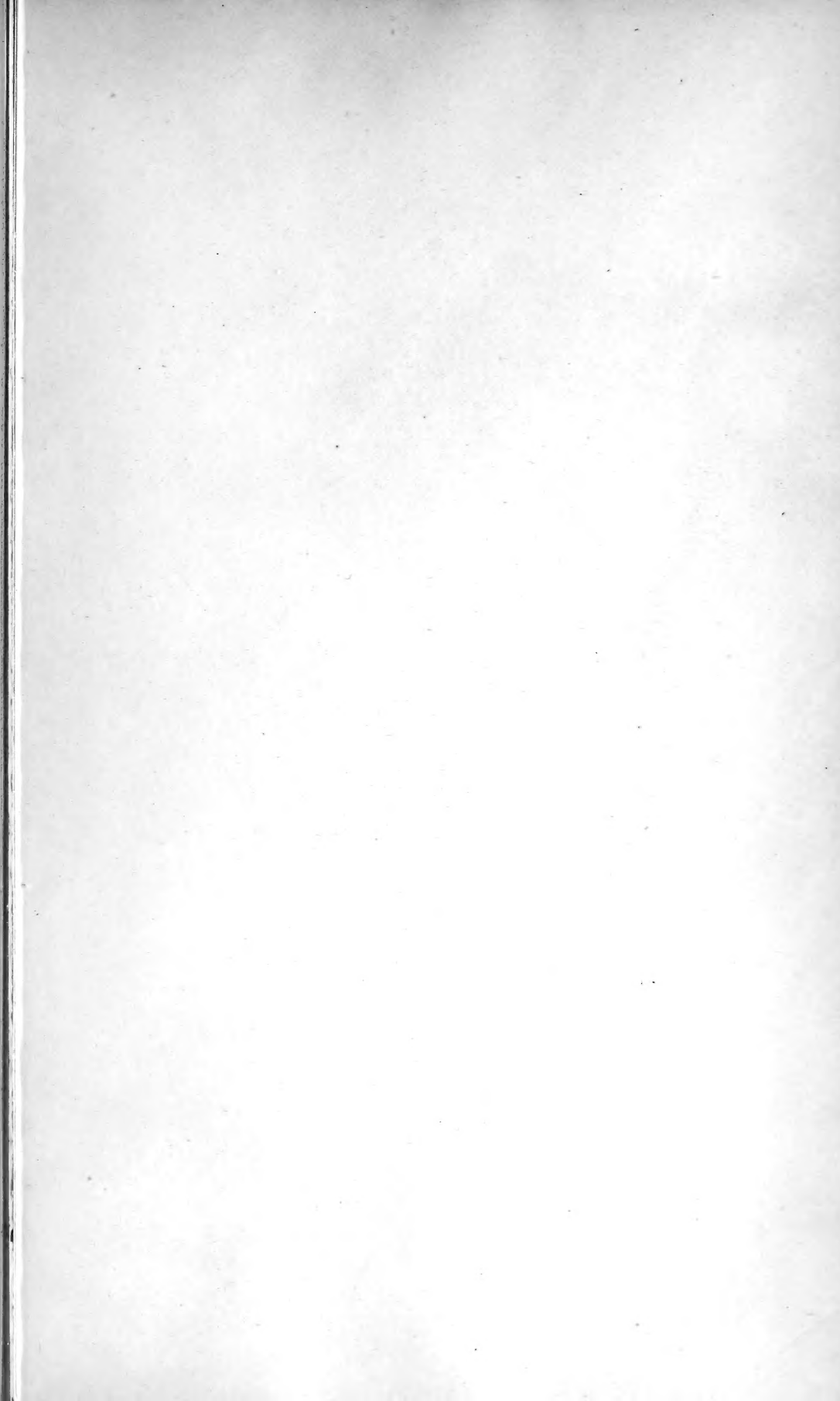




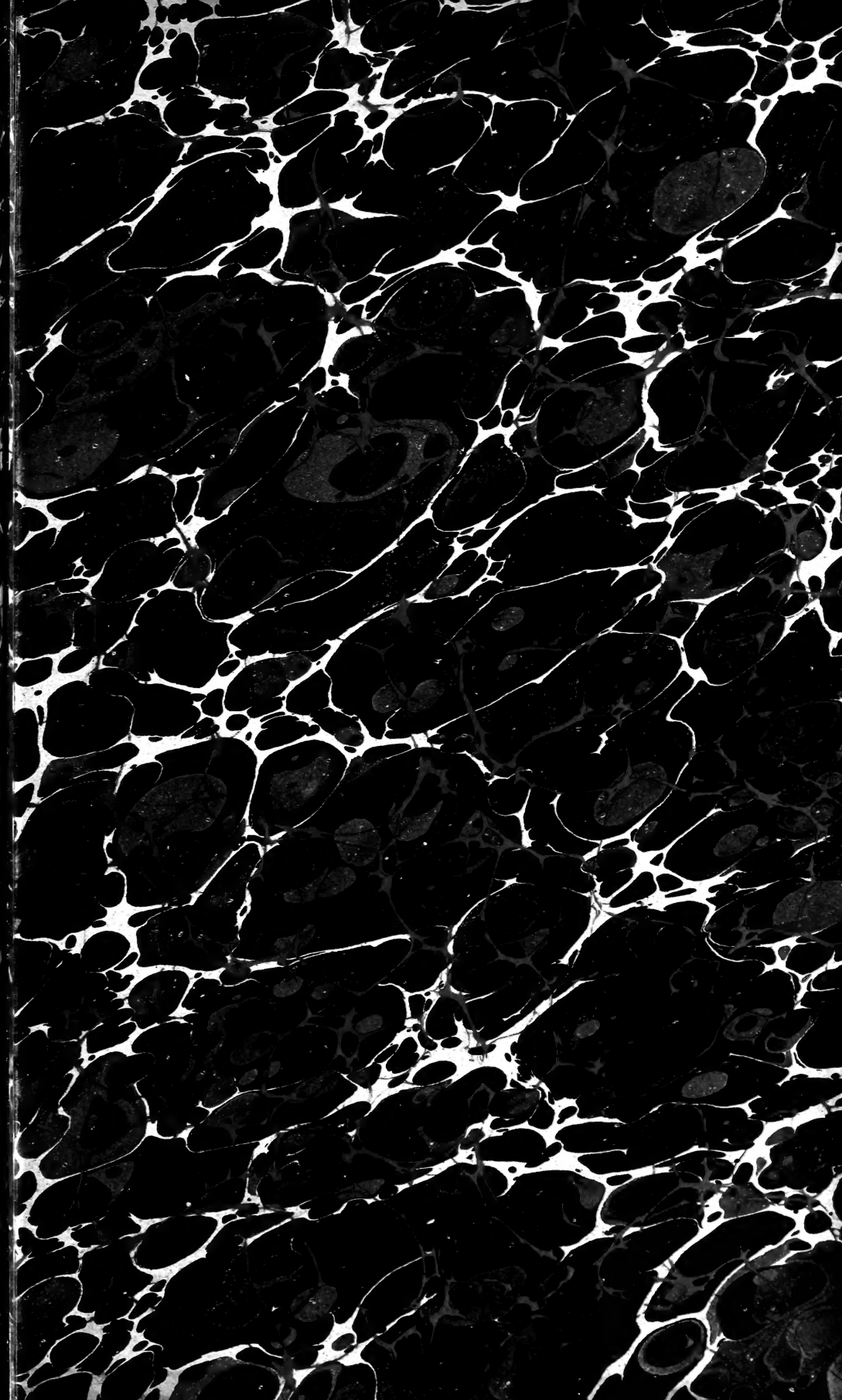












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