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ADIANTUM NIGRUM

ADIANTUM PUNCTATUM

F E R N S :

BRITISH AND EXOTIC.

VOLUME V.

CONTAINING

ASPLENIUM.

DIPLAZIUM.

HEMIDICTYUM.

CETERACH.

SCOLOPENDRIUM.

BY

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FERN S;

BRITISH AND EXOTIC.

ASPLENIEÆ. J. SMITH.

THE Ferns included under the family *Aspleniæ* are so well marked, that it would not be easy to mistake the great majority of them. They differ from the *Pteridæ* in the position of the sori, for in this tribe they are parallel with the midrib or margin of the frond, whilst in *Aspleniæ* the are oblique to the midrib, or axis of venation.

The sori are elongated, venules free or anastomosing, sori simple or binate, having a special lateral attached, linear, plane, or vaulted indusium.

The *Aspleniæ* comprise the *Scolopendrium*, *Diplazium*, *Asplenium*, *Ceterach*, *Neottopteris*, *Antigramma*, *Callipteris*, and one or two other small tribes.

GENUS I.

ASPLENIUM. LINNÆUS. J. SMITH.

THE numerous Ferns in the genus *Asplenium* have been split into many divisions by different writers upon cryptogamic botany.

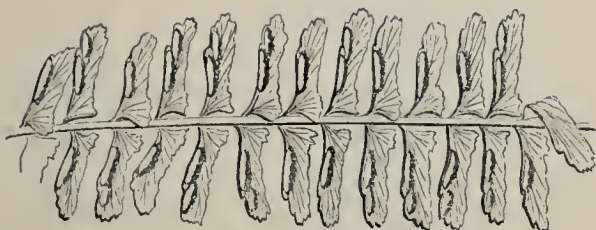
The name is derived from *a*—without, and *splen*—the spleen, from the circumstance that it was supposed these plants had some peculiar medical property which cured affections of the spleen.

The sori are linear, oblong, or elongated, simple and unilateral; with an indusium linear, plane, or vaulted, and cylindrical; veins forked or pinnate, venules direct and free.

Fronds simple, pinnate, or bi-tripinnate, varying from two or three inches to three feet in length.

The following are the different sections of various authors:—*Euasplenium*, in which *Asplenium marinum* is an example. *Trichomanes*, in which *A. trichomanes* is an example. *Darea*, having *A. viviparum* as an example. *Aeropteris*, in which is classed *A. ruta-muraria*. *Adiantum nigrum*, *A. adiantum nigrum* being an example. *Athyrium*, containing amongst others, *A. filix-fœmina*. *Allantodia*, comprising several foreign Ferns.

This genus is represented in Great Britain by eleven species:—*Asplenium adiantum nigrum*, *A. acutum*, *A. septentrionale*, *A. ruta-muraria*, *A. Germanicum*, *A. filix-fœmina*, *A. fontanum*, *A. trichomanes*, *A. viride*, *A. lanceolatum*, *A. marinum*.



Portion of mature Frond, under side.

ASPLENIUM MONANTHEMUM.

SMITH. KUNZE. LINK. SWARTZ. KAULFUSS. FEE.
WILLDENOW. MOORE AND HOULSTON. SCHLECHTENDAL.

PLATE I.—A. VOL. V.

Asplenium monanthes,

LINNÆUS. PRESL.

Asplenium—From *a*—not, and *splen*—a spleen.
One-flowered.

Monanthemum—

IN THE SECTION TRICHOMANES.

A BEAUTIFUL Fern, the fronds of which are glabrous, and of a linear-lanceolate form; their length varies from eight to twelve inches, and the colour is a brilliant green.

Pinnate, the pinnae being of an oblong form, dimidiate, and sub-imbricate, rounded at the apex, and articulate with the rachis, the inferior ones are flabellate. The upper base is parallel with the rachis, the lower base being truncate. The apex and upper margin crenate-serrate.

The sori are mostly solitary, that is, only one on a pinna, occasionally, however, there are two. In form they are linear—

horizontal, and are situated near the inferior margin. Rachis and stipes polished, and of a bronze-red colour. Terminal, attached to a slightly tufted rhizoma. The frond seldom exceeds ten inches in length.

A native of South America, the West Indies, Mexico, Peru, and the Cape of Good Hope.

It is an evergreen greenhouse species.

This is a rare Fern in cultivation, although not a difficult species to grow under ordinary care, making a compact interesting plant. It does not appear to be included in the Nurserymen's Catalogues.

I am indebted to Miss Kingston for the loan of very good fronds, and also to Mr. Henderson, of Wentworth, for others.

The illustration is from the frond sent by Mr. Henderson.



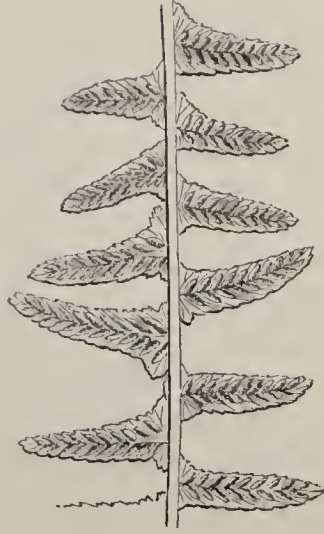


ADIANTUM SPECIOSUM

11



Portion of mature Frond, under side.



Portion of younger Frond, under side.

ASPENIUM EBENEUM.

AITON. MOORE AND HOULSTON.

PLATE II. VOL. V.

<i>Asplenium ebenum</i> ,	LINK. SWARTZ.
“ “	KUNZE. PRESL. FEE.
“ “	PLUKENET. MORISSON.
“ <i>platyneuron</i> ,	LINNÆUS.
“ <i>trichomanoides</i> ,	SCHKUHR.
“ <i>polypodioides</i> ,	SWARTZ.
“ “ <i>A. ebenum</i> ,	SCHKUHR.

Asplenium—Spleenwort.

Ebeneum—Ebony-stalked.

IN THE SECTION TRICHOMANES.

AMONG the *Aspleniums* the present Fern will always continue to be a favourite; it is easy to cultivate, requiring no

heat beyond that of a cool greenhouse, a shady situation, not too much moisture, and to be kept free from insects.

The fronds are glabrous, linear-lanceolate, pinnate; the pinnæ being sub-sessile, imbricated and oblong, the superior ones auriculate, rounded at the apex, and bluntly crenate on the edge, the inferior ones being cordate-hastate.

The colour of the pinnæ is a delicate green, the rachis and stipes being ebeneous, polished, and pubescent. Terminal, being attached to a tufted rhizoma.

The length of the frond is usually about twelve inches.

This is an evergreen greenhouse Fern.

Asplenium ebeneum is a native of the Cape of Good Hope, Mexico, and North America.

A well-known and widely-cultivated species. It is in the Catalogues of Mr. Sim, of the Foot's Cray Nursery; Messrs. A. Henderson, of Pine-apple Place; Rollisson, of Tooting; Masters, of Canterbury; Backhouse, of York; Parker, of the Paradise Nursery, Holloway; Mr. E. Cooling, of Derby; and Messrs. Booth, of Hamburg.

Plants have been forwarded by Mr. Henderson, of Wentworth, and by Mr. Masters, of the Exotic Nursery, Canterbury.

The illustration is from a plant in my own collection.



ASPENIUM SEPTENTRIONALE.

A. GERMANICUM.



Portion of mature Frond, under side.

ASPENIUM SEPTENTRIONALE.

HULL. SWARTZ. J. SMITH. HOOKER. MOORE AND
 HOULSTON. E. SMITH. FRANCIS. NEWMAN.
 SOWERBY. ARNOTT. BABINGTON. HOFFMANN. SCHKUHR.
 KUNZE. PRESL.

PLATE III.—A. VOL. V.

<i>Aeropteris septentrionalis</i> ,	LINK. FEE.
<i>Acrostichum septentrionale</i> ,	LINNÆUS. LIGHTFOOT.
“ “	HUDSON. BOLTON. WITHERING.
<i>Amesium septentrionale</i> ,	NEWMAN.
<i>Scolopendrium septentrionale</i> ,	ROTH.

Asplenium—Spleenwort.

Septentrionale—Northern.

IN THE SECTION ACROPTERIS.

THE Forked Spleenwort, as this Fern is usually called in England, is indigenous to Great Britain; it is a curious-looking

very local species, growing in the crevices of rocks, or in the interstices of loose stone walls, and by no means common in our island.

The fronds, which are glabrous, grow horizontally; they are in form elongate-lanceolate, having one or two short bifid teeth, and the apex terminating in a bifid point; the stipes smooth and black near the base. They are a rich dark green, appearing in March, and arrive at maturity in August, remaining green all winter. Radicles long, fibrous, attached to a tufted fasciculate rhizoma. The capsules are arranged in a continuous line on each vein.

The length of the frond is usually two inches.

In Scotland it is found in Forfarshire, Edinburghshire, Roxburghshire, and Perthshire. In Wales, in Caernarvonshire and Denbighshire. In England, in Northumberland, Cumberland, Westmorland, Yorkshire, Somersetshire, and Devonshire.

Abroad it is a native of Hungary, Germany, France, Lapland, Sweden, Denmark, Russia, Spain, and Italy.

In potting this plant secure good drainage, and use a mixture of peat, stones, and pieces of old mortar: water sparingly, and keep it shaded from the sun's rays.

It is contained in the Catalogues of Messrs. Baekhouse, York; A. Henderson, Pine-apple Place; E. G. Henderson, St. John's Wood; Veitch, Exeter; Rollisson, Tooting; Parker, of the Paradise Nursery, Holloway; and Sim, Foot's Cray.

For plants of this species I am indebted to Mr. Joseph Sidebotham, of Manchester; Miss Blackwall, of Llanrwst, Caernarvonshire; and Mr. Booker, gardener to W. Clark, Esq., Matlock.

The illustration is from a plant in my own collection.



Portion of mature Frond, under side.

ASPLENIUM GERMANICUM.

WEIS. WILLDENOW. MOORE AND HOULSTON. HOFFMANN.
 EHRLHART. NEWMAN. BABINGTON. DE CANDOLLE.
 LINK. MORISSON. SADLER.

PLATE III.—B. VOL. V.

<i>Asplenium alternifolium</i> , .	SWARTZ. WOLFEN. HOOKER.
“ “	WITHERING. E. SMITH.
“ “	FRANCIS. ROTH. WOODS.
“ “	SOWERBY. ARNOTT.
“ <i>Breynii</i> ,	RETZIUS. SWARTZ. WEBER.
“ “	MOHR. SCHKUH. KUNZE. FEE.

Asplenium—Spleenwort.

Germanicum—German Fern.

IN THE SECTION ACROPTERIS.

CONSIDERABLE interest is attached to the *Asplenium Germanicum*, from the circumstance that it is one of our rarest

British Ferns. It is a diminutive species, approaching nearest to the *A. ruta-muraria*, and even considered by some authors as merely a variety of this common British Fern. There are characters, however, which appear to render it a distinct species. As a cultivated plant, it does not seem by any means difficult to grow; whereas *A. ruta-muraria*, common as it is, requires more than ordinary skill to enable the cultivator to produce a good specimen. Probably this, in a great measure, may be attributed to the unnatural manner in which it is grown under pot culture; the fronds are made to stand upright, whilst in its wild state they are horizontal. This difficulty might easily be overcome by adopting wooden baskets, (somewhat similar to those in general use for orchidaceous plants,) in lieu of the ordinary flower-pot. In these baskets, those species requiring abundance of stone and old mortar, might be so arranged with these materials, with the addition of a small amount of soil and washed sand, that nature could be very closely imitated; the roots being placed, as it were, in the crevices of a rock, and with the fronds protruding through the sides of the wooden basket. In order that these baskets can be understood, a sketch of one is added as a vignette to this species.

It is a hardy species.

The fronds are pinnate, the lower pinna being ternate; pinnae alternate and distant, bifid or trifid at the apex, the pinnae being destitute of a mid-vein, glabrous, linear, and very narrow; terminal, being attached to a tufted rhizoma.

The length of the frond is from two to three inches: fronds have been gathered on the continent even double this size. The colour of the stipes is dark at the base and green above; the pinnae are pale green.

The edge of the indusium is smooth and even.

This species is very subject to variation, scarcely two fronds being alike. It is nowhere common. In Fifeshire it has been found about three miles from Dumfermline Rocks, on the River Tweed, near Kelso, Roxburghshire; also in Perthshire, on the Stenton Rocks, near Dunkeld; on the Kylæ Crags, Northumberland; in Borrowdale, Cumberland; and in Caernarvonshire, North Wales. Mr. Sowerby mentions in his work on the "Ferns of Great Britain," that Mr. W. Hawker had found

two plants in 1854, on a precipice near Scaw-fell, and that it had been collected near Llanrwst, and in the Pass of Llanberris; yet it seems doubtful whether it exists in above one or two of these localities at the present time. On the continent it is sparingly seen growing in the crevices of rocks and walls in Hungary, Sweden, Germany, France, and Italy. Mr. T. B. Charlton found this species on a loose stone wall at the village of Airolo, near the foot of St. Gothard, Pass of the Alps on the Italian side, growing on a south or south-west aspect: it was not in great abundance. In the same locality *A. septentrionale* was very abundant.

A. Germanicum should be planted among fragments of free-stone, peat, and decayed vegetable mould in small quantities: good drainage and only moderate watering are essential.

A. Germanicum being so scarce in the collections of Fern cultivators in Great Britain, few growers would like to risk their solitary specimens of this treasure in the open air, to the influence of a winter's frost. Mr. Charlton, however, having brought half-a-dozen or more examples from the Alps, and without being perhaps aware that he had secured a more than ordinarily rare Fern, hazarded three or four plants in his Fernery, at Chilwell Hall. Being anxious to know whether they survived the great cold of the severe winter of 1855, inquiry was made, and Mr. Charlton informed me that all his plants were alive; and, although those in a cold frame were more thriving than those planted in the open air, still the latter grew tolerably well. So severe a test as that of the past winter, completely establishes the fact that *A. Germanicum* will grow in the open air under cultivation.

The Fern growers of our British species will doubtless welcome this information; for if a plant will survive a degree of frost sufficiently intense to destroy many usually hardy trees, such as the Holly, Laurel, Arbutus, etc., that plant may with truth be said to be quite hardy; and as winters as severe as the one which we experienced in February and March, 1855, are of very unfrequent occurrence in this island, there can be but little danger in hazarding the present species in our open-air Ferneries.

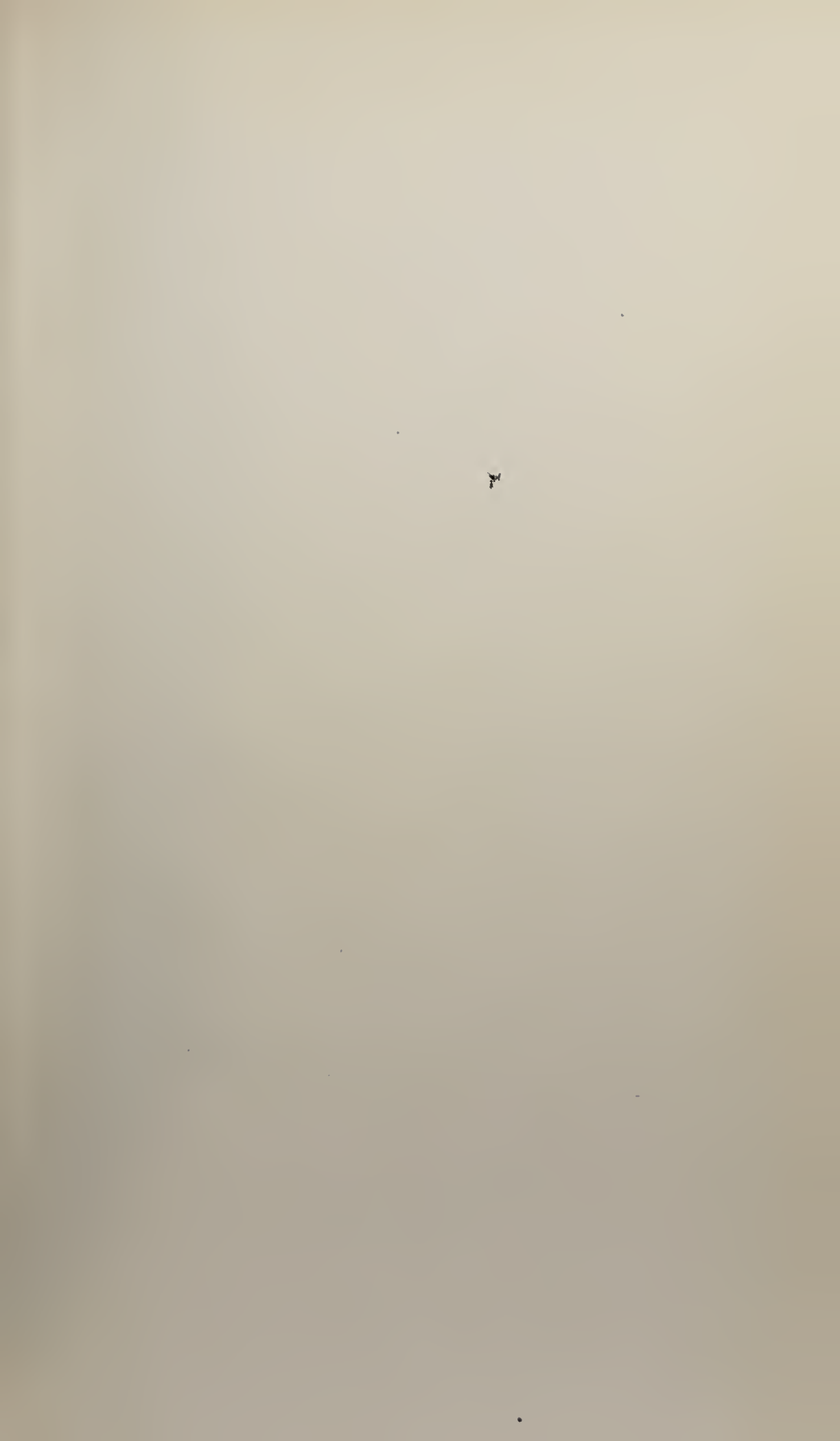
I am indebted to T. B. Charlton, Esq., Chilwell Hall, Not-

tinghamshire; and to Messrs. A. Henderson, of the Pine-apple Place Nursery, for plants of this rare species.

It is an expensive Fern, yet may be procured from Messrs. A. Henderson, Pine-apple Place; Messrs. Rollisson, Tooting; Parker, of the Paradise Nursery, Holloway; and Mr. Sim, of Foot's Cray Nursery.

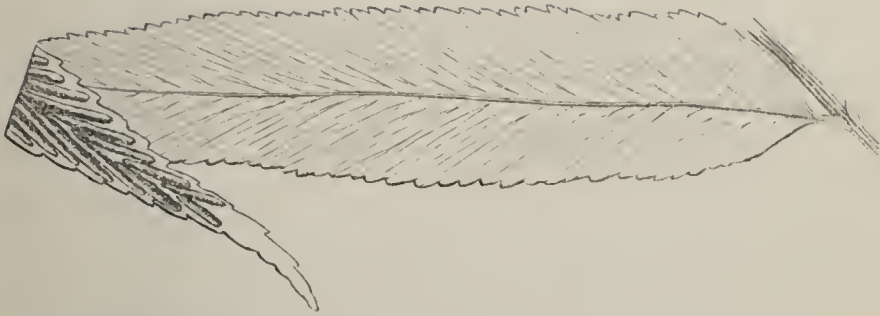
The illustration is from a plant in my own collection.







Adiantum species
M. B. P.



Portion of mature Frond.

ASPLENIUM LUCIDUM.

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

PLATE IV. VOL. V.

Asplenium—Spleenwort.

Lucidum—Shining.

No Fern cultivator should have this noble species amongst his desiderata. Its large size, the vivid shining green colour of its fronds, and its beautiful dark fructification, place the *Asplenium lucidum* above most of the finest Ferns in the genus *Asplenium*.

It is easily cultivated, requiring but little care beyond plenty of pot-room, and when well grown forms a striking and interesting object. The dark brown fructification is very handsome in contrast with the vivid green colour of the frond, and the multitude of the striping produced by the regular lines of sori, renders this plant an especial favourite to those who only grow Ferns as ornamental objects.

An evergreen greenhouse species.

The fronds usually vary from one to two feet in length,

yet occasionally larger—the plant I possess has them as much as three feet.

Glabrous, coriaceous, lanceolate, pinnate; the pinnæ acutely oblong, petiolate, wedge-shaped at the base, and the margin of the frond serrate.

The fronds are terminal, being attached to a thick, scaly, creeping rhizoma.

The long lines of sori are placed so near together upon the frond, that when mature they become confluent.

Hairy both on the stem and midrib of the pinnæ.

I am indebted to Mr. Henderson, of Wentworth; and to Mr. Masters, of the Exotic Nursery, Canterbury, for plants of this species.

It is in the Catalogues of Messrs. A. Henderson, of Pine-apple Place; E. G. Henderson, of the Wellington Nursery; Sim, of Foot's Cray; Masters, of Canterbury; and Parker, of the Paradise Nursery, Holloway.

The illustration is from a plant in my own collection.



Adiantum species

Adiantum species



Portion of mature Frond, under side.

ASPLENium BELANGERI.

KUNZE.

PLATE V.—A. VOL. V.

<i>Asplenium belangeri</i> ,	KUNZE. Not BORY.
<i>Darea belangeri</i> ,	BORY.
<i>Asplenium thunbergii</i> β . <i>belangeri</i> ,	KUNZE.
“ <i>scandens</i> ,	J. SMITH. OF GARDENS.
“ “	MOORE AND HOULSTON.
<i>Darea scandens</i> ,	FEE.

Asplenium—Spleenwort.

Belangeri—Belanger's.

IN THE SECTION DAREA OF AUTHORS.

ONE of the most elegant of the Fern tribe, forming a graceful plume of finely-divided fronds, spreading on all sides.

The caudex is erect, simple, producing numerous fronds of a fine deep green colour, paler beneath.

The fronds are from one to two feet long, and two or three inches wide, almost linear in outline, arching gracefully, pinnate; the rachis stout, and bearing bulbilles in the axils of many of the upper pinnæ. They are terminal, and are adherent to the upright caudex. The pinnæ are oblong-obtuse, deeply pinnatifid into blunt linear lobes, which are all simple except the basal one on the anterior side of the pinnæ, which is bifid, or sometimes trifid.

The sori are linear, occupying the exterior side of the linear lobes of the pinnæ; and, as always in this subgenus *Darea*, they open on the outward side, that is, on the side turned away from the rachis. The fructifications are produced over the whole frond.

There are, apparently two forms of this plant in cultivation. One introduced by Messrs. Veitch and Son, from Java, is apparently a more vigorous grower, producing longer and more pendent fronds. The other reached this country from the continental gardens, and *appears* to be of smaller growth. The form introduced by Messrs. Veitch does not appear to have the pinnules divided down to the midrib, as they are in the other form.

It is only known as a native of Java.

It is as yet not a common Fern in gardens, although the facility of propagation afforded by its bulbilles should render it not difficult of increase. Probably many cultivators are not yet aware of its claims on their attention.

The following Nurserymen have plants for sale:—

The Messrs. Veitch, at Exeter, and at their Chelsea Nursery; E. G. Henderson, of St. John's Wood; Booth, of Hamburg; Messrs. Rollisson, of Tooting; and Messrs. A. Henderson, of Pine-apple Place; R. Sim, of Foot's Cray; and Parker, of Holloway.

The plant is easily grown in a stove temperature, which it requires.

I am indebted to Messrs. Veitch, of Exeter; Booth, of Hamburg; A. Henderson, of Pine-apple Place; and E. G. Henderson, of St. John's Wood, for plants; and to Mr. Henderson, of Wentworth, for fronds.

The illustration is from a frond given to me by Mr. Henderson, of Wentworth.



Portion of mature Frond, under side.

ASPLENIIUM OBTUSATUM.

FORSTER. SCHIKUHR. J. SMITH. KUNZE. PRESL. FEE.

PLATE V.—B. VOL. V.

Asplenium—Spleenwort.

Obtusatum—Blunt-fronded.

IN THE SECTION EUASPENIUM.

AN uncommon species in cultivation. A handsome, dwarf, thick, fleshy-fronded Fern; distinct, and well deserving more general cultivation. Mr. Moore has given an excellent illustration of *Asplenium obtusatum*, at page 258, vol. iii. of the "Magazine of Botany," in the "Genera and Species of Cultivated Ferns," written by himself and Mr. Houlston.

This Fern is in the same section with *A. lucidum*—*Euasplenium*—a section which is represented in Great Britain by the Sea Spleenwort, (*A. marinum*.)

An erect-growing rigid Fern with glabrous fronds, which are coriaceous. It does not often exceed ten inches in the

length of the frond, which is pinnate, the pinnæ being oblong-obtuse, somewhat wedge-shaped at the base, and blunt at the apex. The margin deeply and bluntly serrated, rachis winged throughout, the stipes scaly.

The sori copious, eventually becoming confluent.

Terminal fronds attached to a somewhat creeping rhizoma.

A cool greenhouse evergreen species, not difficult to cultivate.

A native of Van Diemen's Land, New Holland, and New Zealand. The *A. lucidum* was also introduced from the latter country.

This Fern was received at the Royal Gardens, Kew, in the year 1843, from the Messrs. Osborn.

The *A. obtusatum* of Labillardiere is a different species; it is the *A. sarmentosum* of Willdenow.

My thanks are due to Mr. Henderson, of Wentworth, for a plant and fructified fronds of *A. obtusatum*.

It is in the Fern Catalogue of Messrs. Rollisson, of Tooting; and that of A. Henderson and Co., Pine-apple Place.

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



ASPLENium PALMATUM.

VI VOL. 3.



Portion of a nearly mature Frond—upper side.

ASPENIUM PALMATUM.

LAMARCK. MOORE. SCHUHR. J. SMITH. KAULFUSS.
 SWARTZ. SPRENGEL. WILLDENOW.
 KUNZE. LINK. FEE. PRESL. PLUKENET. TOURNEFORT.

PLATE VI. VOL. V.

Asplenium hemionitis,

BROT. AITON. HORT. KEW.

Asplenium—Spleenwort.

Palmatum—Hand-shaped.

IN THE SECTION EUASPENIUM.

A VERY distinct and handsome Fern, in the same section of the Spleenworts, (*Euasplenium*,) as *Asplenium lucidum*. It more closely resembles the form of the ivy-leaf, than that of the generality of even simple-fronded Ferns. It is not generally met with in collections, although deserving to be cultivated wherever the Filices are grown.

Dwarf, compact, easily grown with ordinary care, and making a pretty striking specimen, are recommendations which place the *Asplenium palmatum* with the most distinct and beautiful of the Fern tribe. Amongst dried fronds in the "Hortus Siccus," none shews off to greater advantage than the *A. palmatum*. Whilst mentioning dried Ferns, it will perhaps prove of service to those who wish to possess a collection of dried fronds, if a few hints are given by way of advice. Fronds are often seen imperfectly pressed, often bad in colour, and, indeed, frequently spoiled by mildew. By placing the frond in a press immediately after it is gathered, all the pinnules can be properly expanded, and, by using blotting-paper between each specimen, and changing it every week until the Ferns are perfectly dry, that vivid colour, so beautiful when in a living state, may, in most instances, be retained.

An evergreen greenhouse Fern, introduced into England in 1816.

A native of the South of Europe and North Africa, Madeira, Canary Isles, Azores, Teneriffe, Lusitania, Barbary, and Spain.

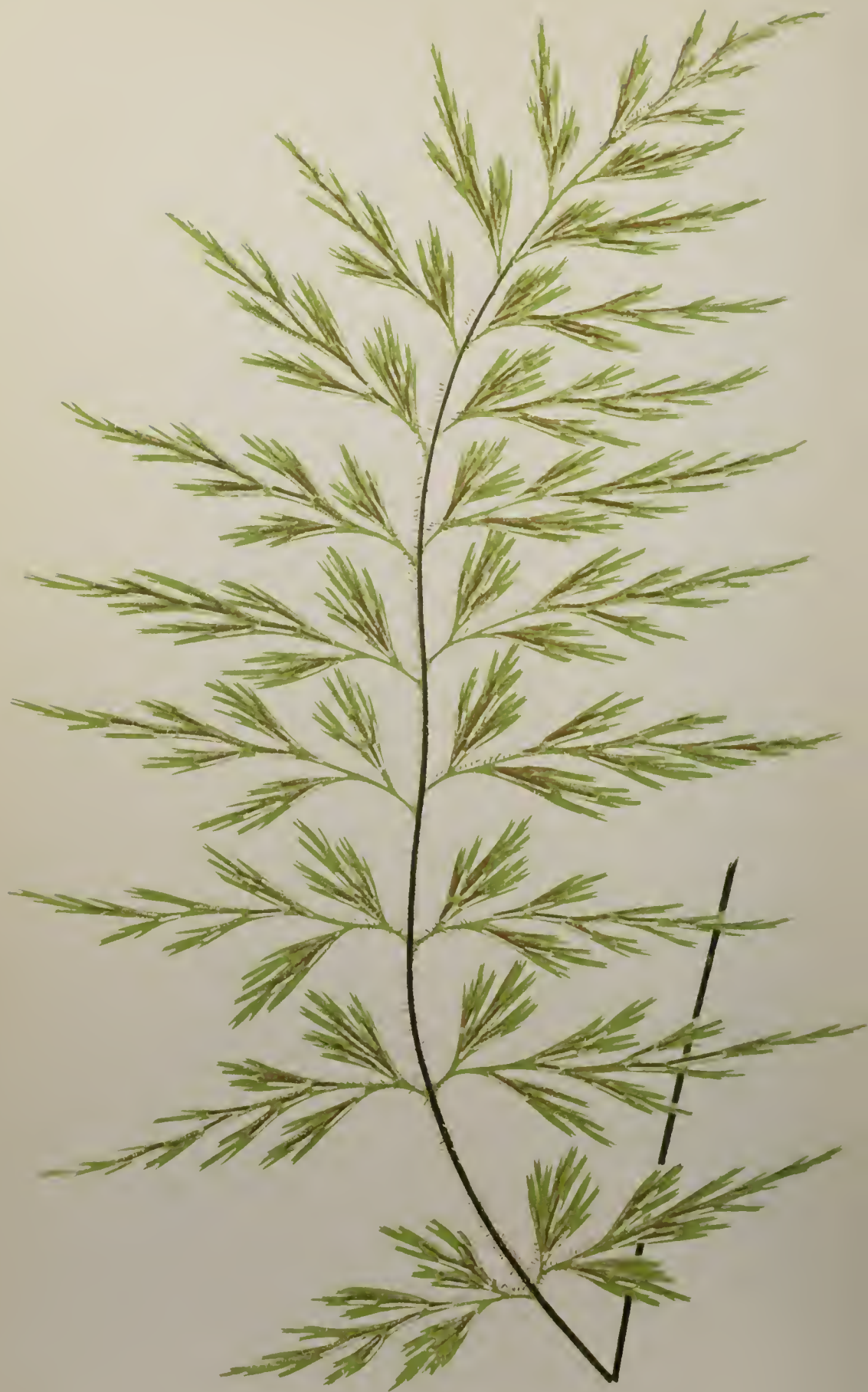
Simple fronds, which are glabrous, brilliant green, coriaceous; fronds five-lobed, which are acute, the middle lobe being the longest, cordate at the base, margin entire, terminal.

The fronds, usually ten inches high, are attached to a thick creeping rhizoma. The sori profuse, giving the frond the appearance of being striped in long lines all over its under surface.

I am indebted to Mr. Sim, of the Foot's Cray Nursery, for plants of this species; and to Miss Kingston, of Colwiek; Mr. Norman, of Hull; and to Mr. Henderson, of Wentworth, for fructified fronds.

It is in the Fern Catalogues of Messrs. A. Henderson, of Pine-apple Place; Rollisson, of Tooting; Booth, of Hamburg; Mr. Sim, of Foot's Cray; Mr. Veitch, Jun., of the Exotic Nursery, Chelsea; and of Mr. Parker, of Holloway.

The illustration is from a frond given to the author by Mr. Henderson, of Wentworth.



ASTERIDIUM P. ANDRÉANUM

VII VOL.



Portion of mature Frond, upper side.

ASPENIUM PRÆMORSUM.

SWARTZ. SMITH. PRESL. FEE. PLUKENET.

PLATE VII. VOL. V.

<i>Asplenium canariense,</i>	WILLDENOW. KUNZE.
“ <i>furcatum,</i>	THUNBERG.
“ <i>cuneatum,</i>	HOOKEE AND GREVILLE.
“ <i>erosum,</i>	HORT.
“ <i>laceratum,</i>	DESVAUX. HOOKEE AND GREVILLE.

Asplenium—Spleenwort.

Præmorsum—Jagged-pointed.

IN THE SECTION ACROPTERIS OF AUTHORS.

FERNS grow so differently in dissimilar climates and localities, that great difficulty is frequently felt by botanists when forming their opinion as to whether certain plants are really distinct species, or have only varied from the normal form, owing to local circumstances. The present species so closely approaches that of several others, that it seems probable that the various forms such as *Asplenium canariense*, *A. furcatum*, *A. præmorsum*, etc., are merely varieties of one Fern. To the botanist this is very perplexing, and requires a thorough knowledge of all the Ferns in the world, in order to form a trustworthy opinion of each plant; for if we only turn to the many varied forms which seedlings have assumed from *Scolopendrium vulgare*, Poly-

stichum angulare, or *Polypodium vulgare*, we at once recognise features in many respects equally distinct with those which in foreign Ferns have been regarded as sufficient in order to consider them different species. This difficulty is not of so much moment to the ordinary cultivator, for it matters but little to him whether the plant he is cultivating be called a species or a variety, providing its name is generally adopted, so that the plant may be recognised from that of other species or varieties.

This handsome Fern is, wherever grown, looked upon as an especial favourite, being very distinct in the form of its fronds, and in the habit of its growth.

It is a native of the West Indies, Mexico, New Holland, Teneriffe, and the Canary Islands.

The form of the frond is lanceolate, or triangularly elongate; it is bipinnate, and the pinnae are sharply elongated, narrowing to a point at the apex; pinnules distant, cuneate lanceolate, three or five lobed, the middle lobe being elongate, margin inciso-serrate.

Length of the frond eighteen inches to two feet; colour light green.

Rachis and stipes completely covered with thin brown scales, terminal, rising from a stout creeping rhizoma.

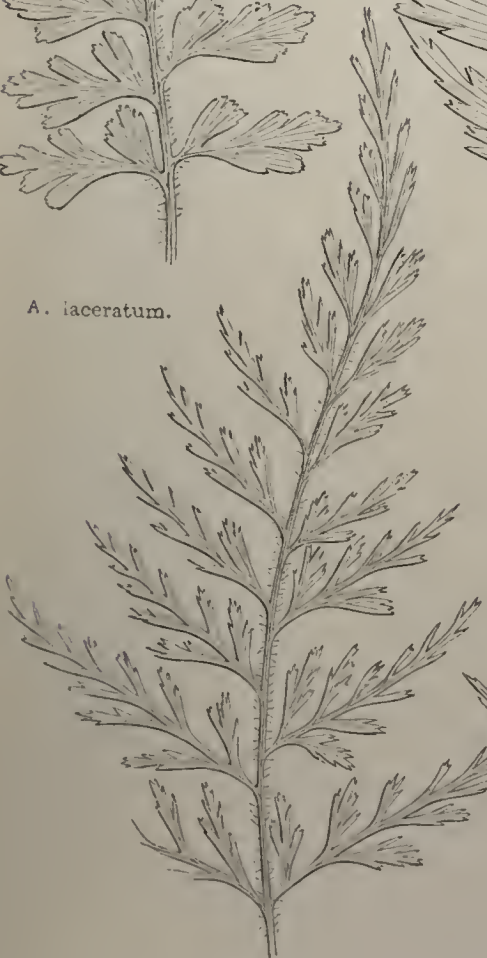
I am indebted to the Curator of the Cambridge Botanic Gardens, and to Messrs. Booth, of Hamburg, for plants of this species; and to Mr. Henderson, of Wentworth; Mr. Ingram, of the Royal Gardens, Windsor; Miss Kingston, of Colwick; Mr. Norman, of Hull; and to Mr. Sim, of Foot's Cray; for fructified fronds.

It is in the Fern Catalogues of Messrs. Rollisson, of Tooting; Booth, of Hamburg; Masters, of Canterbury; Parker, of Holloway; Sim, of Foot's Cray; and Veitch, of Exeter.

The illustration is from a plant in my own collection.

Mr. Henderson, of Wentworth, has forwarded the fronds from which the following wood-cuts have been executed. As the different forms of *Asplenium præmorsum* vary in a striking manner from each other, it has been deemed desirable to give a figure of each. *A. laceratum*, of Hooker and Greville, (*A. cuneatum* of the same authors,) is a pretty little Fern from the Spanish Mains. It is very distinct, yet bears strong resemblance in its manner of fructifying, to the *A. præmorsum*. The *A. erosum*

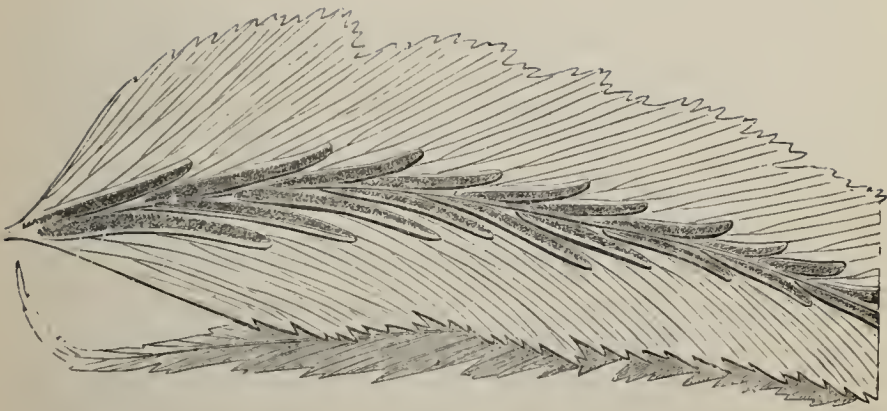
is also strikingly distinct, and may prove to be a separate species; it differs especially in one respect, namely, in not having the stipes and rachis covered with brown scales, as in the *A. præmorsum*. The *A. canariense* and *A. præmorsum* approach nearer to each other in every respect.

*A. laceratum.**A. erosum.**A. præmorsum.**A. canariense.*



FRAXINUM LINDL.

VII-121



Portion of mature Frond, under side.

ASPLENIUM SERRA.

LANGSDORFF AND FISCHER. MOORE AND HOULSTON.
J. SMITH. PRESL. LINK. FEE, *not* KUNZE.

PLATE VIII. VOL. V.

Asplenium—Spleenwort.

Serra—Saw-edged.

IN THE SECTION ACROPTERIS OF AUTHORS.

THIS strikingly-beautiful and noble Fern is remarkable for its large size, prominent fructification, and for the vivid green colour of its fronds. It is but seldom met with in collections, and is not included in any of the catalogues of the English Nurserymen. It does not appear to be difficult to cultivate, and will well repay the labour bestowed upon it, as a well-grown specimen becomes a prominent object in a collection of Ferns.

It was first received at the Royal Gardens of Kew, in the year 1844, from Messrs. Loddiges.

Asplenium serra is a stove Fern.

A native of Brazil.

Fronde lanceolate, pinnate, having pendulous pinnæ, which are lanceolate, elongate-acuminate, coriaceous, petiolate, the inferior base wedge-shaped, and the upper base circular, deeply serrate on the margin.

Length of frond from two feet to two feet and a half; evergreen, dark green.

Rachis and stipes profusely covered with thin brown scales, terminal, being attached to a stout scaly creeping rhizoma.

Sori linear, and situated near the costa.

I have not been fortunate enough to procure a plant; beautiful fronds were forwarded by Mr. Henderson, of Wentworth.

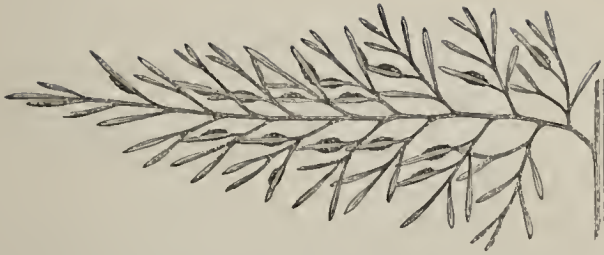
It is in the Catalogue of Messrs. Booth and Son, of the Hamburg Nursery.

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



ASPENIUM VIVIPARUM

IX—Vol. 5.



Portion of mature Frond, upper side.

ASPLENIUM VIVIPARUM.

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

PLATE IX. VOL. V.

Asplenium fœniculaceum,
Darea vivipara,
 " *fœniculacea*,
Cænopteris vivipara,

H. B. K.
 WILLDENOW. FEE.
 SIEBER.
 BERGIUS. BERGM.

Asplenium—Spleenwort. *Viviparum*—Viviparous.

IN THE SECTION DAREA OF AUTHORS.

An *equisetum*-looking Fern, with a pendulous habit. A very distinct species, worthy of cultivation in every collection. Amongst the *Aspleniums*, a certain number of them are termed viviparous, from the circumstance, that independently of their power of reproduction by spores, they have an additional power of producing young plants upon the fronds. The present species, and indeed nearly all in the section *Darea*, have this power in common with others, such as the *Gymnogramma polypodioides*, *Polystichum proliferum*, *Cyrtogonium flagelliferum*, *Cystopteris bulbifera*, *Hemionitis palmata*, etc.

Asplenium viviparum is a very interesting species in a collection of dried Ferns; and whilst referring to a Hortus Siccus, I take the opportunity of replying to numerous inquiries respecting where fronds may be purchased. At the present moment I am only aware of Mr. Pamplin, the Botanical Bookseller, of Frith Street, London, who, I believe, supplies fronds for collections of dried Ferns.

The *A. feniculaceum* of Authors differs from the present species, but may be considered as a variety of *A. viviparum*.

Received at the Royal Gardens, Kew, in the year 1844, from Messrs. Rollisson.

A stove Fern, found in the Mauritius.

This evergreen species has glabrous fronds, of an ovate-lanceolate shape, tripinnate, with oblong acuminate pinnæ, the apices of which are viviparous, the segments linear-filiform.

Fronds terminal, attached to a somewhat ereeping scaly rhizoma.

Propagated very readily by cultivating the young plants that are produced on the fronds; these are best secured close to the soil by small pieces of wire bent in the form of a hair-pin.

I am indebted to Mr. Ingram, of the Royal Gardens, Windsor, and to Mr. Henderson, of Wentworth, for plants of this species; and to the same gentlemen, and Messrs. Booth, of Hamburg, for fronds.

A. viviparum may be procured of Messrs. A. Henderson, of Pine-apple Place; Veitch, Jun., of Chelsea; Sim, of Foot's Cray; E. G. Henderson, of St. John's Wood; Rollisson, of Tooting; Parker, of Holloway; Booth and Son, of Hamburg; and E. Cooling, of Derby.

The illustration is from a plant in my own collection.



ASPENIUM PLANICAULE.

X-VOL. 7.



Portion of mature Frond, under side.

ASPENIUM PLANICAULE.

WALLICH. MOORE AND HOULSTON. J. SMITH.

PLATE X. VOL. V.

Asplenium truncatum,
 “ *mexicanum*,

DON. PRESL.
 MARTENS AND GALLEOTTI. KUNZE. FEE.

Asplenium—Spleenwort.

Planicaule—Smooth-stalked.

IN THE SECTION ADIANTUM NIGRUM OF AUTHORS.

THIS interesting Fern, frequently seen in gardens under the name of *Asplenium fragrans*, is a species well deserving of general cultivation, for when well grown it is capable of being an excellent exhibition plant, the habit being compact, and the fronds somewhat drooping.

A stove Fern from the Islands of Mexico, and I believe found in several parts of the East Indies.

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

From its easy propagation by division of the roots, it is probably a not uncommon species in cultivation in Great Britain.

This ornamental stove species has slender glabrous fronds, which are triangularly-elongate; bipinnate, pinnules remote; those pinnæ at the base longest, becoming shorter as they approach the apex of the frond, being in fact oblong cuneate, each pinnule is of an oblong wedge-shaped form, with an acute apex, the one nearest the rachis being largest. Decurrent at the base, and serrate on the margin.

Stipes and rachis dark coloured beneath, and green above; rachis winged. The fronds terminal, rising out of a somewhat tufted rhizoma.

Length of frond from one foot to eighteen inches, more frequently the former. Colour of frond deep green.

The fructification is prettily arranged, but not very bold in appearance.

It appears to be better known under the name *Asplenium mexicanum* of Kunze, than that of *A. planicaule* of Wallich.

I am indebted to Sir Oswald Mosley, Bart., of Rolleston Hall; Messrs. E. G. Henderson, of the Wellington Nursery, St. John's Wood; Mr. Lamb, gardener to F. Wright, Esq., of Osmaston Manor; Mr. Stewart, of the Sudbury Gardens, Staffordshire; and to Messrs. Booth and Son, of Hamburg, for plants of this species; and to Mr. Norman, of Hull, for fronds.

It is in the Fern lists of Messrs. A. Henderson, of Pine-apple Place; Lucombe, Pince, and Co., of Exeter; E. G. Henderson, of St. John's Wood; Sim, of Foot's Cray; Parker, of Holloway; Masters, of Canterbury; Booth and Son, of Hamburg; and E. Cooling, of Derby.

The illustration is from a plant in my own collection.



PLATE I. FERROBROM

NO. 1 VOL.



Portion of mature Frond, under side.

ASPLENIO BULBIFERUM.

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

PLATE XI. VOL. V.

Asplenium—Spleenwort.

Bulbiferum—Bulb-bearing.

IN THE SECTION DAREA OF AUTHORS.

THE *Asplenium bulbiferum* is a universal favourite with the Fern cultivators; it is so readily grown into a handsome specimen, and from the circumstance that it is viviparous in the highest degree, is consequently a common species, being met with in almost every greenhouse collection. It has a graceful pendulous habit, the fronds being literally borne down by the weight of the young plants with which a mature frond is quite covered over. With plenty of pot room, and with ordinary care, this species makes an interesting as well as a beautiful specimen.

It appears to have first arrived in England about the year 1820, yet was not introduced into the Royal Gardens of Kew until 1843, when it was brought there by Mr. John Edgerley.

This is an evergreen greenhouse Fern.

Native of New Holland and New Zealand.

The fronds are lanceolate, and are subtripinnatifid, pinnae oblong, acuminate; pinnules somewhat egg-shaped, being largest near the midrib, and wedge-shaped at the base. Segments linear-acute.

The length of the frond is from eighteen inches to two feet, the first three inches being naked. The stem is green above, and brown on the lower side; the colour of the pinnules pale green. On the under side are minute dark cordate scales. Viviparous. Not unfrequently young plants on the fronds will be seen with half a dozen fronds of their own.

The fructification is bold, mostly a double row on each pinna.

The frond is terminal, being adherent to a thick and somewhat creeping scaly rhizoma, the scales, which all stand upright around the rhizoma, frequently resemble a double everlasting-looking flower.

For plants my thanks are due to Mr. Henderson, of Wentworth; Mr. E. Cooling, Nurseryman, Derby; and to Mr. Lamb, gardener to F. Wright, Esq., of Osmaston Manor.

The following Nurserymen's Catalogues contain this species:—Messrs. Lucombe, Pince, and Co., of Exeter; Veitch, of Exeter; Masters, of Canterbury; Parker, of Holloway; Rollisson, of Tooting; E. G. Henderson, of St. John's Wood; Sim, of Foot's Cray; Booth, of Hamburg; and E. Cooling, of Derby.

The illustration is from a plant in my own possession.



Young plant growing upon mature Frond.



P. M. LINDSAYI

A. VADIAE



Portion of mature Frond, upper side.

ASPLENium HENDERSONI.

Houlston. Hooker. Moore.

PLATE XII.—A. VOL. V.

Asplenium—Spleenwort.

Hendersoni—Henderson's.

IN THE SECTION EUASPENIUM OF AUTHORS.

CONSIDERABLE obscurity hangs over the *Asplenium hendersoni*; it appears to have been raised from spores some years ago, by Mr. Henderson, gardener to Earl Fitzwilliam, at Wentworth House. Mr. Moore mentions in his "Genera and Species of Cultivated Ferns," that he has searched the extensive herbaria of Mr. J. Smith, and Mr. R. Heward, without finding any fronds in the slightest degree resembling this Fern, therefore he suggests that it may not be a distinct species, but a singular variety of some other Fern. However, as it does not seem possible to refer to any known species, Mr. Houlston has very properly named it *A. hendersoni*, after the indefatigable and successful cultivator at Wentworth. It has hitherto maintained its singular character—constant in cultivation.

Mr. Henderson is unable to state from what country the spores were imported.

The fronds, which are glabrous and elongated in form, are pinnate below, whilst they are pinnatifid, or irregularly laciniated

on the upper part. The lower pinnæ are elongate, cordate-hastate, obtuse, and deflexed. The middle pinnæ decurrent, adnate: the apex entire, and often forked. The margin entire.

Stipes thinly scattered over with long narrow brown scales. The length of the stipes is about three inches.

The fronds are about eight inches in length.

Probably a greenhouse species.

As yet I have received no plant of this Fern.

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

My thanks are due to Sir William Hooker, for a frond of *A. hendersoni*.

The illustration is from the frond forwarded to me by Sir William Hooker.



Portion of mature Frond, upper side.

ASPLENIUM RADICANS.

SWARTZ. (*Not of WILLDENOW, PRESL, or SPRENGEL.*)
MOORE AND HOULSTON.

PLATE XII.—B. VOL. V.

<i>Asplenium rhizophorum,</i>	SWARTZ. SCHRADER. SMITH.
“ <i>bulbiferum,</i>	BERNHARDI.
“ <i>rhachirhizon,</i>	OF SOME AUTHORS.
“ <i>karstenianum,</i>	OF CONTINENTAL GARDENS.
<i>Diplazium radicans,</i>	PRESL.

Asplenium—Spleenwort.

Radicans—Rooting.

It is a singular feature of some Ferns, such as *Adiantum caudatum*, *Cyrtogonium flagelliferum*, *Asplenium attenuatum*, *D. flabellifolium*, *A. reclinatum*, *A. brachyopterum*, *A. rachirhizon*, of Raddi, and the present species, that young plants form at the apex of the frond, and that if these are bent down to the soil, and fastened there with hair-pins, the propagation of plants of the above Ferns is easily accomplished.

This is a beautiful evergreen weeping stove species.

An inhabitant of Jamaica, and the Island of Cuba.

The fronds, which are glabrous, are elongate, triangular, bipinnatifid; pinnæ elongate, acuminate, being obtusely wedge-

shaped at the base; segments obtusely-ovate, slightly crenate on the margin. The largest pinna is that nearest the rachis.

Rachis and stipes ebeneous.

Fronde from fifteen to eighteen inches in length, being without pinnae at the apex, and rooting at the extreme point.

The colour is pale green.

The frond terminal, being attached to a fasciculate rhizoma.

An uncommon but exceedingly interesting species, and one which is easily cultivated.

I am not aware that it is in any other British Catalogue than that of Messrs. Veitch, Jun., of the Exotic Nursery, Chelsea. Abroad it is in that of Messrs. Booth and Son, of Hamburg.

For a plant of this species I am indebted to Messrs. Booth and Son, of Hamburg.

The illustration is from a plant in my own possession.



A

ARCTIUM DIMIDIATUM



A. RECLINATUM.



Portion of mature Frond, under side.

ASPENIUM DIMIDIATUM.

SWARTZ. MOORE AND HOULSTON. KUNZE. FEE. PRESL.

PLATE XXI.—A. VOL. V.

Asplenium samiaefolium,
 “ *formosum*,

HORT, not WILLDENOW.
 HORT.

Asplenium—Spleenwort.

Dimidiatum—Halved.

IN THE SECTION TRICHOMANES OF AUTHORS.

THE present Fern is a handsome species in the dwarf and interesting section *Trichomanes* of Authors. It is seldom to be met with in private collections, and indeed is very rare in the Nurserymen's Catalogues. Some months since I observed a very nice plant in the Royal Gardens at Kew, and, most probably, it will be found in that splendid collection at the present time.

Asplenium dimidiatum is an evergreen stove Fern.

I believe I am right in stating that hitherto it has only been found in a wild state in the West Indies.

It appears to have been introduced into England in the year 1827, it is therefore somewhat singular that nearly thirty years have not sufficed to make it a generally cultivated species.

The fronds, which are glabrous and slender, are in form linear-lanceolate; pinnate, having oblong pinnæ which are imbricate, and attached to the stem by a footstalk. The pinnæ are rounded at the apex, and articulate with the rachis. The superior base being parallel with the rachis, whilst the inferior base is truncate obliquely. Margin serrate.

The length of the frond is twelve inches, and the colour pale green.

Sori, of which five or six pairs are situated on each pinna, are linear.

The rachis and stipes winged and ebenaceous. The frond, which is terminal, is attached to an upright fasciculate rhizoma.

I have not as yet been fortunate enough to procure a plant of this interesting species.

It is included in Messrs. A. Henderson's Catalogue at a reasonable price.

My thanks are due to Sir William Hooker, the Director of the Royal Gardens, Kew, for a frond of this species.

The illustration is from Sir William Hooker's frond.



Portion of mature Frond, upper side.

ASPENIUM RECLINATUM.

J. HOULSTON. MOORE.

PLATE XIII.—B. VOL. V.

Asplenium—Spleenwort.

Reclinatum—Reclining.

IN THE SECTION TRICHOMANES OF AUTHORS.

ANOTHER interesting Fern in the pretty dwarf section *Trichomanes* of Authors. Most probably this is a rare species in cultivation in Great Britain, as I have been unable to trace it in any other collection than that of the Royal Gardens, Kew.

A beautiful weeping Fern. An evergreen greenhouse species. A native of the Island of St. Helena.

The fronds are slender, delicate, pendulous, and in form lanceolate. Pinnate, the pinnæ being membranous, oblong in form, rounded at the apex, superior base rounded and subauriculate, inferior base truncate, bluntly crenate on the margin. Slightly petiolate. Rachis winged throughout.

The fronds, which are terminal, are attached to an upright fasciculate rhizoma.

The length of the frond twelve inches, rooting at the apex, and its colour a heavy green.

Asplenium reclinatum was introduced into this country in the year 1847.

This Fern does not appear to be described in the works of Presl, Kunze, Kaulfuss, Fee, Link, or Smith.

The *A. reclinatum* requires in its cultivation a similar treatment to the other members of the section *Trichomanes* of *Asplenium*. It will, however, require more pot-room than the dwarfer species of this section.

A difficult species to procure, as it is not in any of our Nurserymen's Catalogues.

My thanks are due to Sir William Hooker, who kindly sent me a frond of this species.

The illustration is from Sir William Hooker's frond.



ADIANTUM RHIZOPHYLLUM

ADIANTUM BRASILIENSE



Portion of mature Frond, upper side.

ASPLENium RHIZOPHYLLUM.

LINNÆUS. KUNZE. SWARTZ. WILLDENOW. PRESL.

PLATE XIV.—A. VOL. V.

<i>Asplenium myriophyllum</i> , var.,	PRESL.
<i>Antigramma rhizophylla</i> ,	J. SMITH. MOORE & HOULSTON.
<i>Camptosurus rhizophyllus</i> ,	LINK. PRESL. FEE.

Asplenium—Spleenwort.

Rhizophyllum—Rooting-leaved.

IN THE SECTION ANTIGRAMMA OF SOME, AND CAMPTOSURUS
OF OTHERS.

THIS is another example of a solitary Fern, having been separated from the genus *Asplenium*. In its characters it seems intermediate between *Asplenium* and *Scolopendrium*. Link formed a genus for this species which he called *Camptosurus*, whilst Smith, who also formed a separate genus for it, called it *Antigramma*. Although it certainly seems very distinct from *Asplenium*, I feel disposed to adopt the plan of Linnæus and Kunze, and retain it as an *Asplenium*, at the same time giving it a section to itself. No other Fern has as yet been discovered, which could be classed in the section *Antigramma*.

In habit it is procumbent, forming young plants at the apex of the frond. If planted in a wide shallow pan, it will form

fresh plants at the apex of the fronds, and by this means soon spreads itself over a large surface.

It seems to be a species long known in England, having probably been introduced as early as 1680.

An evergreen greenhouse Fern.

A native of North America—Canada and Carolina, growing in damp shady situations.

The fronds, which are simple, are glabrous, cordate-elongate, the upper portion slender, filiform, acuminate, tapering to the apex, and rooting at the extreme point. Fronds terminal, being adherent to a somewhat tufted rhizoma.

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

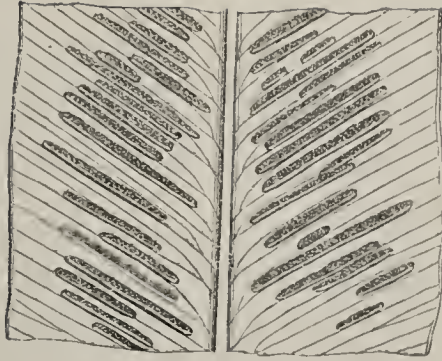
Sori linear, unilateral, mostly arranged in pairs on the proximate sides of the primary venules; when mature, the sori confluent. Indusium linear, the free margins of each pair conniving.

Veins forked.

For plants of this species I am indebted to Mr. R. Parker, of Holloway; and to Mr. R. Sim, of Foot's Cray; and for fronds to Mr. Norman, of Hull.

It is in the Fern Catalogues of Messrs. Rollisson, of Tooting; Sim, of Foot's Cray; A. Henderson, of Pine-apple Place; Parker, of Holloway; and Kennedy, of Covent Garden.

The illustration is from a frond kindly forwarded by Mr. G. Norman, of Hull.



Portion of mature Frond, under side.

ASPLENIUM BRASILIENSE.

SWARTZ? MOORE AND HOULSTON. OF GARDENS.
(Not of RADDI.)

PLATE XIV.—B. VOL. V.

<i>Asplenium crenulatum</i> ,	PRESL. KUNZE. J. SMITH.
“ <i>nidus</i> ,	RADDI. LINK.
“ <i>Raddi</i> ,	FEE.
“ <i>serratum</i> ,	LINK?

Asplenium—Spleenwort.

Brasiliense—Brazilian.

IN THE SECTION EUASPLENIUM OF AUTHORS.

A PRETTY interesting *Scolopendrium*-looking Fern, well worthy of extensive cultivation. The fructification is prettily shewn on the thick fleshy green fronds, rendering the *Asplenium Brasiliense* an attractive species.

A native of Brazil and various parts of South America.

An evergreen stove Fern.

Introduced into the Royal Gardens, Kew, in the year 1836, by Messrs. Loddiges.

The fronds are glabrous, simple, coriaceous, slightly undulated. In form elongate-lanceolate, decurrent at the base, sub-entire at the margin, and viviparous at the apex.

Length of frond from twelve to forty inches; colour deep green.

Stipes scaly, one inch in length.

Fronds terminal, being adherent to an erect rhizoma.

For plants and fronds I am indebted to Messrs. Rollisson, Nurserymen, Tooting.

It is in the Fern Catalogues of Messrs. Kennedy, of Covent Garden; Booth, of Hamburg; A. Henderson, of Pine-apple Place; E. G. Henderson, of St. John's Wood; and Rollisson, of Tooting.

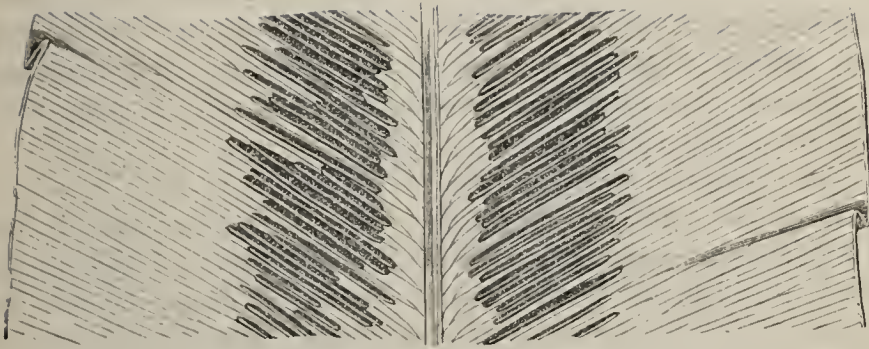
The illustration is from a frond forwarded by Messrs. Rollisson, of Tooting.



ASPLENIUM NIDUS



A TRACHYPOGON



Portion of mature Frond, under side.

ASPLENIUM NIDUS.

LINNÆUS. HOOKER. KUNZE. SWARTZ. SPRENGEL.
 WILLDENOW. PRESL. (*Not of RADDI, nor of LINK.*)

PLATE XV.—A. VOL. V.

Neottopteris vulgaris,
 “ *nidus*,
 “ “

J. SMITH. MOORE & HOULSTON.
 FEE. BREYN? MORISON.
 HOOKER AND BAUER.

Asplenium—Spleenwort.

Nidus—Birds’ nest.

IN THE SECTION NEOTTOPTERIS OF AUTHORS.

THE present species is very properly named the “Birds’ nest Fern,” the broad handsome fronds rising all round the rhizoma, giving quite the appearance of a large birds’ nest.

Some of our principal authorities have separated this species from the *Aspleniums*, under the name of *Neottopteris*, yet the distinction is so slight, that it seems the better plan to retain it amongst the *Aspleniums*, and to form a section *Neottopteris*.

No collection however limited should be without the *A. nidus*.

An illustration of a frond will only represent a very small portion of the beauty and majesty of this species; it is the bold yet elegant habit of the plant which forms its chief attraction.

Introduced into the Royal Gardens, Kew, in the year 1825, by Mr. Allan Cunningham.

An evergreen stove species.

It has an extended geographic range, being a native of New Holland, the Peninsula of India, the Islands of the Indian Seas, the Islands of the Pacific Ocean, Ladrone Island, the Island of Oæhu, (one of the Sandwich Islands,) and in the Mauritius.

The fronds, which are simple, thick, and rigid, are glabrous, three inches wide, and of nearly the same width throughout, except near the apex; coriaceous, having an entire margin. The form of the frond is elongate-lanceolate, with an acute apex. The fronds rise symmetrically from a crown, forming a circular, deep, vase-shaped hollow.

Length of frond from two to four feet; colour a brilliant shining rich green, having quite a polished appearance.

The stipes, which is covered with scales, is only about an inch long. The rachis, which is angular beneath, is ebeneous.

Fronds terminal, being attached to an erect rhizoma.

Sori linear, crowded, occupying the upper half of the frond, and being situated midway between the margin and the midrib.

This is the only *Neottopteris* cultivated in England; botanists have, however, discovered three or four others.

I am indebted to Mr. Masters, of the Exotic Nursery, Canterbury, and to Mr. Lamb, gardener to F. Wright, Esq., Osmaston Manor, for plants of this species; and to Mr. J. Henderson, of Wentworth House, to Mr. Norman, of Hull, and to Messrs. Rollisson, of Tooting, for fertile fronds.

It is in the Fern Catalogues of Messrs. R. Parker, of Halloway; J. Veitch, Jun., of Chelsea; R. Sim, of Foot's Cray; A. Henderson and Co., of Pine-apple Place; Masters, of Canterbury; E. G. Henderson, of St. John's Wood; Osborn and Sons, of Fulham; Booth and Son, of Hamburg; Rollisson, of Tooting; and Kennedy, of Covent Garden.

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



Portion of mature Frond, upper side.

ASPLENIUM BRACHYOPTERUM.

KUNZE. MOORE AND HOULSTON.

PLATE XV.—B. VOL. V.

Asplenium brachyopterum,
 “ *dissectum*,
 “ *brachyopteris*,

KUNZE.
 J. SMITH, (not LINK.)
 OF GARDENS.

Asplenium—Spleenwort.

Brachyopterum—Short Fern.

IN THE SECTION DAREA OF AUTHORS.

A RARE yet exceedingly interesting species, which every Fern cultivator should possess. Dwarf in habit, and delicate in form.

It has been cultivated in England since the year 1844, and was introduced into the Royal Gardens, Kew, in 1848.

A native of Sierra Leone.

An evergreen stove Fern.

Fronds glabrous, horizontal, linear-acuminate, bipinnate; the lower pinnæ rhomboidal, whilst the upper pinnæ are dimidiate. Cuneate at the base, with blunt linear segments, the inferior one being the largest.

Rachis and stipes channeled, terminal, adherent to an erect fasciculate rhizoma.

Length of frond from six to ten inches, pale green in colour, and rooting at the apex.

Sori oblong, solitary, having only one on each segment.

This rare and rather expensive species may be procured of Messrs. Rollisson, of Tooting; Kennedy, of Covent Garden; and A. Henderson, of Pine-apple Place.

As yet, I have not procured a living plant of *Asplenium brachyopterum*. My thanks are due to Mr. Norman, of Hull, for an excellent frond, from which the present illustration has been taken.



FRAXINUM M. COMPLANATUM M.



Portion of mature Frond, with young plants, upper side.

ASPLENIUM COMPRESSUM.

SWARTZ. J. SMITH. MOORE AND HOULSTON. KUNZE.

PLATE XVI. VOL. V.

Asplenium fœcundum, OF GARDENS.

Asplenium—Spleenwort. *Compressum*—Compressed.

IN THE SECTION EUASPLENIUM OF AUTHORS.

A THICK fleshy-looking Fern, very different in character and general appearance to any other species in the *Asplenium* family. A Fern with broad large pinnæ, perhaps more singular than beautiful, but well worth growing for the sake of diversity of foliage.

It appears to be easily cultivated, and requires only ordinary care to produce a good specimen.

The Fern grown in continental gardens under the name of *Asplenium fœcundum* is evidently this species.

Introduced into the Royal Gardens, Kew, in 1825, by Mr. Thomas Fraser.

An evergreen greenhouse Fern.

A native of the Island of St. Helena.

Fronde glabrous, ovate-lanceolate in form, coriaceous, pinnate, the pinnæ being broad and nearly all viviparous. Pinnæ oblong-acute, the superior base truncate and parallel with the rachis, subauriculate, the inferior base obliquely cuneate; bluntly serrate on the margin. Rachis winged.

Fronde terminal, adherent to an erect rhizoma, the crown of which is covered with dark brown scales. The midrib of the pinnule is raised on the upper side, flat beneath. Frequently the frond is defective in form.

Length of frond from fourteen to twenty-four inches; colour a shining bright green.

My thanks are due to Messrs. Parker, of Holloway, and Booth, of Hamburg, for plants; and to Messrs. Rollisson, of Tooting, and Sim, of Foot's Cray, for fronds.

It is in the Fern Catalogues of Messrs. E. G. Henderson, of St. John's Wood; A. Henderson, of Pine-apple Place; Rollisson, of Tooting; Parker, of Holloway; and Sim, of Foot's Cray.

The illustration is from a plant in my own collection.



ASPENIUM DIVERSIFOLIUM

XVII-VOL 5.



Portion of mature Frond, under side.

ASPENIUM DIVERSIFOLIUM.

ALLAN CUNNINGHAM.

MOORE AND HOULSTON. SMITH. ENDLICHER, (*not* BLUME.)

PLATE XVII. VOL. V.

Asplenium dimorphum,

KUNZE.

Asplenium—Spleenwort.

Diversifolium—Various-leaved.

So different are the barren and fertile fronds, that, unless seen growing upon the same plant, it is difficult to reconcile the two as belonging to the same Fern, the one has the pinnules very narrow, whilst the other is broad, and not unlike the leaf of the celery-plant. It is a handsome species, yet rare, and somewhat expensive.

An evergreen greenhouse Fern.

A native of Norfolk Island.

Introduced into the Royal Gardens, Kew, in the year 1831, by Mr. Allan Cunningham.

The fronds, which are glabrous, are in form somewhat ovate-lanceolate, tripinnate; the pinnae being oblong-acuminate, decurrent at the base. Pinnules linear-filiform, being of greatest

length near the midrib; the segments are acute. Fronds terminal, being attached to a creeping rhizoma, which is stout and covered with scales. The sterile fronds are bipinnate, with roundish oval pinnules, which are wedge-shaped at the base, and serrate on the margin.

This is a variable species, sometimes all the fronds will be fertile, at others all sterile, and at others intermediate, one portion of a frond being fertile and linear-filiform, whilst another portion will be sterile and trapezoidal in shape.

Length of frond eighteen inches.

Stipes brown, with a pale green belt along each lateral side.

Copious brown scales at the fasciculate rhizoma.

Sori single on each pinnule, very long, occupying three fourths of the length of the pinnule; situated on the inner edge.

For plants of this species I am indebted to Messrs. Rollisson, of Tooting; and to Veitch, Jun., of Chelsea; and for fronds to Mr. Norman, of Hull; Mr. Sim, of Foot's Cray; and to Mr. Henderson, of Wentworth.

It is in the Fern Catalogues of Messrs. A. Henderson, of Pine-apple Place; E. G. Henderson, of St. John's Wood; Rollisson, of Tooting; Parker, of Holloway; Veitch, of Exeter; Masters, of Canterbury; and Booth, of Hamburg.

The illustration is from a plant in my own collection.



Portion of barren Frond.



ASPLENIUM APPENDICULATUM.

XVIII—VOL. 5.



Portion of mature Frond, with young plant, under side.

ASPENIUM APPENDICULATUM.

PRESL. MOORE AND HOULSTON. KUNZE.

PLATE XVIII. VOL. V.

Darea appendiculata,
Cænopteris appendiculata,
Asplenium laxum,

WILDENOW. FEE.
 LABILLARDIERE.
 R. BROWN.

Asplenium—Spleenwort.

Appendiculatum—Appendaged.

IN THE SECTION DAREA OF AUTHORS.

OPINION seems divided as to whether the *Asplenium appendiculatum* should rank as a species, or be merely considered as a seedling variety of *A. bulbiferum*; however until more is known regarding it, we shall perhaps be acting wisely by regarding this interesting and easily-grown Fern as a distinct species.

Introduced into England in the year 1822.

An evergreen greenhouse species.

A native of Van Diemen's Land, New Holland, and Australia.

Form of frond lanceolate, subtripinnate; with oblong-aucate

pinnæ, the apex proliferous; somewhat ovate pinnules, with wedge-shaped base; acute segments.

Rachis and stipes scaly, winged, the scales very dark around the rhizoma; terminal, being attached to a short creeping rhizoma. The pinnæ are nearly equal in width except near the apex; viviparous.

Length of frond eighteen inches; colour a dull heavy green.

Sori bold, oblong in form, a single one on each pinnule; eventually becoming confluent and covering the whole under surface.

Mr. Henderson, of Wentworth, was kind enough to send me a plant of this species.

It may be procured at a moderate price of Messrs. Rollisson, of Tooting; Sim, of Foot's Cray; and Veitch, Jun., of Chelsea.

The illustration is from a plant in my own collection.



ASPENIUM FLACCIDUM.



Portion of mature Frond, with young plant, upper side.

ASPLENIUM FLACCIDUM.

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

PLATE XIX. VOL. V.

Cænopteris flaccida,
Darea flaccida,
Asplenium odontites,

THUNBERG. SCHKUHR. FEE.
WILLDENOW. FEE.
WILLDENOW?

Asplenium—Spleenwort.

Flaccidum—Feeble.

IN THE SECTION DAREA OF AUTHORS.

No collection should be without this charming Fern. It is elegant in form, and gains an increased beauty from the pendulous habit. A good specimen is a most attractive object, the fronds all hanging round the plant so as completely to hide the pot in which it is planted. A commonly cultivated Fern, and deservedly a universal favourite.

Introduced into the Royal Gardens, Kew, in the year 1843, by Mr. John Edgerley.

Native of New Zealand, and New Holland.

The form of the frond is elongate-lanceolate, bitripinnatifid, pinnæ narrow and long, habit pendulous, pinnæ remote from each other, decurrent at the base, viviparous, and above six inches in length; pinnules linear-elongate, wedge-shaped at the base, and largest next the midrib; segments linear-acute, distant.

The under side of the fronds scattered over with diminutive dark cordate scales. Fronds terminal, adherent to an erect fasciulate rhizoma.

Length of frond from two to three feet; colour deep green.

About the rhizoma many scales, similar to those in *Asplenium bulbiferum*. The pinnæ are of nearly equal length throughout, except near the apex, where they rapidly diminish in breadth. Stipes brownish beneath, green on the upper side. Fructification not very apparent; sori solitary, and situated near the inner edge of each pinnule.

My thanks are due to Mr. T. B. Charlton, of Chilwell Hall, Nottingham; Mr. Pass, gardener to Mr. Brocklehurst, of The Fence, near Macclesfield; Mr. Henderson, of Wentworth; and to Messrs. Veitch, of Exeter, for plants of this species; and to Mr. Ingram, of the Royal Gardens, Windsor; Mr. Norman, of Hull; and Messrs. Booth, of Hamburg, for fronds.

It may be procured from Messrs. Veitch, of Exeter; Parker, of Holloway; E. G. Henderson, of St. John's Wood; Booth, of Hamburg; Sim, of Foot's Cray; and Cooling, of Derby.

The illustration is from a plant in my own collection.



ASPLENIUM CICUTARIUM.



Portion of mature Frond, under side.

ASPLENIUM CICUTARIUM.

SWARTZ. HOOKER AND BAUER. MOORE AND HOULSTON.
KUNZE. LINK. PRESL.

PLATE XX. VOL. V.

<i>Asplenium cicutaria</i> ,	SWARTZ. PLUMIER. SMITH.
“ <i>dissectum</i> ,	HOOKER.
<i>Darea cicutaria</i> ,	WILLDENOW. FEE.
“ <i>membranacca</i> ,	POIRET.
<i>Cænopteris cicutaria</i> ,	THUNBERG. PETIVER. PLUMIER.
<i>Filix pinnulis-christatis</i> ,	PLUMIER.

Asplenium—Spleenwort.

Cicutarium—Cowbane.

IN THE SECTION DAREA OF AUTHORS.

A PRETTY delicate Fern, requiring considerable care in its management, and to be grown in a warm moist temperature to procure a handsome plant. It is worthy of remark in all Ferns, that if they do not seem to flourish it is much the safer plan to re-pot them.

Introduced into the Royal Gardens, Kew, in the year 1843, by Mr. W. Purdie.

An evergreen stove Fern.

Native of Jamaica.

Fronds glabrous, lanceolate, tripinnate, with lanceolate pinnæ,

and somewhat oval pinnules, wedge-shaped at the base, the lowest one being appressed to the midrib, segments linear-acute. Fronds terminal, attached to a fasciculate erect rhizoma.

Rachis and stipes winged throughout, and ebeneous; being deeply channeled above along their whole length.

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

Sori inconspicuous.

My thanks are due to Mr. Lamb, gardener to F. Wright, Esq., of Osmaston Manor; Messrs. E. G. Henderson, of St. John's Wood; and to Mr. Stratton, the Curator of the Cambridge Botanic Gardens, for plants of this species; and to Mr. R. J. Gray, of St. Thomas', Exeter; Mr. Norman, of Hull; Mr. Sim, of Foot's Cray; Messrs. Booth, of Hamburg; and Mr. Henderson, of Wentworth, for fronds.

It is in the Fern Catalogues of Mr. Robert Parker, of Holloway; Messrs. Osborn and Son, Fulham; Bass and Brown, of Sudbury, Suffolk; Booth and Son, of Hamburg; A. Henderson, of Pine-apple Place; E. G. Henderson, of St. John's Wood; Rollisson, of Tooting; Kennedy, of Covent Garden; Sim, of Foot's Cray; Veitch, of Exeter; and Cooling, of Derby.

The illustration is from a frond forwarded by Mr. Gray, of St. Thomas', Exeter.



CHERNOGONIA



CHERNOGONIA



Portion of mature Frond, under side.

ASPENIUM LÆTUM.

SWARTZ. MOORE AND HOULSTON. SCHKUHR.
SMITH, (*not of* SIEBER.)

PLATE XXI.—A. VOL. V.

Asplenium Schkuhrianum,

PRESL. FEE.

Asplenium—Spleenwort.

Lætum—Gay.

IN THE SECTION EUASPENIUM OF AUTHORS.

ALTHOUGH a somewhat common species in English greenhouses, still it is a Fern which should not be the less grown on that account, the intense green of the frond, and the bold dark fructification, place it amongst those species worthy of general cultivation. It is of easy growth, and makes a large and handsome specimen.

Native of the West Indies.

An evergreen stove or warm greenhouse Fern.

The form of the frond is clongate, glabrous, pinnate, the pinnæ being oblong-obtuse, the lower pair longest, hastate, upper auriculate; the inferior base is truncate, and the superior base rounded. Apex circular; margin inciso-serrate.

Rachis winged. Fronds terminal, being adherent to an erect rhizoma. Stipes sealy at the base.

Length of frond varying from eighteen inches to two feet.

My thanks are due to Mr. Henderson, of Wentworth; and to Mr. Stratton, the Curator of the Botanic Gardens, Cambridge, for plants of this species; and to Mr. Norman, of Hull, for fronds.

There is a Fern in English gardens bearing the name of *Asplenium elongatum*, which is only *A. lætum*. The true *A. elongatum* is rare in cultivation in Great Britain.

The following Nurserymen supply this plant:—Messrs. Rol-
lisson, of Tooting; Parker, of Holloway; and Cooling, of Derby.

The illustration is from a specimen in my own collection.



Portion of mature Frond, under side.

ASPLENIUM FONTANUM.

BERNHARDI. SMITH. HOOKER AND ARNOTT.
 DEAKIN. MOORE. SOWERBY. BROWN. SPRENGEL. LINK.
 SADLER. KUNZE. PRESL.

PLATE XXI.—B. VOL. V.

<i>Asplenium Halleri</i> ,	R. BROWN. SPRENGEL.
“ “	SADLER. DE CANDOLLE.
<i>Athyrium fontanum</i> ,	ROTH. SADLER. DE CANDOLLE.
“ “	PRESL. BABINGTON. GRAY. FEE.
“ <i>Halleri</i> ,	ROTH. PRESL. FEE.
<i>Aspidium fontanum</i> ,	SWARTZ. WILLDENOW.
“ “	SCHKUHR. SMITH.
“ <i>Halleri</i> ,	WILLDENOW.
<i>Polypodium fontanum</i> ,	LINNÆUS. SMITH. BOLTON.
“ <i>alpinum</i> ,	LAMARCK.

Asplenium—Spleenwort.

Fontanum—Fountain.

IN THE SECTION ADIANTUM-NIGRUM OF AUTHORS.

OPINION is divided as to whether *Asplenium fontanum* is to be regarded as a true British Fern, or whether it is not rather a species that has been accidentally introduced. That it

has been found growing wild there can be no doubt, we are therefore almost bound to accept it as a British plant. A very handsome dwarf Fern.

Exceedingly rare, having only been found in the following places:—Hamersham Church, Bucks.; Wybourn, Westmoreland; Wharnclyffe Wood, Yorkshire; Cavehill, near Belfast; Stonehaven, Kincardineshire; Tooting, Surrey; Isle of Purbeck; one situation in Wales; and recently at Petersfield, Hampshire.

Found in Spain, France, Italy, Switzerland, Germany, Hungary, Scandinavia, and Siberia.

Fronds of a narrow-lanceolate form, bipinnate, and broadest above the middle of the frond, tapering to the apex and base. Pinnæ oblong-ovate, spreading. Pinnules roundish, tapering to the base.

Margins of the frond deeply notched with from two to seven angular mucronate teeth. Caudex short, upright, tufted, and scaly. Stipes slender, dark brown near the base, higher up the frond green, one third of the length of the frond. Rachis green. A flexuous midvein, with alternate simple veins from it.

Sori small, two to four on each pinnule, covering the whole under side of the frond; confluent; indusium white.

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

A hardy, or half-hardy species, easily grown under pot culture, requiring a porous peaty soil, with plenty of drainage and a mixture of sand and loam.

I am indebted to Mr. Wraight, of Newlands, Kent; to Mr. Booker, of Matloek; and Mr. Sidebotham, of Manchester, for plants; and to Mr. R. J. Gray, of Exeter; and Mr. Norman, of Hull, for fronds.

It is in the Fern Catalogues of Mr. Sim, of Foot's Cray; Mr. Parker, of Holloway; Rollisson, of Tooting; Kennedy, of Covent Garden; Veitch, Jun., of Chelsea; Booth, of Hamburg; Osborn, of Fulham; Bass and Brown, of Sudbury, Suffolk; Masters, of Canterbury; A. Henderson, of Pine-apple Place; E. G. Henderson, of St. John's Wood; and J. Pearson, of Chilwell.

The illustration is from a plant forwarded by Mr. R. J. Gray, of St. Thomas', Exeter.



YESSERION TRICHOPHYLLA.

XXII 70



Variety *A. incisum*.—Portion of mature Frond.

ASPLENIUM TRICHOMANES.

LINNÆUS. BOLTON. SMITH. HOOKER. BABINGTON.
 HOOKER AND ARNOTT. NEWMAN.
 MACKAY. DEAKIN. MOORE. SOWERBY. SCHKUHR. PRESL.
 WILLDENOW. SPRENGEL.
 FEE. A. GRAY. HUDSON. FRANCIS.

PLATE XXII. VOL. V.

<i>Asplenium trichomanoides</i> ,	WEBER. MOHR. WITHERING.
“ “	LIGHTFOOT.
“ <i>melanocaulon</i> ,	WILLDENOW. SPRENGEL. PRESL.
“ “	FEE.
“ <i>anceps</i> ,	LOWE.
“ <i>saxatile</i> ,	SALISBURY. GRAY.
<i>Trichomanes crenata</i> ,	GILIBERT.

Asplenium—Spleenwort.

Trichomanes—Maiden-hair.

IN THE SECTION TRICHOMANES OF AUTHORS.

THE Common Maiden-hair Spleenwort is a lovely dwarf British Fern, and so generally is it distributed throughout Great Britain, that it would be needless to enumerate localities. Its usual habitats are ruins, rocks, old walls, churches, and sometimes on banks; extending from the sea-level to a height of two thousand feet. In Ireland it is sometimes of larger size, specimens having been found above a foot in length, having thirty pairs of pinnæ.

Its geographical distribution is great, extending throughout Europe—to Greece on the east side, and Spain on the west; Madeira, Cape of Good Hope, Persia, India, Siberia, Australia, Van Diemen's Land, United States, Mexico, Montreal, Venezuela, Sandwich Islands, England, Wales, Scotland, and Ireland.

A hardy British Fern.

The frond is narrow, linear, pinnate, with numerous pinnæ, which are irregularly ovate, erenate on the edges, truncate-euncate at the base, obtuse at the apex, terminal, adherent to a tufted rhizoma. The length of the stipes is about a third of that of the whole frond, glabrous, polished, and of a blackish purple colour; in young fronds the rachis is green, but it soon changes to a dark purple, the pinnæ when past maturity are apt to fall off, and to leave the rachis without pinnæ; this is more especially the case with the variety *incisa*, indeed it seems very difficult to prevent their falling off the dried specimens.

Veins forked from the midvein.

Sori a single row on each side the midrib of the pinnule, arranged obliquely, linear in form, and eventually becoming confluent. The seed-vessels are inclosed in a white membranous indusium.

Length of frond from three to fourteen inches; colour of frond deep green.

On Plate XXXIX. of the "Nature-printed Ferns" are figured a pretty series of varieties of *Asplenium trichomanes*, amongst which are the varieties *incisum*, *cristatum*, *depauperatum*, *ramosum*, and *multifidum*.

The caudex is short, tufted, and covered with brown lanceolate-shaped scales.

Mr. Moore enumerates the following varieties:—*Dichotomum*, Wollaston; *bifurcatum*, Wollaston; *ramosum*, Wollaston; *multifidum*, Moore; *cristatum*, Willdenow; *depauperatum*, Wollaston; *subæquale*, Moore; *lobatum*, Moore; and *incisum*, Moore. Of these *ramosum* is a handsome branched variety, found in Devonshire, Ireland, and Westmoreland; *multifidum*, found by Mr. Diek, at St. Mary's Isle, Kireudbright, is also an interesting variety; *subæquale* found near Monmouth by Mr. Enys; *lobatum*, in Devonshire by the Rev. J. M. Chanter; but the three most interesting are—*incisum* (of which a figure is given at the head of this chapter.)

This splendid Fern has the pinnæ deeply pinnatifid, with narrow inciso-serrate segments; it is exceedingly rare, being difficult to propagate, the fronds being all barren. Found near Burnley, in Lancashire, by Mr. Gibson; in Devonshire by the Rev. W. S. Hore; Clare, Ireland, by Dr. Kinahan; Settle, Yorkshire, by Mr. Clapham, of Searbro'; and in Borrowdale, Cumberland, by Miss Wright. There is a splendid plant of this Fern at Wentworth.

The variety *cristatum*, having a tessellated apex, was raised from seed by Mrs. Delves, of Tunbridge Wells, the seed having come in another Fern from the Glasgow Botanic Gardens; yet, as nothing was known of the Fern at Glasgow, its history is obscure. A figure of this is given at the end.

The variety *depauperatum* is exceedingly rare; it was found in Clare, Ireland, by Dr. Allehin, and at Rydal, Westmoreland, by Mr. Wollaston; the pinnæ are very narrow and depauperated: it is fertile. A good description of these varieties appears in Moore's "Nature-printed Ferns."

For fronds of *A. trichomanes-incisum* I am indebted to Mr. Wollaston, of Chiselhurst; Mr. Henderson, of Wentworth; and to Mr. Norman, of Hull. For plants and fronds of the variety *cristatum* to Mr. Sim, of Foot's Cray.

This species can be procured of any Nurseryman who cultivates Ferns, but is so common as to be procurable wild in almost every locality. The variety *cristatum* may be procured of Mr. Sim, of Foot's Cray; the variety *incisum* of Mr. Sim, of Foot's Cray, and Mr. Parker, of Holloway; the variety *depau-*

peratum of Mr. Sim, of Foot's Cray; and the variety *multifidum* of Mr. Parker, of Holloway.

The illustrations of the varieties are from fronds sent by Mr. Henderson, of Wentworth, and Mr. Sim, of Foot's Cray. The coloured illustration is from a plant in my own collection.



Variety A. *cristatum*.—Portion of mature Frond.



LEPIDIUM MARITIMUM.

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Portion of mature Frond, under side.

ASPLENIUM MARINUM.

LINNÆUS. BOLTON. SMITH. HOOKER. DEAKIN.
 HOOKER AND ARNOTT. MACKAY. BABINGTON. NEWMAN.
 MOORE. SOWERBY. SCHKUHR.
 WILLDENOW. SPRENGEL. PRESL. FEE. PRATT.
 FRANCIS. LIGHTFOOT. HUDSON. WITHERING.

PLATE XXIII. VOL. V.

Adiantum trapeziforme,
 “ *trapeziforme*,

HUDSON. WITHERING.
 BERKENHOUT.

Asplenium—Spleenwort.

Marinum—.....?

IN THE SECTION EUASPLENIUM OF AUTHORS.

THE Sea Spleenwort, as the *Asplenium marinum* is very properly called, is a handsome British Fern. It does not seem possible to grow it in an artificial Fernery with any degree of success; it will carry on a miserable existence for several years and then die; yet under pot culture there are but few Ferns which flourish better, nor which produce handsomer specimens than the *A. marinum*. It is a sea-coast Fern, never occurring very far inland; it is to be found, with the exception of the east

side of England, more or less along all our coasts, being abundant in the south-west of England, and in Wales, and only sparingly distributed elsewhere. There are two inland localities where it is found, namely, Newton, near Warrington, in Lancashire, and at Killarney.

Found in France, Spain, North America, England, Wales, Ireland, Channel Islands, Madeira, Teneriffe, Tangiers, Azores, Canaries, St. Helena, New Holland and New Brunswick, Orkney, Hebrides, and Guernsey.

Amongst the British localities the following may be enumerated:—Yorkshire, Durham, Berwickshire, Lothian, Forfarshire, Fife, Argyleshire, Shiant, (Holy Island,) Harris, Isla, Cantire, Arran, Ailsa, Wigton, Kireudbright, Cumberland, Westmoreland, Lancashire, Cheshire, Somerset, Devon, Cornwall, Hampshire, Wales, Dorset, and Sussex.

The form of the frond is linear-lanceolate, pinnate, pinnæ somewhat ovate-oblong, oblique, serrate on the edges, anterior base truncate and sub-auriculate, the posterior base wedge-shaped. Short petioles; the upper pinnæ decurrent, ending in a pinnatifid apex. The veins are branched from a stout mid-vein. Caudex erect, tufted, and densely covered with scales of a dark brown colour; stipes smooth, channeled on the upper side.

Length of frond varying from six to twelve inches, sometimes three feet long; colour deep green.

Sori linear, oblique, large and conspicuous, and eventually confluent; indusium at first white, then brownish.

An evergreen British Fern.

Mr. Moore mentions the following varieties:—

1st.—*Acutum*, (Moore,) more elongated, and tapering to a point at the apex.

2nd.—*Dichotomum*, (Wollaston,) apex forked.

3rd.—*Ramosum*, (Wollaston,) branched.

4th.—*Trapeziforme*, (Clapham,) pinnæ trapeziform. Found at Searbro'.

5th.—*Crenatum*, (Moore,) short pinnæ.

6th.—*Cuneatum*, (Moore,) pinnæ euneate. Ireland.

7th.—*Microdon*, (Moore,) submembranaceous in texture; pinnæ undulately lobed, with a denticulated margin; sori small. Found in Guernsey, by Miss Wilkinson. Mr. Moore thinks that it

may prove a new species, being very distinct in its characters from *A. marinum*.

8th.—*Assimile*, (Moore,) lobed, pinnæ elongated.

9th.—*Sub-bipinnatum*, (Moore,) deeply pinnatifid. Guernsey. A full description of each is given in Moore's "Nature-printed Ferns."

Growing on rocks near the sea-side.

I am indebted to Mr. R. T. Millet and Mr. J. Sidebotham for plants of this species; to Mr. Sim, of Foot's Cray, and to Mr. Clapham, of Scarbro', for plants of the variety *trapeziforme*; and for fronds to Mr. R. J. Gray, of St. Thomas', Exeter, and to Mr. Norman, of Hull.

It is in all the Nurserymen's Catalogues. The varieties of such as are in cultivation, may be procured of Mr. Sim, of Foot's Cray, and of Mr. Parker, of Holloway.

The illustration is from a plant in my own collection.



FERRENIUM ANGUSTIFOLIUM.

XXIV—7015



Portion of barren Frond.

ASPLENIUM ANGUSTIFOLIUM.

MICHAUX. SMITH. KUNZE.

PRESL. FEE. SCHUHR. MOORE AND HOULSTON.

PLATE XXIV. VOL. V.

Asplenium—Spleenwort.

Angustifolium—Narrow-leaved.

IN THE SECTION EUASPLENIUM OF AUTHORS.

AN elegant rare Fern, which appears to have been introduced into the Royal Gardens, Kew, in the year 1812, but which is still one of our rarest cultivated exotic species.

Unlike most of the other *Aspleniums*, the barren and fertile fronds are strikingly different, so much so as to give the plant a character distinct from other species of the genus *Asplenium*.

A hardy deciduous Fern, readily cultivated.

Native of North America.

The fronds, which are glabrous, are slender, lanceolate in form, pinnate, the pinnæ being linear-lanceolate and cordate at the base. Subauriculate, membranous, and being slightly crenulate on the margin. Fronds terminal. The fertile fronds are narrower and shorter.

Sori copious, a single oblique row on each side the midrib of each pinna, prominent, and eventually becoming confluent.

Length of frond from eighteen to twenty-four inches. Colour a delicate pale green.

For plants of this species I am indebted to Mr. Sim, of Foot's Cray; and for fronds to Mr. J. Henderson, of Wentworth.

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

The illustration is from a plant in my own collection.



ADIANTHUM-NIGRUM

XXV—VOL. 5.



Variety *A. acutum*.

ASPLENIUM ADIANTUM-NIGRUM.

LINNÆUS. BOLTON. SMITH.

DEAKIN. MACKAY. HOOKER AND ARNOTT. BABINGTON.

MOORE. NEWMAN. SOWERBY. SCHKUHR.

WILDENOW. SADLER. SPRENGEL. PRESL. FÉE.

BORY. KUNZE. LINK.

PLATE XXV. VOL. V.

<i>Asplenium nigrum</i> ,	BERNHARDI.
“ <i>trichomanoides</i> ,	LUMNITZER.
“ <i>lucidum</i> ,	SALISBURY.
“ <i>Onopteris</i> ,	LINNÆUS.
“ <i>cuneifolium</i> ,	VIVIANI.
“ <i>argutum</i> ,	KAULFUSS. SPRENGEL. PRESL.
“ <i>tabulare</i> ,	SCHRADER.
“ <i>capense</i> ,	LINNÆUS.
“ <i>obtusum</i> ,	KITAIBEL. SADLER. PRESL. FÉE.
“ <i>incisum</i> ,	OPIZ.
“ <i>multicaule</i> ,	SCHULTZ.

<i>Asplenium acutum</i> ,	BORY. WILLDENOW. NEWMAN.
“ “	SADLER. PRESL. FEE.
“ <i>virgillii</i> ,	BORY.
“ <i>productum</i> ,	LOWE.
<i>Tarachia adiantum-nigrum</i> ,	PRESL.
“ <i>obtusa</i> ,	PRESL.
“ <i>acuta</i> ,	PRESL.

Asplenium—Spleenwort.

Adiantum-nigrum—Black Adiantum.

IN THE SECTION ADIANTUM-NIGRUM OF MOORE; EUASPLENIUM OF FEE, AND RUTA-MURARLÆ OF SMITH.

THE Black Spleenwort, (*Asplenium adiantum-nigrum*,) is a readily distinguished species, and being so common, is well known by all Fern cultivators. It is a handsome Fern, which flourishes well in the open Fernery, but seldom successfully grown under pot culture.

It seems to have been introduced into the Royal Gardens, Kew, in the year 1793.

A hardy British species. Evergreen.

Found all over Europe, being a native of France, Italy, Spain, Portugal, Austria, Corsica, Cyprus, Sicily, Teneriffe, Switzerland, Madeira, Azores, Algiers, Abyssinia, Cape of Good Hope, St. Helena, Siberia, Russia, Arabia, Armenia, Affghanistan, Kashmir, Simla, Mussoorie, Jersey, Guernsey, Ireland, Scotland, Wales, etc.

Some authors have separated one or two of the varieties, and placed them as distinct species, and of these the most distinct is *acutum*, yet it is doubtful whether even this will prove to be really distinct.

The form of the frond is triangularly elongate, the pinnæ being obliquely triangular, and the pinnules ovate and toothed. Bitripinnate.

Stipes of the same length as the frond. Caudex short, thick, and tufted. Stipes ebeneous.

Sori linear elongate, eventually becoming confluent.

Length of frond from three to twenty-two inches; colour rich dark green.

Mr. Moore, in his "Nature-printed Ferns," describes nine varieties, viz.:—

1st.—*Obtusum*, Willdenow. Found in Ireland.

2nd.—*Oblongum*, Moore. From Guernsey.

3rd.—*Variegatum*, Wollaston.

4th.—*Multifidum*, Wollaston.

5th.—*Fissum*, Moore.

6th.—*Intermedium*, Moore.

7th.—*Oxyphyllum*, Moore.

8th.—*Decompositum*, Moore.

9th.—*Acutum*, Bory. Ireland, Madeira, etc.

Grows on rocks, and is very generally distributed throughout Great Britain. Nowhere have I seen it more luxuriant than on the sandstone rocks in the Nottingham Park.

It can be procured from any Nurseryman, if not to be obtained in the immediate neighbourhood of the cultivator.

My thanks are due to Mr. Sim, of Foot's Cray, for plants of the varieties *acutum* and *obtusum*.

The illustration is from a plant in my own collection.



ASPENIUM LANCIOLATUM.



Portion of mature Frond, upper side.

ASPENIUM LANCEOLATUM.

HUDSON. SMITH. DEAKIN. HOOKER AND ARNOTT.
 BABINGTON. NEWMAN. MOORE. SOWERBY. WILLDENOW.
 SPRENGEL. PRESL. FEE. KUNZE. LINK.

PLATE XXVI. VOL. V.

<i>Asplenium Billotii,</i>	SCHULTZ.
“ <i>cuneatum,</i>	SCHULTZ.
“ <i>rotundatum,</i>	KAULFUSS. PRESL.
<i>Tarachia lanceolata,</i>	PRESL.
<i>Polypodium adiantoides,</i>	POIRET.

Asplenium—Spleenwort.

Lanceolatum—Lanceolate.

IN THE SECTION ADIANTUM-NIGRUM OF MOORE, EUASPENIUM OF
 FEE, AND RUTA-MURARLÆ OF SMITH.

A LOCAL, indigenous, interesting Fern, having a somewhat similar appearance to the Black Spleenwort, yet being strikingly distinct from that species. It is easily cultivated in a flower-pot, making a handsome specimen. Care should be taken to use abundance of drainage, as it succeeds best when placed in a saucer of water, instead of watering the surface soil. Over watering both this species and *Asplenium adiantum-nigrum*, will prove certain destruction to both plants.

An evergreen half-hardy species.

A native of Great Britain, being found mostly by the sea-side. Habitat rocks and old walls. A local species, native of Cornwall, Devonshire, Somersetshire, Gloucestershire, Wales, Cork, and the Islands of Jersey, Guernsey, and Sark.

Abroad, it is found in Spain, Portugal, Switzerland, Fontainebleau, Brittany, Tangiers, Madeira, Azores, Hungary, Bohemia, and South America.

Mr. Moore, in the "Nature-printed Ferns," describes four varieties, viz:—

Multifidum, Wollaston; *Proliferum*, Wollaston; *Crispatum*, Moore; *Laciniatum*, Wollaston.

Fronds bipinnate; pinnæ broadest at the base, narrowing to a point at the apex. Form of frond lanceolate, glabrous, pinnales obovate, and being deeply and sharply-toothed. Stipes usually one-third of the length of the frond, sealy at the base; terminal, adherent to a tufted rhizoma. Caudex short and thick; fibres stout, branched, and tomentose.

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

Fructification covering the whole under surface; sori oblong, becoming confluent in irregular masses.

For plants of *A. lanceolatum* I am indebted to Mrs. Delves, of Tunbridge Wells; Mr. R. T. Millett, of Penzance; and to Mr. James, of Vauvert, Guernsey; and for fronds to Mr. Gray, of St. Thomas', Exeter.

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

The illustration is from a plant in my own collection.



ASPENIUM RUTA-MURARIA.

XXVII—VOL. 2.



Dwarf Plant.

ASPLENIUM RUTA-MURARIA.

LINNÆUS. BOLTON. SMITH. HOOKER AND ARNOTT. DEAKIN.
 BABINGTON. NEWMAN. MOORE. SOWERBY.
 WILLDENOW. SCHIKUHR. PRESL. FEE. GRAY. KUNZE. BLACK.

PLATE XXVII. VOL. V.

<i>Asplenium murorum,</i>	LAMARCK.
“ <i>murale,</i>	BERNHARDI. SALISBURY. GRAY. STOKES.
<i>Scolopendrium ruta-muraria,</i>	ROTH,
<i>Amesium</i> “ “	NEWMAN.
<i>Tarachia</i> “ “	PRESL.
<i>Adiantum pygmaeum,</i>	LINNÆUS.

Asplenium—Spleenwort.

Ruta-muraria—Wall-rue.

IN THE SECTION ACROPTERIS OF MOORE, EUASPLENIUM OF FEE,
 AND RUTA-MURARIAE OF SMITH.

THE 'wall-rue' Spleenwort, as this Fern is very aptly called, is a common and widely-spread indigenous species, clothing old walls with its small leaden-green fronds. Although so easily to be procured, it is by no means an easy Fern to keep under pot culture.

An evergreen hardy Fern.

Native of England, and found throughout the whole of Europe. In India, Russia in Asia, Siberia, Algeria, and North America.

Fronds glabrous, triangular in form, bipinnate, pinnules obovate-cuneate, bluntly toothed on the margin. Fronds terminal, adherent to a tufted rhizoma.

Sori elongated, eventually becoming confluent, and covering the whole under surface. Indusium fringed at the margin.

Length of frond from two to five inches; colour a dull leaden green.

Mr. Moore describes seven varieties in his "Nature-printed Ferns:"—

1st.—*Multifidum*, Wollaston.

2nd.—*Cristatum*, Wollaston.

3rd.—*Proliferum*, Wollaston.

4th.—*Dissectum*, Wollaston.

5th.—*Cuneatum*, Moore.

6th.—*Pinnatum*, Moore.

7th.—*Unilaterale*, Moore.

It is in all the Nurserymen's Catalogues.

The illustration is from a plant in my own collection.



ASPENIUM VIRIDE.



Variety *A. multifidum*, under side.

ASPLENIUM VIRIDE.

HUDSON. BOLTON. SMITH. HOOKER AND ARNOTT.
BABINGTON. MACKAY. DEAKIN. NEWMAN. MOORE. FEE.
SOWERBY. SCHKUHR. KUNZE. PRESL.
WILLDENOW. SPRENGEL. SWARTZ. MORISON. LINK.

PLATE XXVIII. VOL. V.

Asplenium trichomanes ramosum,

LINNÆUS. BOLTON.

Asplenium—Spleenwort.

Viride—Green.

IN THE SECTION TRICHOMANES OF MOORE, EUASPLENIUM OF FEE,
AND TRICHOMANEÆ OF SMITH.

THIS lovely dwarf Fern was introduced into the Royal Gardens, Kew, in the year 1793. It is a precarious Fern, when under pot culture, but nevertheless, one deserving of universal cultivation.

An evergreen half-hardy species.

Indigenous to England, Scotland, Wales, and Ireland, yet rare in the latter country. A native of the whole of North and Central Europe, Shetland, North West America, India, and Siberia.

Fronds glabrous, linear-lanceolate in shape, pinnate, the pinnae being roundish ovate and generally alternate, cuneate at the base, and obtusely crenate on the margin. Rachis and stipes green; caudex tufted.

Length of frond from two to ten inches; colour light green.

Mr. Moore describes three varieties:—

1st.—*Multifidum*, Wollaston.

2nd.—*Bipinnatum*, Clowes.

3rd.—*Acutum*, Moore.

My thanks are due to Mr. Sim, of Foot's Cray, and to Mr. Wraight, of Newlands, for plants of this species.

It is in the Fern Catalogues of Messrs. Veitch, of Chelsea; Rollisson, of Tooting; Sim, of Foot's Cray; Osborn, of Fulham; Kennedy, of Covent Garden; Parker, of Holloway; A. Henderson, of Pine-apple Place; and E. G. Henderson, of St. John's Wood.

The illustration is from a plant in my own collection.



ASPENIUM FILIX-FOEMINA.



ASPLENIUM FILIX-FEMINA, V. MULTIFIDUM.



Portion of mature Frond, under side.

ASPLENIUM FILIX-FŒMINA.

BERNHARDI. SPRENGEL.

HOOKEK AND ARNOTT. MACKAY. DEAKIN. GRAY.

SCHRADER. SMITH. MOORE. LINK.

PLATE XXIX. VOL. V.

PLATE XXX. VOL. V. (VARIETY MULTIFIDUM.)

<i>Athyrium filix-fœmina,</i>	ROTH. PRESL. BABINGTON. SOWERBY.
“ “	NEWMAN. MOORE. FEE. KUNZE.
“ <i>molle,</i>	ROTH. NEWMAN.
“ <i>incisum,</i>	NEWMAN.
“ <i>ovatum,</i>	ROTH.
“ <i>laxum,</i>	SCHUMACHER.
“ <i>latum,</i>	GRAY.
“ <i>trifidum,</i>	ROTH.
“ <i>cyclosorum,</i>	RUPRECHT.
“ <i>depauperatum,</i>	SCHUMACHER.
<i>Aspidium filix-fœmina,</i>	SWARTZ. SCHRADER. SCHUHR.
“ “	WILDENOW. HOUTTUYN. SMITH.
“ “	BLACK. MORISON. PLUKENET.
“ “	TABERNA-MONT.

<i>Nephrodium filix-femina</i> ,	STREMPPEL.
<i>Polypodium filix-femina</i> ,	LINNÆUS. BOLTON. HOFFMANN.
“ <i>dentatum</i> ,	HOFFMANN.
“ <i>incisum</i> ,	HOFFMANN.
“ <i>oblongo-dentatum</i> ,	HOFFMANN.
“ <i>latum</i> ,	SALISBURY.
“ <i>molle</i> ,	SCHREBER. HOFFMANN.
“ <i>ovato-crenatum</i> ,	HOFFMANN.
“ <i>trifidum</i> ,	HOFFMANN.
“ <i>bifidum</i> ,	HOFFMANN.

Aspidium—The Shield Fern.

Filix-femina—Female Fern.

IN THE SECTION ATHYRIUM OF AUTHORS.

FEW Ferns are more generally admired than the “Lady Fern,” and perhaps no Fern is more varied in its seedling forms, indeed this dissimilarity of form has caused many species to be enumerated by different authors. It is elegant, delicate-looking, and easily cultivated without trouble, all of which are recommendations that cannot fail to procure for it general approbation.

In a species where there happens to be so much diversity in appearance, it becomes a difficult task to describe it accurately. The fronds, which are lanceolate in form, are bipinnate, occasionally tripinnate. Pinnules a lengthened ovate, sessile, toothed, having an upright or decumbent tufted caudex. *Fibres blackish and strong.

Stipes terminal, and covered with scales. Pinnæ numerous.

Length of frond from eighteen inches to three feet. Colour vivid green.

Sori numerous, eventually becoming confluent, and spreading over the whole of the under side of the frond.. Indusium membranaceous.

A hardy deciduous British Fern. Common throughout Great Britain, growing both in moist and dry places, yet flourishing best in a shady moist situation. It is found throughout Europe, Russian Asia, Algeria, the islands of Madeira, Canary, and Teneriffe; and North America.

Mr. Moore, in the "Nature-printed Ferns," enumerates the following varieties:—

- 1st.—*Confluens*, Moore. Found in Scotland by Mr. A. Tait.
- 2nd.—*Latifolium*, Babington.
- 3rd.—*Marinum*, Moore, (*Aberdeenense* of Mackay.) Discovered near Aberdeen, by Dr. Dickie.
- 4th.—*Stenodon*, Moore.
- 5th.—*Acuminatum*, Moore. Found by Mr. W. Pamplin on Snowdon, and recently by myself near Clitheroe, Lancashire.
- 6th.—*Excurrens*, Moore. Found at Tunbridge Wells and near Ilfracombe.
- 7th.—*Pruinosum*, Moore. Scotland and the Isle of Man.
- 8th.—*Odontomanes*, Moore. Wales, Scotland, and Isle of Man.
- 9th.—*Molle*, Roth.
- 10th.—*Trifidum*, Roth.
- 11th.—*Ovatum*, Roth.
- 12th.—*Obtusum*, Moore. Found by Dr. Allchin.
- 13th.—*Frondosum*, Moore. Wales and Lancashire.
- 14th.—*Davallioides*, Wollaston. Found by Dr. Kinahan, near Dublin.
- 15th.—*Incisum*, Hoffmann. Ireland.
- 16th.—*Laxum*, Schumacher.
- 17th.—*Rhæticum*, Linnæus.
- 18th.—*Dissectum*, Wollaston.
- 19th.—*Præmorsum*, Moore.
- 20th.—*Irregularare*, Moore.
- 21st.—*Laciniatum*, Moore.
- 22nd.—*Abruptum*, Moore.
- 23rd.—*Interruptum*, Wollaston.
- 24th.—*Ramosum*, Wollaston.
- 25th.—*Erosum*, Wollaston.
- 26th.—*Polyclados*, Moore.
- 27th.—*Polydactylon*, Moore.
- 28th.—*Furcatum*, Moore.
- 29th.—*Multifidum*, Moore. Ireland, (*Cristatum*, Wollaston.)
- 30th.—*Depauperatum*, Wollaston, (*Ramosum*, Moore.)
- 31st.—*Crispum*, Moore. (*Smithii* of Gardens.)

Mr. Moore has given figures of the following varieties:—*incisum*, *rhæticum*, *latifolium*, *marinum*, *ovatum*, *multifidum*, *crispum*, *depauperatum*, and *dissectum*. Our space will not

allow more than the enumeration of varieties; for a full description the reader is referred to the "Nature-printed Ferns."

Several of the varieties are so distinct in appearance as to make it very desirable that they should be cultivated; indeed the branched variety *multifidum* gives place to none in its delicacy and beauty; the singular distorted and naked appearance of the variety *depauperatum*, and the parsley-look of the variety *crispum*, make these three desirable additions to our Fernery; whilst the feathery character of *ovatum* renders it an object to be greatly admired; indeed no less interesting are the varieties *marinum*, *latifolium*, *rhæticum*, *incisum*, and several others.

The variety *multifidum* is as large and graceful as the typical form of *Asplenium filix-fæmina*, and having all the points of the division of the fronds multifid with tassel-like ends.

The variety *depauperatum* is very succulent, and is curious from the circumstance that the narrow widely-spreading fronds, which are usually about twelve inches in length, terminate in fan-shaped, branched, tassel-like ends. It is known on the continent as *Asplenium filix-fæmina monstrosum*.

The variety *semi-depauperatum* is similar on the one side of the frond to *multifidum*, whilst on the other the divisions are small, and often absent altogether.

The variety *crispum* is densely tasselled, and closely resembles parsley.

A. filix-fæmina may be procured from any Nurseryman. The variety *crispum* from Veitch, of Chelsea; Rollisson, of Tooting; Sim, of Foot's Cray; Masters, of Canterbury; Osborn, of Fulham; Parker, of Holloway; A. Henderson, of Pine-apple Place; Kennedy, of Covent Garden; and Pearson, of Chilwell. The variety *multifidum* from Rollisson, Sim, Parker, and Kennedy; and the variety *depauperatum* from Sim and Parker. Mr. Sim also possesses the varieties *purpuræum*, *erosum*, *marinum*, *præmorsum*, and *semi-depauperatum*; Mr. Parker, *marinum* and *purpuræum*; Mr. Kennedy, *incisum*, *trifidum*, and *molle*; and A. Henderson, *molle*.

My thanks are due to Dr. Mackay for plants of the variety *marinum*; to Mr. Sim and Mr. Pearson for others of the variety *crispum*; to Mr. Clapham, of Scarborough, for *depauperatum* and *incisum*; to Mr. Sim, and to Mr. Stratton, of the Cambridge Botanic Gardens, for *latifolium*; to Mr. Sim for

purpuræum; to Messrs. Rollisson for *rhæticum*; to Mrs. Delves, of Tunbridge Wells, Mr. James, of Vauvert, Guernsey, and Mr. Sim, for *multifidum*. The variety *molle*, I found growing wild at Chaigeley Manor, near Clitheroe, Lancashire.

The illustrations are from fronds in my own collection, and others forwarded by Mr. Sim, of Foot's Cray; and from Mr. Henderson, of Wentworth.



Variety *Depauperatum*.



A. PLENIUM FULCHERRIMUM.

A. FUMIFOLIUM.



Portion of mature Frond, under side.

ASPLENIUM PULCHELLUM.

RADDI. PRESL. MOORE AND HOULSTON.

PLATE XXXI.—A. VOL. V.

Asplenium otites,

LINK? KUNZE? SMITH?

Asplenium—Spleenwort.

Pulchellum—Neat.

IN THE SECTION EUASPENIUM OF AUTHORS.

THERE is a crumpled appearance about the pinnæ of this Fern, very different from most other species; the green of the frond is also dull in hue, and the habit of the plant erect.

Apparently a species requiring more than ordinary care in cultivation.

It appears to be best known amongst the Nurserymen and Amateurs under the name of *Asplenium otites*.

An evergreen stove Fern.

Native of the West Indies, Brazil, etc.

It was first sent to the Royal Gardens, Kew, in the year 1841, having been received from the Royal Botanic Gardens of Berlin.

The fronds, which are glabrous, are slender, linear-lanceolate, pinnate, the pinnæ petiolate, oblong-obtuse, sub-falcate, circular at the apex, superior base being auriculate, whilst the inferior base is truncate-dimidiata, inciso-serrate on the margin.

Fronds terminal, adherent to a fasciculate rhizoma.

Length of frond ten inches; colour dull green.

Sori oblong-linear, of a bright reddish brown colour, eventually bold and confluent. Indusium greenish white. A single row of sori on each side the midrib of each pinna, those on the upper side being oblique, whilst those on the lower side are parallel with the midrib, usually six on the upper, and three or four on the lower side.

There are about twenty pairs of pinnæ. The lower half of the frond equal in width, gradually tapering to a point for the upper half.

My thanks are due to Messrs. Booth, of Hamburg, and Messrs. A. Henderson, of Pine-apple Place Nursery, for plants; and to Mr. J. Henderson, of Wentworth; Dr. Hooker; Mr. Norman, of Hull; and Mr. Downes, of Ilfracombe, for fronds.

It can be procured of Messrs. A. Henderson, of Pine-apple Place; R. Sim, of Foot's Cray; and Booth and Son, of Hamburg.

The illustration is from a frond sent by Dr. Hooker.



Portion of mature Frond, under side.

ASPLENIUM PUMILUM.

SWARTZ. KUNZE. LINK. WILLDENOW. SMITH.
MOORE AND HOULSTON.

PLATE XXXI.—B. VOL. V.

Asplenium anthriscifolium,
Hemionitis pumila,

JACQUIN.
PLUMIER.

Asplenium—Spleenwort.

Pumilum—Dwarf.

IN THE SECTION EUASPLENIUM OF AUTHORS.

So different is the *Asplenium pumilum* from the general characters of the Spleenworts, that it has been placed by Plumier amongst the genus *Hemionitis*. Its dwarf habit, fragile frond, and delicate fructification, make it a species very distinct from all others.

An evergreen stove Fern.

Native of the American meridian, West Indies, Jamaica, Martinica, Caraccas, Cumana, Antil, Philippine Islands, etc.

Introduced into England in the year 1823, yet seldom to be met with except in large collections.

The form of the frond is triangular, membranous, delicate, texture semi-transparent, hairy, ternate-pinnatifid, the lateral

pinnæ being sub-tripartite, acute, with rounded crenate lobes.

Stipes and rachis thin, and pale green in colour.

Fronds terminal, attached to a somewhat creeping rhizoma.

Length of frond two or three inches; colour pale green.

Sori small, indusium covered with hairs, eventually confluent and reddish.

A very delicate little species.

I have not been able to procure a plant hitherto; for fronds I am indebted to Dr. Hooker.

It is only to be found in the Catalogues of Mr. R. Sim, of Foot's Cray, and Mr. Parker, of the Paradise Nursery, Holloway.

The illustration is from a frond forwarded by Dr. Hooker.



ASPENIUM AURITUM.



Portion of mature Frond, under side.

ASPLENIUM AURITUM.

SWARTZ. PRESL. SCHKUHR. MOORE AND HOULSTON.

PLATE XXXII. VOL. V.

Asplenium—Spleenwort.

Auratum—Eared.

IN THE SECTION ADIANTUM-NIGRUM OF AUTHORS.

THIS beautiful species is but rarely to be met with in cultivation in this country, indeed it seems to be imperfectly known, for I have received several plants bearing its name, which have been another species, (the *Asplenium pulchellum*, of Raddi.) Two more distinct species could not possibly be found than the *A. auritum* of Swartz and the *A. pulchellum* of Raddi.

Native of South America, the West Indies, and Jamaica.

An evergreen stove Fern.

Introduced into England in the year 1829.

Fronds glabrous, triangularly-elongate, pinnate, the pinnæ being bipartite, inferior segments wedge-shaped; margin serrate, ultimate one pinnatifid, wedge-shaped at the base, and incise-serrate.

Rachis winged.

Fronds terminal, being attached to a somewhat tufted rhizoma.

Length of frond twelve inches; colour pale green.

Pinnæ alternate, about twenty-seven pairs.

A single row of sori on each side the midrib, except close

to the base, where the ear-like division is also supplied with sori. The frond tapering to the apex. Stem blackish, except for a third of its length near the apex, where it is green; near the base of the frond there are about thirteen pairs of sori, gradually diminishing in number as the apex of the frond is approached, and terminating in a single one near the apex.

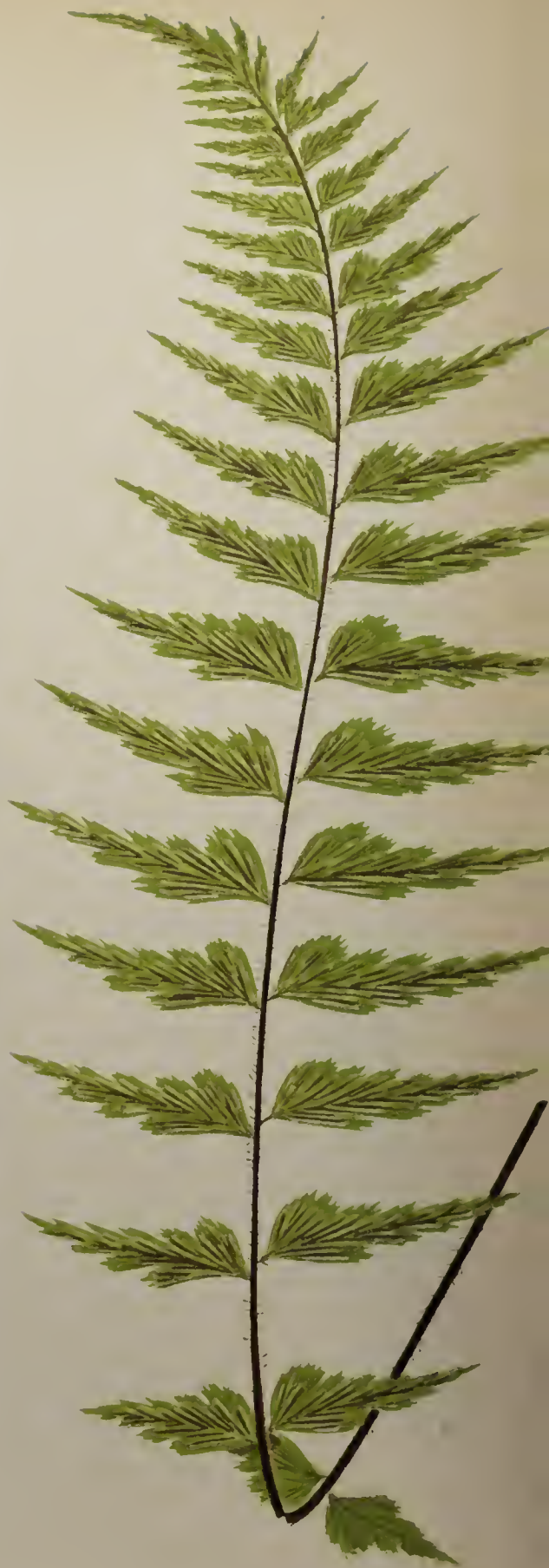
Several plants have been sent to me bearing this name, but none of them the true *A. auritum*; it seems therefore doubtful whether Swartz's plant can be procured from our Nurserymen.

For fronds I am indebted to Dr. Hooker, of the Royal Gardens, Kew.

The illustration is from a frond sent by Dr. Hooker.



ASPENIUM ZAMIAEFOLIUM



A. COLERIGONUM



Portion of mature Frond, upper side.

ASPLENIUM ZAMIÆFOLIUM.

WILLDENOW. MOORE AND HOULSTON. PRESL? HUMBOLDT?

PLATE XXXIII.—A. VOL. V.

Asplenium—Spleenwort.

Zamiaefolium—Zamia-leaved.

IN THE SECTION ACROPTERIS OF AUTHORS.

THE present Spleenwort is in the same group with *Asplenium præmorsum* and *A. canariense*; it is singular in form, and worthy of general cultivation.

A rare species.

Native of Mexico, New Holland, Caraccas, and Hispaniola.

An evergreen stove Fern.

Introduced into England in the year 1820.

The form of the frond rather ovate, glabrous, pinnate, the pinnæ being large, and of an oblong-dimidiated shape, coriaceous, acute, wedge-shaped at the base, and being inciso-serrate along the margin; segments acute.

Length of frond from twelve to fifteen inches; colour dull green.

Stipes covered with scales, the stem being black to where the pinnæ commence, above which it is green. Terminal, and attached to a somewhat erect rhizoma.

Sori of great length, being nearly that of the pinnæ, eventually becoming confluent.

Only to be met with in good collections, although introduced into this country thirty-six years ago.

I have not yet procured a plant of *A. zamiæfolium*.

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

For fronds I am indebted to Dr. Hooker.

The illustration is from a frond forwarded by Dr. Hooker.



Portion of mature Frond, upper side.

ASPENIUM POLYODON.

FORSTER. SMITH. PRESL. MOORE AND HOULSTON.

PLATE XXXIII.—B. VOL. V.

Asplenium—Spleenwort.

Polyodon—Many-toothed.

IN THE SECTION ACROPTERIS OF AUTHORS.

ANOTHER species in the *Præmorsum* group; the vivid green of the frond, its delicacy, and the great length of the sori, are sufficient recommendations to render this Fern an attractive plant.

An evergreen warm greenhouse Fern.

A native of New Zealand.

This plant was first introduced into the Royal Gardens, Kew, in the year 1843, having been brought there by Mr. John Edgerley.

Fronde glabrous, lanceolate in shape, pinnate, the pinnæ being trapezoid-elongate-acuminate, broadly wedge-shaped at the base, deeply serrate on the margin, pinnæ petiolate, acuminate and hairy.

Stipes and rachis scaly.

Fronde terminal, being adherent to a creeping rhizoma.

Length of frond two feet, colour deep vivid green.

Sori lengthened, oblique, commencing at mid-vein of each



ASPLENIUM LAMIAEFOLIUM



A. POLYSTICHUM



Portion of mature Frond, upper side.

ASPENIUM ZAMIÆFOLIUM.

WILLDENOW. MOORE AND HOULSTON. PRESL? HUMBOLDT?

PLATE XXXIII.—A. VOL. V.

Asplenium—Spleenwort.

Zamiaefolium—*Zamia*-leaved.

IN THE SECTION ACROPTERIS OF AUTHORS.

THE present Spleenwort is in the same group with *Asplenium præmorsum* and *A. canariense*; it is singular in form, and worthy of general cultivation.

A rare species.

Native of Mexico, New Holland, Caraccas, and Hispaniola.

An evergreen stove Fern.

Introduced into England in the year 1820.

The form of the frond rather ovate, glabrous, pinnate, the pinnae being large, and of an oblong-dimidiolate shape, coriaceous, acute, wedge-shaped at the base, and being inciso-serrate along the margin; segments acute.

pinna, and extending almost to the edge, oblique, eventually becoming more or less confluent.

My thanks are due to Mr. Pass, gardener to Mr. Brocklehurst, of The Fence, near Macclesfield, for a plant of this species, and to Dr. Hooker, for fronds.

It is in the Fern Catalogues of Messrs. Robert Parker, of Holloway, and Kennedy, of Covent Garden.

The illustration is from a frond sent by Dr. Hooker.



FROND OF *ADiantum*

PLATE XXXIV



Portion of mature Frond, under side.

ASPLENIUM RACHIRHIZON.

RADDI. KUNZE. MOORE AND HOULSTON, *not of* LINK.

PLATE XXXIV. VOL. V.

Asplenium rhizophorum,

ENGLISH GARDENS,
(*not of* SWARTZ, *or* SCHRAD.)

Asplenium—Spleenwort.

Rachirhizon—.....?

IN THE SECTION DAREA OF AUTHORS.

A VERY delicate-looking and extremely handsome species, rare in cultivation, yet deserving a place in every collection.

An evergreen stove Fern.

Native of Brazil, West Indies, Venezuela, etc.

The *Asplenium rachirhizon* of Link is a different species, it is the *A. rhizophorum* of Swartz, Schrad, and Schkuhr; (the *Diplazium radicans* of Presl, and the *A. radicans* of Swartz;) the latter is the name generally adopted. It has been described on page 37, and figured on Plate XII, (see letter B.)

This graceful Fern has glabrous fronds, of a somewhat ovate-elongate form, void of pinnæ on the apex, and rooting

at the extreme point; bitripinnate, the pinnae being lanceolate and frequently proliferous at the apex. Pinnules somewhat ovate-obtuse, segments obovate-cuneate, bluntly crenate at the margin.

Rachis and stipes ebeneous, polished, slightly winged.

Fronds terminal, being adherent to an erect fasciculate rhizoma.

Length of frond from eighteen inches to two feet, colour deep green.

I am not aware of its being in any of the Nurserymen's Catalogues.

For a plant I am indebted to Mr. Downes, of Hillsbro', Ilfracombe; and for fronds to Dr. Hooker, of the Royal Gardens, Kew, and to Mr. Downes, of Ilfracombe.

The illustration is from a frond forwarded by Dr. Hooker.



ASPENIUM REFRACTUM.

A. ATTENUATUM



Portion of young Frond.

ASPLENIUM REFRACTUM.

MOORE.

PLATE XXXV.—A. VOL. V.

Asplenium fontanum, var. *proliferum*,

WOLLASTON.

Asplenium—Splénwort.

Refractum—Refracted.

IN THE SECTION ADIANTUM-NIGRUM OF AUTHORS.

IT is with hesitation that I have figured the present Fern as a distinct species; in general appearance it seems to approach so near to the *Asplenium fontanum*, yet in some respects it is so different, that I have ventured upon figuring and describing it as a new species, and more especially as Mr. Moore, in the "Nature-printed Ferns," has expressed an opinion that it may possibly be a new species. Whether species or merely variety, it is well deserving of a place in these pages.

An evergreen hardy, or nearly hardy, species, found in Scotland some six or seven years ago by a gardener, who gathered it for *A. viride*; the discoverer died soon after, and nothing appears to be known as to the particular locality in Scotland. From Mr. Moore's description, in the "Nature-printed Ferns," it appears to have come into the possession of Mr. Williams, gardener to C. B. Warner, Esq., of Hoddesdon. Mr. Williams has given the stock of this species to Mr. Robert Parker, Nurseryman, Holloway, from whom it can be now procured, and, I believe, from no other Nurseryman.

The fronds are longer and narrower in proportion than *A. fontanum*; the outline also differs, being equal and almost linear, not broader upwards, as in *A. fontanum*. In *A. fontanum* the lower pinnæ are more distant. In *A. refractum* the pinnæ are refracted in a remarkable degree, and are less divided; the habit of growth is spreading, and the fronds are proliferous, the small bulbils being mostly formed at the junction of the pinnæ with the rachis.

Fronds linear sub-bipinnate, the pinnæ being short, oblong-obtuse, and refracted, at the base pinnate, above pinnatifid; lower pinnules somewhat circular, with a few large angular mucronate teeth, the upper ones two-four toothed.

Rachis chesnut-coloured, marginate above.

Sori short, oblong, oblique, in a line on each side near the costa of the pinnæ.

Length of frond seven or eight inches; colour dark green.

The fronds are bulb-bearing.

My thanks are due to Mr. Parker, of Holloway, for a plant and fronds of this species.

It is in the collection of Mr. R. Parker, of Holloway, from whom only it can be procured.

The illustration is from a plant in my own collection.



Portion of mature Frond, under side.

ASPENIUM ATTENUATUM.

BROWN. HOOKER AND GREVILLE.

PLATE XXXV.—B. VOL. V.

Asplenium—Spleenwort.

Attenuatum—Attenuated.

A SINGULAR, sombre-looking, dwarf, rigid Fern, whose dark green fronds, fleshy texture, and narrow, ragged outline contrast



ASPLENIUM REFRACTUM.



A. ATTENUATUM.



Portion of young Frond.

ASPENIUM REFRACTUM.

MOORE.

PLATE XXXV.—A. VOL. V.

Asplenium fontanum, var. *proliferum*,

WOLLASTON.

Asplenium—Splenewort.

Refractum—Refracted.

IN THE SECTION ADIANTUM-NIGRUM OF AUTHORS.

IT is with hesitation that I have figured the present Fern as a distinct species; in general appearance it seems to approach so near to the *Asplenium fontanum*, yet in some respects it is so different, that I have ventured upon figuring and describing it as a new species, and more especially as Mr. Moore, in the "Nature-printed Ferns," has expressed an opinion that it may possibly be a new species. Whether species or merely variety, it is well deserving of a place in these pages.

greatly with other species. It is a Fern requiring no special care in its management; over-potting, however, should be avoided. But little is apparently known of the *Asplenium attenuatum*, although introduced into England as early as the year 1825. Of late years, however, it has become more generally cultivated.

An evergreen greenhouse Fern.

Native of New Holland.

Fronde often scarcely divided, but becoming pinnate when of mature growth; sessile, or with longish stalks, becoming proliferous at the apex; linear-oblong, with a very much lengthened and attenuated point; pinnatifidly lobed below, or there distinctly pinnated, the lobes or pinnæ sub-rotund; the margin serrato-dentate.

The stipes and rachis conspicuously scaly, with narrow blackish scales.

The fronds rise from a short, erect caudex.

Length of frond from six to twelve inches; colour dark sombre green.

The sori are large and comparatively few, though occupying much of the lower surface; they are oblique or transverse, yet less so than often happens in other species, and the uppermost ones appear at first sight to be almost longitudinal; on the lower part of the frond, and especially when the development is sufficiently vigorous to throw out the pinnæ there distinct from each other, they are much more obviously oblique.

My thanks are due to Messrs. A. Henderson, of Pine-apple Place, and Mr. R. Sim, of Foot's Cray, for plants of this species, and to Mr. Norman, of Hull, for fronds.

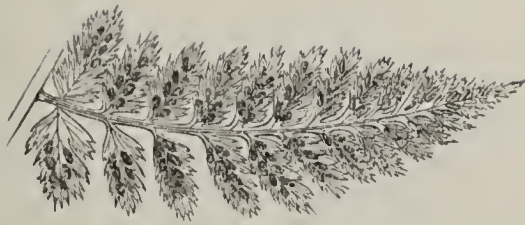
It is in the Fern Catalogues of Messrs. A. Henderson, of Pine-apple Place; R. Sim, of Foot's Cray; and R. Parker, of Holloway.

The illustration is from a plant in my own collection.



ADIANTHUM STRIGILLOSUM M.

LXXXVI Vol. 3.



Portion of mature Frond, under side.

ASPLENIUM STRIGILLOSUM.

LOWE.

PLATE XXXVI. VOL. V.

Athyrium strigillosum,

MOORE.

Asplenium—Spleenwort.

Strigillosum—.....?

IN THE SECTION ATHYRIUM OF AUTHORS.

VERY little appears to be known regarding the *Athyrium strigillosum* of Moore; it was raised from spores by Mr. Bain, of the College Garden, Dublin, but from what country it is uncertain; it may turn out to be one of the Indian species collected by Dr. Wallich. Mr. Moore, of the Chelsea Botanic Gardens, who recognised it as a species new to him, gave it the name of *A. strigillosum*.

The fronds, which are glabrous, are bipinnate, narrow lanceolate-acuminate, straight and rigid, springing from an upright caudex.

Stipes and rachis deeply furrowed above, the former with a few membranous scales near the base, the latter more slightly channeled on each side, and rounded beneath. Pinnæ very short, somewhat triangular and pinnatifid at the apex, dark red

at the base of the partial rachis. Segments ovate, pinnatifid, or deeply and sharply ineiso-dentate. A small white bristle-like spine arises from the base of the segment on each side of the partial rachises, and also from the union of the veins along the middle of the segment. Veins prominent on the upper surface of the segment, and terminated by a white pellucid line in the middle of the teeth.

Sori short, oblique; indusium whitish, and slightly crescent-shaped.

The sporangia are prettily striped with white bands of various shapes upon a pale green-coloured ground, the elastic ring girding them being brown, with belts of green and white markings.

I am indebted to Mr. Henderson, of Wentworth, for a plant and much information regarding this obscure and uncommon species.

Under stove culture the *A. strigillosum* flourishes well.

It may be procured of Messrs. A. Henderson, of Pine-apple Place.

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



ASPLENIUM MICHAUXII.—PORTION OF FROND.



Portion of pinna of mature Frond, under side.

ASPLENIIUM MICHAUXII.

SPRENGEL. J. SMITH. KUNZE. MOORE AND HOULSTON.

PLATE XXXVII. VOL. V.

<i>Nephrodium Filix-fœmina,</i>	MICHAUX.
<i>Aspidium angustum,</i>	WILDENOW.
<i>Asplenium elatius,</i>	LINK.
<i>Aspidium Filix-fœmina,</i>	MICHAUX.
<i>Athyrium angustum,</i>	PRESL.
“ <i>Michauxii,</i>	FEE, (<i>Not of GALLEOTTI.</i>)

Asplenium—Spleenwort. *Michauxii*—Named after Michaux, an American botanist.

IN THE SECTION ATHYRIUM OF AUTHORS.

A LADY-FERN-LOOKING species, and indeed so nearly does it resemble some of the forms of *Asplenium Filix-fœmina*, that it is with difficulty recognised when the two are growing together.

Introduced into England in the year 1823.

A slender, hardy, and deciduous species.

Native of North America.

Fronds glabrous, ovate-lanceolate in form, bi-tripinnatifid; pinnæ lanceolate in shape, approximate, the basal ones six inches in length; pinnules distant, oblong acuminate, having oblong, obtuse, inciso-serrate segments; pinnules flat, and largest next the rachis.

Stipes, rachis, and midrib red whilst growing, changing to a pale straw-colour in a dried frond.

Sori oblong, sublunate, and crowded, indusium fringed on the free margin.

Fronds terminal, and from twenty-four to thirty inches long; deep green in colour; habit erect.

Rhizoma creeping.

For plants my thanks are due to Messrs. Rollisson, of Tooting; and to Mr. R. Sim, of Foot's Cray; and for fronds to Mr. Joseph Henderson, of Wentworth.

This species may be procured of Messrs. Rollisson, of Tooting; R. Sim, of Foot's Cray; and Veitch, of Chelsea.

The illustration is from a plant in my own collection.



A

B

PLANTAE PARSARCOE
REVITTOOL



Mature Frond, under side.

ASPENIUM PETRARCHÆ.

DE CANDOLLE. MOORE AND HOULSTON. KUNZE. FEE.
HOOKER AND GREVILLE. SMITH.

PLATE XXXVIII. VOL. V.

Asplenium glandulosum,

“ *Vallisclausæ*,

“ *Petrarchæ*,

Polypodium Vallisclaus,

LOISEL. PRESL.

REQUIEM.

LINK. DE CANDOLLE.

REQUIEM.

Asplenium—Spleenwort.

Petrarchæ—Petrarch's.

A DELICATE, pretty, dwarf species, and by no means common in cultivation.

Introduced into England in the year 1819, and sent to Kew by Mr. Joseph Henderson.

An evergreen greenhouse Fern.

Native of the south of France.

Fronds glanduloso-pubescent; pinnate, the pinnae being oblong, petiolate, and pinnatifid; segments obtusely crenate. Terminal. Stipes and rachis ebeneous.

Rhizoma tufted.

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

Asplenium Petrarchæ variety is also pinnate, having an ebeneous stem, and the pinnae of a rounded wedge shape. The sori situated near the midrib. Length from three to four inches; colour brilliant green.

For fronds of this species I am indebted to Mr. Joseph Henderson, of Wentworth, as also for others of the variety.

A rare Fern, and probably not to be procured from a Nurseryman.

Plate XXXVIII—A is the normal form of *A. Petrarchæ*, and B the variety.

The illustrations are from Mr. Henderson's fronds.



ADIANTUM AXILLARE.



Portion of pinna of mature Frond, under side.

ASPLENIUM AXILLARE.

J. SMITH. MOORE AND HOULSTON.

PLATE XXXIX. VOL. V.

Allantodia axillaris,

Aspidium axillare,

“ “

Polypodium axillare,

Athyrium axillare,

KAULFUSS. KUNZE.

SWARTZ. SPRENGEL.

WILLDENOW. AITON.

AITON.

PRESL. FEE.

Asplenium—Spleenwort.

Axillare—Axillary.

IN THE SECTION ALLANTODIA OF AUTHORS.

An interesting, large-growing species, introduced into England in the year 1779.

An evergreen greenhouse Fern.

Native of the Islands of Madeira and Azores.

The fronds, which are glabrous, are sub-deltoid, and ovate-

lanceolate in form; habit pendulous. Pinnæ lanceolate; pinnules, which are distant, are narrow, oblong-acuminate, falcate, and drooping; segments oblong-ovate in form, being largest on the upper side nearest to the rachis. Margin dentate.

Terminal.

Stipes at the base scaly.

Rhizoma creeping, and stout.

Sori oblong, sometimes two on the same vein. Indusium vaulted and revolute.

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

For plants my thanks are due to Mr. Joseph Henderson, of Wentworth, and to Mr. R. Sim, of Foot's Cray; and for fronds to the same gentleman, and to Mr. G. Norman, of Hull.

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

The illustration is from a portion of a frond of a plant in my own collection.



ASPLENIUM BROWNII.—PORTION OF FROND.



Pinna of mature Frond, under side.

ASPLENIUM BROWNII.

J. SMITH. MOORE AND HOULSTON. HOOKER.

PLATE XL. VOL. V.

Allantodia Australis,
Athyrium Australe,

R. BROWN. KUNZE.
PRESL. HOOKER.

Asplenium—Spleenwort.

Brownii—After Mr. R. Brown, a well-known
English botanist.

IN THE SECTION ALLANTODIA OF AUTHORS.

A HANDSOME large-growing species, well adapted for an exhibition plant, and easily cultivated.

Introduced into England in the year 1820, and into the Royal Gardens, Kew, by Mr. A. Cunningham, in 1824.

An evergreen greenhouse Fern.

Native of New Holland and Tasmania, (Van Diemen's Land.)

The fronds, which are glabrous, are ovate-lanceolate in form, and subtripinnate; habit somewhat pendulous. Pinnæ lanceolate, pinnules oblong-acuminate, and the segments almost ovate, and largest nearest to the rachis. Margin dentate.

Stipes scaly. Fronds terminal.

Rhizoma thick and creeping.

Sori oblong, short, and crowded together, covering the whole

of the under side of the frond, and frequently two on the same vein. Indusium vaulted and revolute.

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

For plants my thanks are due to Mr. Henderson, of Wentworth, and to Messrs. Rollisson, of Tooting; and for fronds to the same gentlemen; to M. Schott, Director of the Imperial Gardens of Schonbrunn, Vienna; to Mr. G. Norman, of Hull; and to Mr. Clarke, of the Royal Botanic Gardens, Glasgow.

This species can be procured from any of the Nurserymen who keep Ferns.

The illustration is from a plant in my own collection.



ASPENIUM UMBROSUM.—PORTION OF FROND.



Pinna from the apex of mature Frond, under side.

ASPLENIUM UMBROSUM.

J. SMITH. (*Not of* SCHRADER.)

PLATE XLI. VOL. V.

Polypodium umbrosum,

Aspidium umbrosum,

Allantodia umbrosa,

“ “

Athyrium umbrosum,

AITON.

SWARTZ. SCHKUH. R.

BROWN. KAULFUSS.

KUNZE. LINK.

PRESL. FEE.

Asplenium—Spleenwort.

Umbrosum—Shade-loving.

IN THE SECTION ALLANTODIA OF AUTHORS.

A HANDSOME exhibition plant; known in this country as early as 1779, and introduced into the Royal Gardens, Kew, in 1833.

An evergreen greenhouse species.

Native of the Island of Madeira.

The fronds, which are glabrous, are somewhat ovate in form, tripinnate; pinnæ lanceolate, the basal ones standing forwards; pinnules lanceolate. Segments linear-oblong; apex circular; the margin crenato-dentate; lower ones remote and pinnatifid.

Stipes slightly scaly near the base; scales dark brown in colour.

Fronds terminal, adherent to a thick, brief, horizontal rhizoma.

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

For a plant I am indebted to Messrs. Rollisson, of Tooting; and for fronds to Mr. Joseph Henderson, of Wentworth.

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

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



Selenium macrophyllum.



Pinna of mature Frond, under side.

ASPLENIUM MACROPHYLLUM.

SWARTZ. J. SMITH. LINK. FEE.

PLATE XLII. VOL. V.

Asplenium—Spleenwort.

Macrophyllum—Long-leaved.

A RARE handsome Fern, well worthy of general cultivation.

An evergreen stove Fern.

Native of the Mauritius.

Fronde pinnate, linear-lanceolate in form. Pinnæ subopposite, broad, and cuneate at the base, but rapidly narrowing to a very much attenuated apex. Laciniated. About twelve pairs of pinnæ and a terminal one. The terminal pinnæ shorter and more wedge-shaped at the base. Pinnæ petiolulate.

Rachis and stipes ebeneous.

Veins much branched, and well seen in the semi-transparent pinnæ.

Sori linear, large, and bold, situated close to the midrib and almost parallel with it; soon becoming confluent.

I have not been able to procure a plant of *Asplenium macrophyllum*.

For a frond I am indebted to Mr. J. Smith, Curator of the Royal Gardens, Kew.

It is not in any of the Nurserymen's Catalogues.
The illustration is from Mr. Smith's frond.



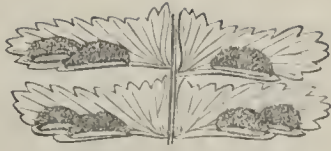
A



B

ASPLENIUM DENIUM.

A. FORMOSUM



Portion of mature Frond, under side.

ASPLENIUM DENTEX.

KUNZE, (*not of* SCHOTT.)

PLATE XLIII.—A. VOL. V.

Asplenium erectum,

“ “

“ *mutilatum*,

LIEBMANN. BORY.

FEE. SCHLECHTENDAL.

KAULFUSS.

Asplenium—Spleenwort.

Dentex—Sharp-toothed.

A HANDSOME rare Fern, somewhat approaching *Asplenium formosum* in form, and by some authorities looked upon as a variety of that species. The habit of the plant is very similar to *A. nidus*; the fronds rising from outside an erect caudiciform rhizoma, bending outwardly, and forming a hollow in the centre of the plant.

An evergreen greenhouse species.

Native of the Cape of Good Hope.

Fronds pinnate; pinnæ subopposite, oblong-lanceolate, incisedentate, approximate, and touching each other at the base. Superior base truncate-auriculate; inferior base excise-cuneate; the basal pinnæ triangular in form, and barren. Auricles wide. The form of the frond linear-lanceolate, slightly narrowing to the base, and attenuated at the apex.

Sori prominent along and approximate to the basal margin

of the pinnæ; usually two on each pinna, and when confluent, of half the width of the pinnæ, and reddish brown in colour. Veins branched.

Length of frond twelve inches; colour rich green.

Rhizoma erect.

Rachis and stipes ebeneous, rounded beneath, fluted above, and much stouter than in *A. formosum*; the sori also bolder.

A. dentex has the pinnæ not dentate on the basal edge, the upper edge and round the apex dentate, yet not deeply so as in *A. formosum*; pinnæ broader and stouter than in *A. formosum*.

For a plant my obligations are due to Mr. T. Downes, of Ilfracombe.

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

The illustration is from a plant in my own collection.



Portion of mature Frond, under side.

ASPLENIUM FORMOSUM.

WILDENOW. J. SMITH. KUNZE. PRESL. LIEBMANN.
SCHLECHTENDAL. MARTENS AND GALLEOTTI. FEE.

PLATE XLIII.—B. VOL. V.

Asplenium—Spleenwort.

Formosum—Beautiful.

A LOVELY delicate-looking small-growing species, rare in cultivation, although introduced into this country in 1825.

An evergreen stove species.

Native of Tropical America—Brazil and Mexico.

Liebmann remarks that it is common in the temperate region on the east side of Mexico, growing in the forest region on dry cliffs in cracks, or on dry, hard, clay earth in woods. Liebmann found it in Potrero de Consoquitla at an elevation of two thousand five hundred feet; at Mirador, at Trapiche de la Concepcion, in the department of Oajaca, at an altitude of three thousand feet; and at Tepitongo, in the department of Oajaca, at an altitude of five thousand feet. Schiede found it at Hacienda de la Laguna.

Frond pinnate, linear; pinnae opposite, deeply divided, almost to midrib; base cuneate, and briefly petiolulate. Superior margin of pinnae next to the base, the lobe is divided into four,

the next two or three divided into two, and near the apex only once divided. Apex more or less rounded.

Veins forked.

Stipes ebeneous, rounded below, fluted above.

Sori situated along the inferior margin, more or less flat, and at right-angles to the stem.

Length of frond twelve inches; width, which is equal, (except near the base and apex, where narrower,) one inch and a quarter.

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

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

The illustration is from a frond sent by Mr. J. Smith, of Kew.



ASPENIUM CAUDATUM



Pinna of mature Frond, under side.

ASPLENIUM CAUDATUM.

FORSTER. SCHKUHR. J. SMITH. KUNZE. FEE.

PLATE XLIV. VOL. V.

Asplenium horridum,

KAULFUSS.

Asplenium—Spleenwort.

Caudatum—Tailed.

AN interesting yet almost unknown species in general collections. Rapidly propagated by the young plants which form near the apex of each frond.

An evergreen stove Fern.

Native of India, Polynesia, and Java.

Pinnate, pinnæ opposite, lanceolate, and pinnatifid, broadest at the base, and attenuated at the apex; segments broad near the base of the pinnæ, becoming gradually more linear towards the apex, where attenuated. Frond of the same width throughout, except near the apex, where narrower.

Stipes and rachis brown, and exceedingly hirsute.

Rhizoma scaly, brown, and slightly creeping.

Veins branched.

Sori bold, linear, approximate, and on either side, and parallel to the mid-vein, making a close double row along the mid-vein, besides which one or more running longitudinally along the

segments, and at a slight angle to those near the mid-vein, and usually not so bold. Colour reddish brown.

Length of frond thirty inches, of which the lower eight inches are naked; width of frond from six to eight inches.

Habit more or less erect.

For a plant of this species I am indebted to Messrs. E. G. Henderson, of St. John's Wood.

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

The illustration is from a plant in my own collection.



ASPLENIUM DECURTATUM.



Portion of mature Frond, under side.

ASPLENIIUM DECURTATUM.

LINK. METTEN. J. SMITH. KUNZE.

PLATE XLV. VOL. V.

Athyrium decurtatum,

PRESL. FEE.

Asplenium—Spleenwort.

Decurtatum—Shortened.

IN THE SECTION ATHYRIUM OF AUTHORS.

Asplenium decurtatum is a Lady Fern-looking species.

An evergreen stove species.

Native of Brazil.

Fronde bipinnate, linear-lanceolate in form, apex acuminate; pinnæ long, acute; pinnules obtusely-lanceolate. Pubescent. Pinnæ deeply pinnatifid, subopposite or alternate; about thirty pairs on each frond.

Stipes and rachis whitish.

Sori oblong, brief, and all equal.

Length of frond twelve to twenty-four inches.

I have not been able to procure a plant of this species.

For fronds my thanks are due to M. Schott, Director of the Imperial Gardens of Schonbrunn, and to Mr. J. Henderson, of Wentworth.

It is not in any Nurserymen's Catalogues.

The illustration is from M. Schott's plant.

GENUS II.

DIPLAZIUM. SWARTZ.

A SMALL genus, having fronds simple, pinnate, or bi-tripinnate, and from ten to sixty inches in length.

The veins forked or pinnate, the venules free, differing from *Asplenium* in being sporangiferous on both sides, (instead of on the superior side only,) constituting binate, linear sori.

Indusium plane.

We have no British example.



DIPLAZIUM PLANTASINUM

XLVI v.



Portion of mature Frond, under side.

DIPLAZIUM PLANTAGINEUM.

SWARTZ. SCHKUHR. LODDIGES. J. SMITH. KUNZE.
 LINK. WILLDENOW. PRESL.
 LEIBMANN. FEE. MOORE AND HOULSTON.

PLATE XLVI. VOL. V.

Asplenium plantagineum,
Diplazium acuminatum,

LINNÆUS.
 RADDI. LINK.
 (Not of BLUME.)

Antigramma “

PRESL.

Diplazium—To double, in allusion to the double covering of the spore-cases.

Plantagineum—Plantain-leaved.

A DESIRABLE dwarf Fern; introduced into this country in 1819, and into the Royal Gardens, Kew, in 1841.

An evergreen stove species.

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

The fronds, which are simple and glabrous, are oblong-acuminate in form, undulate, margin crenato-serrate, proliferous at the base.

Stipes slightly scaly near the base.

Fronds terminal, mostly fertile throughout.

Rhizoma fasciculate and erect.

Sori linear.

Veins branched.

Length from eight to twelve inches; colour a deep green.

For plants my thanks are due to Messrs. Veitch, Jun., of Chelsea, and to Mr. Joseph Henderson, of Wentworth; and for fronds to Messrs. Booth, of Hamburg, and R. Sim, of Foot's Cray.

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

The illustration is from a frond sent by Messrs. Booth, of Hamburg.



DIPLAZIUM AMBIGUUM.



Pinna of mature Frond, under side.

DIPLAZIUM AMBIGUUM.

J. SMITH. LINK, (*not of RADDI, or PRESL.*)

PLATE XLVII. VOL. V.

<i>Diplazium Shepherdii</i> ,	PRESL. KUNZE.
“ <i>coarctatum</i> ,	LINK. KUNZE.
<i>Asplenium ambiguum</i> ,	RADDI, (<i>not of SWARTZ.</i>)
“ <i>Shepherdii</i> ,	SPRENGEL. OF GARDENS.
“ <i>striatum</i> ,	SCHOTT. OF GARDENS.
	(<i>Not of LINNÆUS or PLUMIER.</i>)
<i>Diplazium dubium</i> ,	LINK. FEE. OF GARDENS.
“ <i>fraternum</i> ,	PRESL.
<i>Asplenium cirrhatum</i> ,	SIEBER.

Diplazium—To double.

Ambiguum—Ambiguous.

A HANDSOME well-known species, in gardens known under the name of *Diplazium Shepherdii*. It requires a considerable amount of heat to grow it successfully. Rapidly propagated from spores.

An evergreen stove species.

Introduced into England in 1822, and into the Royal Gardens, Kew, in 1841.

Native of Tropical America—Brazil.

Fronde glabrous; ovate-acuminate in form, and pinnate;

pinnae ovate-lanceolate and cuspidate; inferior ones petiolulate; superior ones sub-sessile and pinnatifid; base truncate-cuncate, segments blunt, oblong-obtuse, and dentate.

Fronds terminal.

Rhizoma fasciculate and erect.

Length of frond eighteen inches; colour bright green.

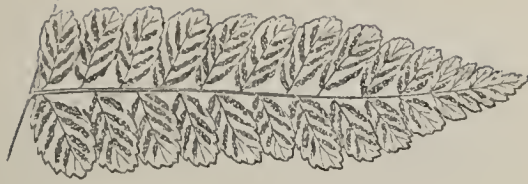
For plants of this species I am indebted to Mr. Henderson, of Wentworth, and to Mr. Haythorn, gardener to the late Lord Middleton; and for fronds to Sir Oswald Mosley, Bart., of Rolleston Hall; M. Schott, of the Imperial Gardens of Schonbrunn; Mr. Downes, of Ilfracombe; and Mr. Sim, of Foot's Cray.

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

The illustration is from a plant in my own collection.



EPIAZIUM STRIATUM.



Pinna of mature Frond, under side.

DIPLAZIUM STRIATUM.

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

PLATE XLVIII. VOL. V.

Diplazium subulatum,
" *acuminatum*,
Asplenium striatum,
" "

OF GARDENS.
MARTENS AND GALLEOTTI.
LINNÆUS. PLUMIER.
WILDENOW.

Diplazium—To double.

Striatum—Streaked.

A HANDSOME large Fern, which was introduced into the Royal Gardens, Kew, by Mr. Anderson, in the year 1793.

An evergreen stove species.

Native of Tropical America—Mexico. Jamaica.

Leibmann remarks that it occurs in the eastern temperate region of Mexico. Galleotti found it in damp places near Jalapa and Mirador, at an altitude of from three to four thousand feet.

The fronds bipinnate; pinnæ lanceolate; pinnules oblong-acuminate; base sub-cordate. Segments obtuse and dentate.

Rachis, together with the midrib, both of the pinnæ and pinnules, pubescent.

Stipes scaly at the base.

Fronds terminal.

Rhizoma erect, and rising above a foot in height.

Sori linear, elongate, and produced on both sides of the veinlets.

Indusium of the same form as the sori.

Length of frond from thirty to sixty inches; length of pinnæ from ten to fifteen inches. Colour light green.

I am indebted to Messrs. A. Henderson, of Pine-apple Place, for a plant of this Fern; and to the same gentleman and M. Schott, of the Imperial Gardens of Schonbrünn, for fronds.

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

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



DIPLAZIUM SYLVATICUM

XLIX-VOL. 5.



Pinna of mature Frond, under side.

DIPLAZIUM SYLVATICUM.

SWARTZ. SCHKUHR. J. SMITH. KUNZE.
MOORE AND HOULSTON. SCHOTT. (*Not of SIEBER.*)

PLATE XLIX. VOL. V.

Callipteris sylvatica,
Anisogonium sylvaticum,
Asplenium sylvaticum,

BORY. FEE.
PRESL.
PRESL.

Diplazium—To double.

Sylvaticum—Forest.

A VERY handsome delicate species, deserving of more general cultivation.

An evergreen stove species.

Native of the East Indies—Java and Mauritius.

Fronds glabrous, broadly lanceolate in form, and pinnate. Pinnæ linear, narrow, and acuminate; petiolulate. Base subcordate, bluntly crenate, with rounded serrate segments.

Stipes scaly; scales dark brown in colour.

Fronds terminal.

Rhizoma fasciculate and erect.

Sori linear, and produced on both sides of the veinlets.

Length of frond from twenty-four to thirty-six inches; length of pinnæ from six to ten inches. Colour deep green.

For a plant I am indebted to Mr. R. Sim, of Foot's Cray; and for fronds to Mr. J. Henderson, of Wentworth, and to M. Schott, of the Imperial Gardens of Schonbrunn.

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

The illustration is from a frond forwarded by M. Schott.



DIPLAZIUM DECUSSATUM.

I, - Vol. 5.



Pinna of mature Frond, under side.

DIPLAZIUM DECUSSATUM.

J. SMITH. MOORE AND HOULSTON.

PLATE L. VOL. V.

Diplazium Lasiopteris,
Asplenium decussatum,

LINK. KUNZE. FEE. SCHOTT.
WALLICH, (not of SWARTZ.)

Diplazium—To double.

Decussatum—Cross-fronded.

A DULL, woolly-looking, coarse species, which propagates so freely from spores, that every Fern-pot abounds with seedling plants.

Introduced into the Royal Gardens, Kew, in 1840, having been received from the Royal Botanic Gardens of Berlin.

An evergreen stove Fern.

Native of the East Indies.

Fronds pubescent, somewhat ovate-lanceolate in form, and pinnate; the pinnæ petiolulate, lanceolate in shape, subcordate at the base, and profoundly pinnatifid, with oblong-obtuse rounded segments, which are erenate, the basal ones remote.

Stipes and rachis very pubescent, and dark coloured.

Fronde terminal.

Rhizoma creeping and slender.

Sori linear, produced on both sides of the veinlets, the margin of the indusium fringed.

Length of frond from twenty-four to thirty inches; colour a dull green.

I have received plants of *Diplazium decussatum* from Mr. R. Sim, of Foot's Cray; Mr. W. Ingram, of Belvoir Castle; Messrs. Booth, of Hamburg; and Messrs. Stansfield, of Todmorden.

It is in all the principal Nurserymen's Catalogues.

The illustration is from a plant in my own collection.



DIPLAZIUM THUYIFEROIDES.



Pinna of mature Frond, under side.

DIPLAZIUM THELYPTEROIDES.

PRESL. J. SMITH. MOORE AND HOULSTON.

PLATE LI. VOL. V.

Asplenium thelypteroides,
Athyrium thelypteroides,

MICHAUX. SCHUHR. KUNZE.
FEE.

Diplazium—To double. *Thelypteroides*—Thelypteris-like.

A LOVELY species that should be introduced into every outdoor Fernery.

Introduced into England in 1823, and into the Royal Gardens, Kew, in 1845.

A hardy deciduous Fern.

Native of North America.

The fronds, which are lanceolate in form, are pinnate, the under surface scattered over with scaly hairs. Pinnæ lanceolate, profoundly pinnatifid, and sub-sessile; segments oblong, with the apex rounded, and the margin crenately serrate.

Stipes at the base scaly.

Fronds terminal.

Rhizoma thick and creeping.

Sori linear, sometimes produced on both sides of the veinlets,

and at others simple, as in the true *Asplenium*. Indusium vaulted; margin dentate.

Length of frond twenty-four inches; colour a dull green.

My obligations are due to Mr. R. Sim, of Foot's Cray, and to Messrs. Rollisson, of Tooting, for plants of this Fern.

This species may be procured of Messrs. Sim, of Foot's Cray; Rollisson, of Tooting; and Kennedy, of Covent Garden.

The illustration is from a plant in my own collection.



ADANTUM TREESCENS

LII-Vol. 5



Pinna of mature Frond, under side.

DIPLAZIUM PUBESCENS.

LINK. KUNZE. FEE.

PLATE LII. VOL. V.

<i>Callipteris Malabarica,</i>	J. SMITH. MOORE AND HOULSTON.
“ <i>Seramporensis,</i>	FEE.
<i>Diplazium Malabaricum,</i>	SPRENGEL.
“ <i>esculentum,</i>	SWARTZ.
“ <i>Seramporensis,</i>	SPRENGEL.
<i>Asplenium dubium,</i>	SWARTZ. SCHKUHR.
<i>Digrammaria ambigua,</i>	PRESL. HOOKER.
“ <i>esculenta,</i>	FEE.
<i>Microstegia</i> “	PRESL.
“ <i>ambigua,</i>	PRESL.
<i>Anisogonium Seramporensis,</i>	PRESL.

Diplazium—To double.

Pubescens—Pubescent.

A FINE species, introduced into this country about the year 1820, and very handsome when in fructification.

An evergreen stove Fern.

Native of the East Indies and the Malayan Archipelago.

The fronds, which are pubescent, are bipinnate, the pinnæ lanceolate in form, the pinnules oblong-lanceolate, the inferior pinnules petiolulate, subcordate-auriculate; superior pinnules adnate-truncate; margin serrate.

Rachis and stipes slightly scaly at the base, and profoundly furrowed.

Fronds terminal; rhizoma erect.

Sori linear, produced on both sides of the venules. Indusium of the same form as the sori.

Veins pinnate.

Length from fifty to seventy inches; colour a dull green.

My thanks are due to Mr. R. Sim, of Foot's Cray, for a plant of this Fern; and to M. Schott, of the Imperial Gardens of Schonbrunn, and Mr. J. Henderson, of Wentworth, for fronds.

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

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

GENUS III.

HEMIDICTYUM. PRESL.

A GENUS represented by a solitary species, the *Hemidictyum marginatum* of Presl. A large handsome Fern.

Pinnate fronds, forked veins, parallel venules, except near the margin of the pinnæ, where they anastomose, and are reticulated, and are combined by a transverse continuous marginal vein.

Sori unilateral and linear.

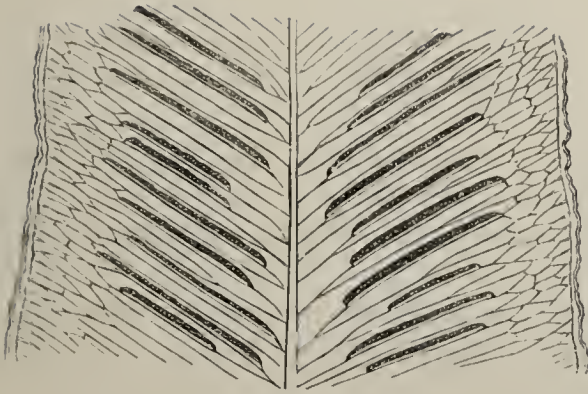
Indusium plane.





Asplenium marginatum.—INFA.

LIII—no 1.



Portion of pinna of mature Frond, under side.

HEMIDICTYUM MARGINATUM.

PRESL. HOOKER AND BAUER. J. SMITH.

PLATE LIII. VOL. V.

<i>Hemidictyon marginatum,</i>	FEE.
<i>Asplenium marginatum,</i>	LINNEUS. PLUMIER. LEIBMANN. SCHOTT.
“ <i>Mikani,</i>	PRESL.

Hemidictyum—A half-net.

Marginatum—Margincd.

AN exceedingly beautiful, rare, and noble-looking species, attaining a large size, and very dissimilar in general appearance to the genus *Asplenium*, although in some respects closely allied.

An evergreen stove Fern.

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

Leibmann remarks that it occurs in the warm temperate forests of Myrtles, Terebinthaceæ, and Laurinæ, between Joetepec and S. Pedro Tepinapa, in Chinantla, in the Department of Oajaca, at an altitude of from three thousand to three thousand five hundred feet.

Fronds broadly lanceolate, pinnate, pinnæ twelve to fourteen inches long, and three to five inches wide, widest at the base, narrowing to an acute apex; around the margin is a membranous edge, from which, no doubt, it takes its name of *marginatum*. Shortly petiolate.

Veins forked, venules parallel till near the margin, where anastomosing and reticulated.

Fronds semi-transparent. Pinnæ opposite or sub-opposite.

Rhizoma erect.

Stipes and rachis green, except near the base, where brownish.

Base scaly, elsewhere destitute of scales.

Scales reddish.

Sori linear, unilateral, and very conspicuous, situated on the superior side of the parallel veins.

Length of frond from six to fourteen feet, the lower two feet naked; colour of frond a pale lively green.

For a plant and fronds of this species my obligations are due to M. Schott, Director of the Imperial Gardens of Schonbrunn, near Vienna.

This species may be procured of Messrs. Veitch, Jun., of Chelsea.

The illustration is from a plant in my own collection.

GENUS IV.

CETERACH. WILLDENOW.

A SMALL family of dwarf Ferns, all rare except one British example, *Ceterach officinarum*.

Fronds pinnate or sinuose-pinnatifid, beneath the frond densely squamose.

The veins forked and anastomosing.

Sori oblong, protruding through the squamæ.

Indusium obsolete.

Fee gives the following:—*C. officinarum*, *C. latifolium*, *C. capense*, and *C. cordatum*.



CETRECH OFFICINARUM
LIV - .OL. 5.



Portion of mature Frond, upper side.

CETERACH OFFICINARUM.

WILLDENOW. HOOKER. LINDLEY AND MOORE. KUNZE.
 NEWMAN. LINK. FEE. MOORE.
 SCHOTT. DEAKIN. BABINGTON. HOOKER AND ARNOTT.

PLATE LIV. VOL. V.

<i>Asplenium ceterach</i> ,	LINNÆUS. BLACK. BERGER.
“ “	MORISON. PLUMIER. BOLTON.
“ <i>sinuatum</i> ,	SALISBURY.
<i>Grammitis ceterach</i> ,	SWARTZ. SCHREUHR. LODDIGES.
“ “	HOOKER.
<i>Scolopendrium ceterach</i> ,	J. E. SMITH. SOWERBY. SYMONS.
<i>Gymnogramma ceterach</i> ,	SPRENGEL. PRESL.
<i>Vittaria ceterach</i> ,	BERNHARDI.
<i>Gymnopteris ceterach</i> ,	BERNHARDI.
<i>Blechnum squamosum</i> ,	STOKES.
<i>Notolepium ceterach</i> ,	NEWMAN.

Ceterach—The Scale Fern.

Officinarium—Shop.

THE common Scale Fern is a beautiful, dwarf, indigenous, local species, which flourishes well in a hardy Fernery.

Generally distributed, although local, in England and Wales,

more abundant in Ireland, and less frequent in Scotland. Found also in the Channel Islands, in France, Italy, Germany, Switzerland, Spain, Greece, North-West India, Algiers, Armenia, in the Azores, Cape de Verd Islands, and Madcira.

A hardy evergreen species.

Fronds lanceolate, pinnatifid, and coriaceous; frequently pinnate near the base; segments oblong-obtuse; upper surface glabrous, and brilliant green; under surface densely covered with fimbriated chaffy scales.

Veins forked and obscure.

Stipes brief. Caudex brief and tufted, and covered with dark brown reticulated scales.

Fronds numerous.

Sori linear, oblong, and situated on the anterior side of the anterior venules. Indusium obsolete.

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

Mr. Moore describes two varieties.

1.—*Crenatum*, having the margins of the lobes crenato-serrate. It is very handsome, and usually larger in size. My brother, (Captain A. S. H. Lowe,) found a well-marked form of this variety on Karberry Island, off Athlone, Ireland.

2.—*Depauperatum*; segments depauperated. Found in Ireland by Dr. Allchin.

The wild localities of *Ceterach officinarum* are old walls, ruins, and rocks. It grows very fine at Bathford, Somersetshire.

It may be procured of any Nurseryman.

The illustration is from a plant in my own collection.

GENUS V.

SCOLOPENDRIUM. SMITH.

A SMALL family, of which two species alone are in cultivation, the *S. vulgare* and the *S. Krebsii*—the former is our native example.

Fronds simple, veins forked, venules free, the superior and inferior branch of each fascicle contiguous and parallel, being sporangiferous on their proximate sides, and constituting two linear confluent sori, each having a linear indusium, the free margins of which connive.

Fee gives the following:—*S. officinarum*, *S. hemionites*, *S. minus*, *S. longifolium*, *S. Durvillei*, *S. Krebsii*, and *S. pinnatum*.



ISOLAIRIA VULGATA

LV-VOL. 2



Portion of mature Frond, under side.

SCOLOPENDRIUM VULGARE.

J. SMITH. LINDLEY AND MOORE. SYMONS. DEAKIN.
 HOOKER AND ARNOTT. BABINGTON. NEWMAN. SOWERBY.

PLATE LV. VOL. V.

<i>Scolopendrium officinarum</i> ,	SWARTZ. SCHKUHR. SMITH.
“ “	KUNZE. LINK. PRESL.
“ “	FEE. SCHOTT. HOOKER.
<i>Asplenium scolopendrium</i> ,	LINNÆUS. BOLTON.
<i>Scolopendrium phyllitis</i> ,	ROTH.
“ <i>officinale</i> ,	DE CANDOLLE.
“ <i>lingua</i> ,	CAVANILLES.
<i>Asplenium elongatum</i> ,	SALISBURY.
<i>Blechnum linguifolium</i> ,	STOKES.
<i>Phyllitis scolopendrium</i> ,	NEWMAN.
“ <i>polyschides</i> ,	RAY.
“ <i>crispa</i> ,	BAUHIN.
“ <i>multifida</i> ,	GERARDE. RAY.

Scolopendrium—Hart's-tongue.

Vulgare—Common.

A GRACEFUL, indigenous, evergreen species, growing in damp shady situations, and subject to great variety from spores.

Exceedingly common in England, Scotland, and Ireland.

Found also in the Orkney and Shetland Islands, the Channel Islands, throughout Europe, Greece, Italy, Spain, Algiers, in the Azores, Madeira, Persia, Asia Minor, and the United States.

Known in England as the Common Hart's-tongue Fern.

Fronds simple, glabrous, and broadly linear, with an attenuated apex and a cordate base; margin entire. Stipes and rachis scaly. Terminal; adherent to a somewhat creeping rhizoma.

Veins forked; venules free, terminating in club-shaped apices. Caudex short and stout. Stipes covered with membranous scales.

Sori linear and indusiate.

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

Some of the varieties are exceedingly handsome. To Mr. Moore we are greatly indebted for giving to the public so interesting a Catalogue of the forms of *Scolopendrium vulgare*. From his account the following are extracted:—

1.—*Polyschides*. Fronds narrower, margin deeply crenately-lobed, and sori short: found in the West of England.

2.—*Cornutum*. The apex in the form of a hook: found in Yorkshire.

3.—*Marginatum*. Having a lobed margin below the frond as well as above. Found in the West of England. Very distinct.

4.—*Crispum*. A frilled form. Very distinct, and mostly barren.

5.—*Multifidum*. Multifid near the apex.

6.—*Ramosum*. Multifid, dwarf, and the stem below the leafy portion of the frond branched.

7.—*Laceratum*. Very variable, profoundly irregularly-lobed, apex dilated, multifid, and crisped. Found at Taunton, by Mr. Young.

8.—*Macrosorum*.

9.—*Fissum*.

10.—*Obtusidentatum*.

11.—*Crenato-lobatum*.

12.—*Resectum*.

13.—*Sinuatum*.

14.—*Inæquale*.

15.—*Rimosum*.

16.—*Inops*.

17.—*Irregulare*.

18.—*Spirale*.

19.—*Compositum*.

20.—*Nudicaule*.

21.—*Abruptum*.

- | | |
|----------------------------------|------------------------------------|
| 22.— <i>Variabile.</i> | 44.— <i>Supralineatum.</i> |
| 23.— <i>Striatum.</i> | 45.— <i>Supralineato-resectum.</i> |
| 24.— <i>Subvariegatum.</i> | 46.— <i>Multiforme.</i> |
| 25.— <i>Apicilobum.</i> | 47.— <i>Chelafrons.</i> |
| 26.— <i>Lanceolum.</i> | 48.— <i>Crista-galli.</i> |
| 27.— <i>Sigittifolium.</i> | 49.— <i>Digitatum.</i> |
| 28.— <i>Sagittato-cristatum.</i> | 50.— <i>Glomeratum.</i> |
| 29.— <i>Retinerium.</i> | 51.— <i>Flabellatum.</i> |
| 30.— <i>Pachyphyllum.</i> | 52.— <i>Depaupcratum.</i> |
| 31.— <i>Coriaceum.</i> | 53.— <i>Cristatum.</i> |
| 32.— <i>Poeciliferum.</i> | 54.— <i>Lacerato-marginatum.</i> |
| 33.— <i>Peraferum.</i> | 55.— <i>Ramo-marginatum.</i> |
| 34.— <i>Muriatum.</i> | 56.— <i>Ramosum-majus.</i> |
| 35.— <i>Jugosum.</i> | 57.— <i>Constrictum.</i> |
| 36.— <i>Papillosum.</i> | 58.— <i>Rugosum.</i> |
| 37.— <i>Sculpturatum.</i> | 59.— <i>Bireniforme.</i> |
| 38.— <i>Imperfectum.</i> | 60.— <i>Salebrosum.</i> |
| 39.— <i>Siciforme.</i> | 61.— <i>Laciniatum.</i> |
| 40.— <i>Submarginatum.</i> | 62.— <i>Subcornutum.</i> |
| 41.— <i>Proliferum.</i> | 63.— <i>Undulatum.</i> |
| 42.— <i>Fimbriatum.</i> | 64.— <i>Undulato-lobatum.</i> |
| 43.— <i>Bimarginatum.</i> | 65.— <i>Acroeladon.</i> Found near |

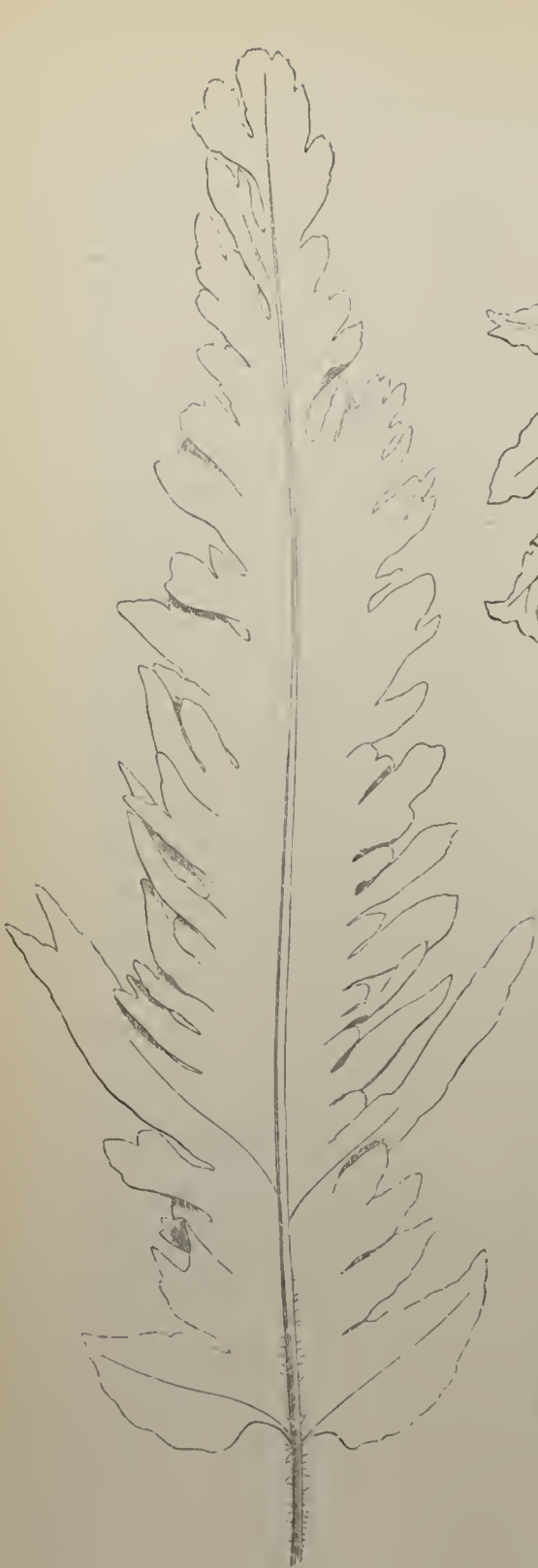
Ambleside, in 1857, by the author.

To Mr. Moore's "Hand-book of British Ferns" we must refer for descriptions of all these varieties.

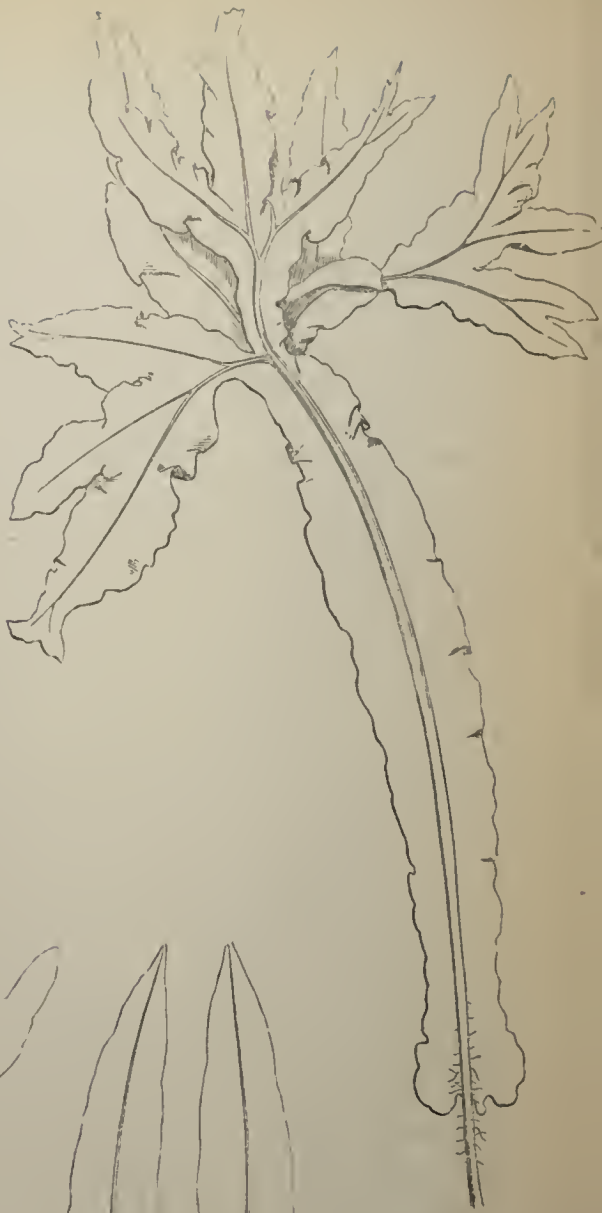
S. vulgare is very readily raised from spores, and when the spores are from the multifid varieties there is a great diversity of form in the seedling plants.

This plant can be gathered in almost every part of Great Britain. A few of the varieties may be procured of Messrs. Sim, of Foot's Cray; Veitch, of Chelsea; and A. Henderson, of Pine-apple Place.

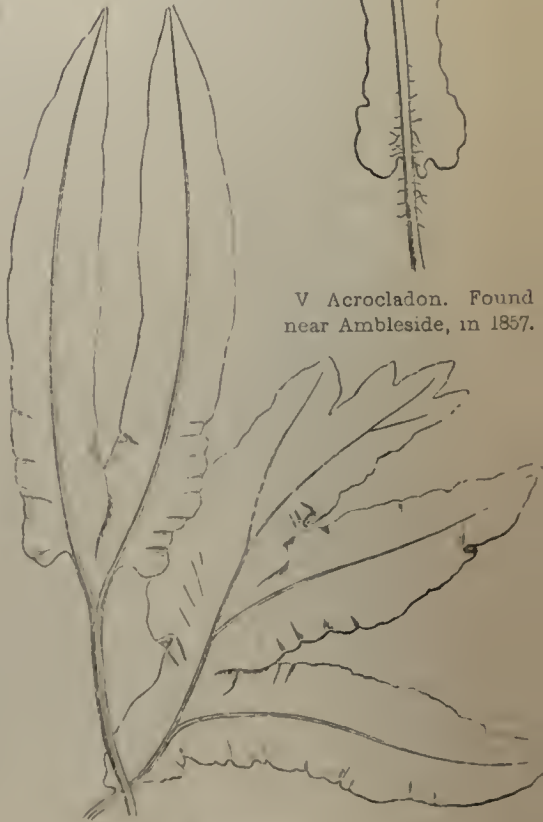
The illustrations are from plants in my own collection.



V. Laceratum.



V. Acrocladon. Found near Ambleside, in 1857.



V. Multifidum.

Varieties of Scolopendrium V. L. re.



SCOLOPENDRIUM KREBSII.



Pinna of mature Frond, under side.

SCOLOPENDRIUM KREBSII.

KUNZE. J. SMITH. FEE. SCHKUH. MOORE. SCHOTT.

PLATE LVI. VOL. V.

Onychium Krebsii,

KUNZE.

Scolopendrium—Hart's Tongue.

Krebsii—.....?

An interesting dwarf species.

Introduced by Mr. Joseph Henderson, of Wentworth.

An evergreen warm greenhouse Fern.

Native of the Cape of Good Hope and Natal.

Frond coriaceous, pinnate, broadly lanceolate in form; apex abruptly acuminate; pinnæ smooth, spreading, and numerous; sessile lanceolate, auriculate above and below at the base; base subcordate; margin repand and revolute.

Sori numerous, short and oblique.

Stipes brief, terminal, and adherent to a semi-erect rhizoma.

Length of frond from twelve to eighteen inches; length of longest pinna three inches.

My thanks are due to Mr. J. Henderson, of Wentworth, for a plant of this species; and to the same gentleman, and to M. Schott, Director of the Imperial Gardens of Schonbrunn, for fronds.

It may be procured of Messrs. Sim, of Foot's Cray; Rollisson, of Tooting; E. G. Henderson, of St. John's Wood; Kennedy, of Covent Garden; and Booth, of Hamburg.

The illustration is from a plant in my own collection.

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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. It sometimes happens 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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