

spots, the outermost alternated with black spots on the fringe : body as usual. Expanse of wings 50 millim.

Jinchuen, W. Corea (*E. B. Levett*).

33. *Abraxas miranda*.

Abraxas miranda, Butler, Ann. & Mag. Nat. Hist. ser. 5, vol. i. p. 441 (1878); Ill. Typ. Lep. Het. iii. p. 48, pl. lii. fig. 12 (1879).

Jinchuen, W. Corea (*E. B. Levett*).

34. *Hymenia fascialis*.

Phalæna (*Pyrælis*) *fascialis*, Cramer, Pap. Exot. iv. pl. 398. fig. O (1782).

S.E. coast of Corea (*A. Carpenter*).

35. *Lozotænia*? *congruana*.

Dichelia congruana, Walker, Cat. Lep. Het. xxviii. p. 320. n. 13 (1863).
Tortrix shanghaiana, Walker, *l. c.* p. 327. n. 47.

S.E. coast of Corea (*A. Carpenter*).

Walker's types are in poor condition; but nevertheless I have little doubt that they should be referred to *Lozotænia*, and placed near to *L. fucana*.

XIII.—On *Sphenopteris crassa* (*Lindley and Hutton*).

By ROBERT KIDSTON *.

[Plate IV.]

Sphenopteris crassa, L. & H., Fossil Flora, pl. clx. (1835).

Adiantites pachyrrachis, Göppert, Die fossilen Farrnkräuter, p. 387 (1836).

Cyclopteris pachyrrachis, Unger, Synopsis Plantarum Fossilium, p. 56 (1845).

Cyclopteris adiantoides, Unger, Genera et Species Plantarum Fossilium, p. 100 (1850).

Adiantites crassus, Schimper, Traité de Paléontologie Végétale, vol. i. p. 425 (1869).

Sphenopteris Kiowitzensis, Stur, Die Culm-Flora, Band i. p. 32, pl. vi. fig. 8 (1875).

Calymmotheca Kiowitzensis, Stur, Die Culm-Flora, Band ii. p. 151 (1877).

Perhaps no fossil plant of equally rare occurrence has received so many names as the present species. More than half

* Read before the Royal Physical Society, Edinburgh, 17th January, 1883.

of the synonyms have been created by systematists who, differing in opinion as to the genus in which the plant should be placed, appear to have thought that, on its being removed from one genus to another, they were quite justified in also applying a new specific name.

Since this fern was described by Lindley and Hutton in 1835, and the publication of Schimper's 'Traité de Paléontologie Végétale' in 1869-74, three different designations have been applied to it, in none of which was any trace of the original name preserved.

The first alteration was made by Göppert in his work 'Die fossilen Farrnkräuter,' where he classes *Sphenopteris crassa*, L. & H., with *Adiantites*, and gives it a new specific name (*pachyrrachis*), without assigning any reason for the change. At that time the sole example which appears to have been known to him was the original type specimen, as he only mentions Burdiehouse as its locality. Little excuse can be made for such total disregard of priority of name.

In 1845 Unger placed this fern in the genus *Cyclopteris*, and retained Göppert's specific name for the species. The same author five years later, in his 'Genera et Species,' altered the specific name to *adiantoides*, to avoid confusion, as another *Cyclopteris*, from the Lias, had been described under the name of *Cyclopteris pachyrrachis*.

No further change took place in the designation of this plant till 1869, when Schimper again placed it in the genus *Adiantites*, but restored the original specific name of *crassus*.

My attention was specially directed to this fern when going over the fossil plants in the Museum of Science and Art, Edinburgh. In the "Hugh-Miller Collection" were two specimens from Burdiehouse, one of which agreed entirely with the description and figure of *Sphenopteris Kiowitzensis*, Stur; but on the lower part of the specimen were a few pinnules similar to those on the figure of *S. crassa*, L. & H.

From the original plate and description of Lindley and Hutton I could not, however, determine whether the plant described by Stur was a distinct species or only a more perfect specimen of *Sphenopteris crassa*.

On searching I was successful in finding the type of *S. crassa*, L. & H., in the Museum in connexion with the class of geology in the University of Edinburgh, an examination of which at once showed that the specimens in the "Hugh-Miller collection," and the *S. Kiowitzensis*, Stur, belonged to *S. crassa*, L. & H.

The type specimen shows the lower part of a frond, the axis of which bifurcates about an inch above the base of the portion which has been preserved.

No pinnæ are borne on the rachis below the bifurcation; but on the left-hand side of the left arm of the fork three pinnæ are given off (Pl. IV. fig. 1). On the right-hand side of the same arm of the fork only one is produced; but below it we have two large cyclopteroid pinnules, which occupy an analogous position on the stem to that of the pinnæ.

On either side of the axis, below the bifurcation, large cyclopteroid pinnules are also situated, similar to those on the inner side of the left and on the remaining fragment of the right-hand arm of the bifurcation.

On the highest pinna, the form of the pinnules changes and assumes a rhomboidal outline, the margins being more or less deeply cleft.

The rachis shows little scars from which scales have probably fallen.

On the specimen in the "Hugh-Miller Collection," one of the pinnæ towards the lower part of the fossil shows the cyclopteroid pinnules; but on the greater portion of the specimen their form is rhomboidal (Pl. IV. fig. 2).

The last-mentioned pinnules are composed of a number of cuneate segments, united together in a fan-like manner, the central one being the longest, on either side of which the truncated apices of the segments give a dentate outline to the pinnule, which is broadest near its centre.

These must be regarded as the typical pinnules, the cyclopteroid pinnules only occurring towards the base of the frond.

The difference between these two forms of pinnules is so marked that, unless they had been observed on the same frond, one would scarcely imagine that they belonged to the same plant.

In the figure of this species in the 'Fossil Flora' the dimorphic nature of the pinnules has not been brought out, though on the specimen it is distinctly shown on the uppermost pinna.

The plant which Stur has described under the name of *Sphenopteris Kiowitzensis* represents the middle part of a frond.

His specimen likewise shows a dichotomy of the main axis, as well as the dimorphic nature of the pinnules.

In referring to the affinities of his specimens, Stur says:—"Our plant shows almost as near a relationship with *Sphenopteris crassa*, L. & H., from the Carboniferous Limestone of Burdiehouse. This has the rachis simple below, above bifurcated, and bears pinnules, which likewise decrease from above downwards (?).

"But in the English plant the lobulation is different, the lobes being much broader, and the divisions between them appearing, on the contrary, less deep."

The inaccuracies in Lindley and Hutton's figure, to which I have previously alluded, are sufficient to justify Stur in describing his plant as a new species.

In the second part of his 'Culm-Flora,' the author removes this fern from *Sphenopteris*, and places it in his new genus, *Calymmotheca*, the chief character of which is the many-valved sporangium—one of his species (*Calymmotheca minor*) in fact being, as already pointed out by Mr. C. W. Peach, probably a small specimen of *Staphylopteris Peachii*, Balfour*.

As the fruit of *Sphenopteris crassa* is unknown, there is no evidence that it belongs to the genus *Calymmotheca*, Stur; hence I retain it in the genus *Sphenopteris*.

From the examination of specimens of *Sphenopteris crassa*, L. & H., which have come under my notice, I would propose the following description of the species :—

Sphenopteris crassa, L. & H.

Main axis dichotomous, and marked with small transverse scale-scars. Frond tripinnate (?); pinnæ alternate, linear lanceolate; pinnules alternate, those towards the lower portion of the frond cyclopteroid and sessile, more or less deeply lacinate, the upper pinnules rhomboidal, broadest towards their centre, and narrowing into a short stalk at their basal extremity, apex truncate, margins more or less deeply notched; veins springing from the base of the pinnule and extending to the margins, numerous and frequently dichotomizing.

Position and Localities. From the Calciferos Sandstone series: Burdiehouse, near Edinburgh; Straiton Brickworks, Loanhead (*Mr. J. Gibson*); and Kilmundy Limestone Quarry, near Burntisland (collected by *Mr. J. Bennie*, fossil-collector to the Geological Survey of Scotland).

My thanks are due to Prof. Archer, for permission to describe and figure the specimen in the "Hugh-Miller Collection," Museum of Science and Art, Edinburgh, and to Prof. A. Geikie, Director General of the Geological Survey of Great Britain, and Prof. J. Geikie, of the University of Edinburgh, for the use of the specimens in their custody.

* Peach, "On Fossil Plants from the Calciferous Sandstone around Edinburgh," Trans. Bot. Soc. vol. xiii. 1877.

EXPLANATION OF PLATE IV.

Sphenopteris crassa, L. & H.

Fig. 1. Type specimen of the species. From Burdiehouse, near Edinburgh.

Fig. 2. Larger of the two specimens in the "Hugh-Miller Collection," Museum of Science and Art, Edinburgh; also from Burdiehouse.

XIV.—On some new Species of Curculionidæ from Ceylon.
By FRANCIS P. PASCOE.

THE Curculionidæ described in this paper were collected by Mr. George Lewis during a recent visit of five months to Ceylon. His captures amounted to over 10,000 specimens, including 1200 species *. No such collection has been made before; indeed, I believe, since Sir Emerson Tennent's time, only a few stray specimens have ever reached this country. Notwithstanding the rich vegetation, the insect-fauna of Ceylon is rather disappointing so far as large and gaily-coloured species are concerned; but some of its apparently peculiar forms are unusually interesting. The Curculionidæ number about 70 species; of these I have only here described the duplicates. They were, as will be seen further on, almost entirely collected in the mountain-district of Dikoya, at altitudes varying from 3800 to 4200 feet. Galle and Colombo, lying on the shore, are "rich in species." Mr. Lewis only spent a week in one and about three weeks in the other; but very few Curculionidæ seem to have been met with. The following is a list of the species here described:—

APIONINÆ.	ALCIDINÆ.
Apion maculipes.	Alcides Lewisii.
— æneipenne.	— ruptus.
	— curialis.
	— guttulatus.
	— suspensus.
	— argutor.
ATTELABINÆ.	ZYGOPINÆ.
Apoderus pulchellus.	Podalia, n. g.
	— mimica.
RHINOMACERINÆ.	
Rhynchites clavatus.	
Eugnamptus marginatus.	

* For an interesting account of the visit, see Trans. Entom. Soc. 1882, pp. 475-483.



Kidston, Robert. 1883. "XIII.—On *Sphenopteris crassa* (Lindley and Hutton)." *The Annals and magazine of natural history; zoology, botany, and geology* 11, 117–121. <https://doi.org/10.1080/00222938309459106>.

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DOI: <https://doi.org/10.1080/00222938309459106>

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