longitudinally by oblique striæ which diverge from the hinge to the margin. There is a strongly developed flexuosity at the anterior extremity which terminates in rather an acute edge. Hinge as in *V. Pullastra*. Breadth $1\frac{5}{8}$ inch; length 1 inch.

A single valve of this size occurred to me at Lerwick; a small live specimen at Deal Voe in the Shetlands; and a still smaller specimen was found by Mr. Barlee in Loch Fyne.

It has a considerable resemblance to *V. Pullastra*, but it differs in the peculiar obliquity of its form as well as its greater breadth and other particulars.

Astarte crebricostata, Forbes in Ann. Nat. Hist. vol. xix. p. 98. Skye, but only single valves were found.

Many specimens of *Astarte* were extremely difficult, if possible, to be distinguished specifically, and the variety of form in this genus is very puzzling. I am quite satisfied that the crenulation of the margin is not a specifically distinctive character; nor the number of ribs, nor the form, much less the size or colour. With respect to size, I may observe that specimens of *A. compressa* measured more than three-quarters of an inch in diameter.

Psammobia (?) *plicata*. *Mytilus plicatus*, Mont. Suppl. p. 70; Laskey in Wern. Mem. pl. 8. f. 2. Two single valves of this curious shell were found by us in fifty fathoms off Skye. Mr. Hanley had previously taken it at Ryde.

It has much the aspect of a *Panopæa*.

Psammobia costulata.

Psammobia strigillata. Skye.

Corbula (?) *granulata*, Nyst, Belg. Foss. p. 71. pl. 2. f. 6. *Tellina polygona*, Mont.? I dredged one (live) specimen of this curious shell in fifty fathoms off Skye.

Neæra abbreviata, Forbes. Between seventy and eighty specimens of this shell were procured by Mr. Barlee in Loch Fyne.

Many other extremely rare and interesting shells occurred, but I have already I fear trespassed too long on the columns of this month's 'Annals.'

XXXIV.—*Notes on the genus of Insects* Omias, *with descriptions of new species*. By John Walton, F.L.S.

Fam. CURCULIONIDÆ.

Genus Omias, *Germ. olim, Schönh., Latr., Dej., Sturm.*
Thylacites (*Brachysomus*), Schönh. olim.
Otiorhynchus, Brachysomus, Steph.

Char. Gen. "Antennæ moderate, either slight or rather stout; scape generally longer than the head, more or less curved, towards the apex incrassated; first and second joints of the funi-

culus short, obconic, the first being somewhat longer and thicker than the second, 3—7 nodose; club ovate. Rostrum short, narrower than the head, having generally a somewhat triangular impression above towards the apex, in some a little flat; the scrobes short, subcurvate. Eyes rounded, convex, small. Thorax either short or oblong, truncated at the base and apex, slightly rounded at the sides, a little narrowest in front. Scutellum in most specimens none, in a few triangular, minute. Elytra ample, either short-ovate or oblong-ovate, very convex above."

"*Observ.* Body either subrotundate or subovate, apterous; of very small size." Transcribed from Schönherr.

1. *Omias hirsutulus*, Fab., Marsh., Gyll., Germ., Schönh.
Brachysomus hirsutulus, Steph.

Not very abundant: found in whitethorn hedges on a gravelly or chalky soil at Gravesend, Shirley Common, and Mickleham, in May and June.

2. *O. Bohemani*, Schönh.

Ovate, nigro-piceous, shining, and densely clothed with erect cinereous hairs. Head small, narrow, black, sparingly pubescent, the vertex smooth, the front closely and minutely punctured; eyes small, round, moderately prominent and black; rostrum narrower than the head and scarcely longer, stout, plane above, black, closely and finely punctured, and distinctly canaliculated. Antennæ inserted near the apex of the rostrum, and reaching beyond the base of the thorax, rather slender, pale testaceous, and sparingly pubescent, the clava long-ovate, acuminated. Thorax broader in the middle than long, more narrowed anteriorly than posteriorly, moderately rounded at the sides, very convex above, piceous-black, shining, densely pubescent, closely and very minutely punctured. Scutellum indistinct. Elytra ample, globose-ovate, very convex above, piceous, deeply punctate-striate, the interstices moderately convex, smooth, and thickly clothed with erect cinereous hairs. Legs moderate, pale testaceous and pubescent. Length $1\frac{2}{3}$ line.

Of this very distinct insect, which is new to the British fauna, I possess foreign examples from Schönherr.

Mr. T. V. Wollaston captured a specimen by brushing amongst grass in a meadow near Stamford, and liberally presented it to me: received from York, Newcastle and Chesterfield by Mr. S. Stevens, who kindly supplied my cabinet with specimens.

3. *O. brunnipes*, Oliv., Steph. Manual.
Curc. piceus, Marsh., Kirb. MSS.
Otior. piceus, Germ., Steph. Illust.

This insect, with its numerous varieties of form, size and co-

lour, may be distinguished as being nearly glabrous and very shining; as having the thorax subglobose, coarsely and remotely punctured; the scutellum distinct, triangular, and the elytra globose-ovate.

I possess authentic specimens of *O. mollicomus* of Ahr. from Germar, and of *O. pellucidus* from Chevrolat, which are distinct species; and although closely allied to *O. brunnipes*, they may readily be distinguished from that insect by having the elytra oblong-ovate, and being clothed with hairs. Mr. Stephens, in his 'Manual of British Coleoptera,' has introduced the above-named two species as indigenous, but I have not hitherto observed a specimen of either in any collection.

Common in hedges in sandy districts in June and July.

4. *Omias sulcifrons*, Schönh.

Oblong, black, shining, and very sparingly clothed with short, scattered, white pubescence. Head large, very broad, the vertex convex, closely punctulated, the front deeply furrowed to the apex of the rostrum; eyes small, rotundate, very prominent; rostrum scarcely as long as the head, and but a little narrower, and thickly punctured. Antennæ rather slender, rufo-ferruginous, the clava long-ovate and very acute. Thorax a little broader in the middle than long, narrowed anteriorly, moderately dilated and rounded at the sides, rather convex above, coarsely punctured towards the sides, and remotely and irregularly on the disk. Scutellum small, triangular and distinct. Elytra oblong-ovate, nearly glabrous, rather wider at the base than the thorax, the shoulders rounded and not elevated, somewhat dilated at the sides, moderately convex above, punctate-striate, the interstices plane and rather smooth. Legs rufo-ferruginous, shining and pubescent. Length $1\frac{1}{2}$—$1\frac{2}{3}$ line.

Readily recognised by its broad head and deep sulci, and by its elongate form.

This insect, which is new to this country, was unknown to Schönherr until I sent a specimen.

First discovered in Dalmeny Park, Scotland, by Mr. R. N. Greville in August; and subsequently found at Mount Edgecomb, Devonshire, in May, by Mr. T. V. Wollaston; to both of these gentlemen I am indebted for specimens.

It is necessary to notice that the insect included in the genus *Cathormiocerus* (*Trachyphlœus olim*) of Schönherr, and described under the name of *C. socius*, with the addition of "Patria Anglia. Mus. Dom. Walton," I gave to Schönherr; it is the only specimen I have seen, and I think it came into my possession with the collection of the late Mr. Millard of Bristol. Of its history and locality I am equally ignorant: the genus only contains two spe-

cies, and *C. horrens*, an exotic insect, is the type; under these circumstances I consider that it is sufficient to refer to the elaborate generic and specific characters given by Schönherr rather than to transcribe them*.

XXXV.—*On the Development of the* Lycopodiaceæ.

By Karl Müller†.

[With five Plates.]

[Concluded from p. 249.]

c. The morphological import of the spore. Up to the present time it remains doubtful what purpose is served by the antheridium-spore. One person maintains this opinion, another that. This author declares that he has seen it germinate, the other that he has never been able so to do. Kaulfuss (Das Wesen der Farrenkräuter, &c. Leipz. 1827) relates (p. 23) that, first, Fox sowed *Lycopodium Selago*, then Lindsay *Lycop. cernuum* with success, and that *Lycopodium clavatum* had sprung up in abundance with Willdenow. With himself it did not succeed, yet the garden-inspector Otto, at Berlin, raised *Lycop. pygmæum*, Kaulf., from seed, for several years in succession. The last case however is easily explicable, since the *Lyc. pygmæum* which I know by this name from the hands of the exact Kunze, possesses oophoridia also; and that these germinate is known. Here therefore we cannot place full dependence even on the assurance of such an authority as Willdenow.

An observation of Göppert's‡ however is of far greater importance from the fact, that it does not merely amount to a confirmation; this was beholding young plants produced from the antheridium-spores of the same *Lyc. denticulatum*, the development of which we have above become acquainted with. His observations were first published in the 'Uebersicht der Arbeiten und Veränderungen der schlesischen Gesellschaft für vaterländische Kultur,' in the years 1841 and 1845. In the latter the author has also, although imperfectly, furnished illustrations to it. The observations were next published in No. 7 of the literary notices in the 'Flora,' p. 110, and lastly by Röper (in the 'Flora Mecklenburg's,' i. p. 126). The passage in question is here transcribed *verbatim* for those who may not have access to any of these books:—

* Syn. Ins. vii. p. 120, 121.

† From the 'Botanische Zeitung,' Oct. 2, 1846. Translated by Arthur Henfrey, F.L.S. &c.

‡ I have only become acquainted with it since the second section was printed.