

NOVEMBER 10, 1864.

MR. E. A. WÜNSCH moved "That a standing committee be appointed to collect information as to the relative level of the glacial shell beds and the present sea level; also, to concert measures for placing marks on various portions of the sea-shore and in river beds, for the purpose of ascertaining whether any variations in the present relative level of sea and land are taking place, and also for the purpose of ascertaining at what rate sea-shores are eroded and river-beds worn down, and to take any other measures they may deem expedient for collecting data to serve as a basis for future inquiries into recent geology."—Agreed.

Dr. T. B. GRIERSON, Thornhill, Dumfriess-shire, was elected a Corresponding Member of the Society.

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II. *Provisional notice of a new CHITON, and a new species of CHITONELLUS, from the CARBONIFEROUS ROCKS of WESTERN SCOTLAND.* By Mr. JOHN YOUNG; with description by Mr. JAMES W. KIRKBY.

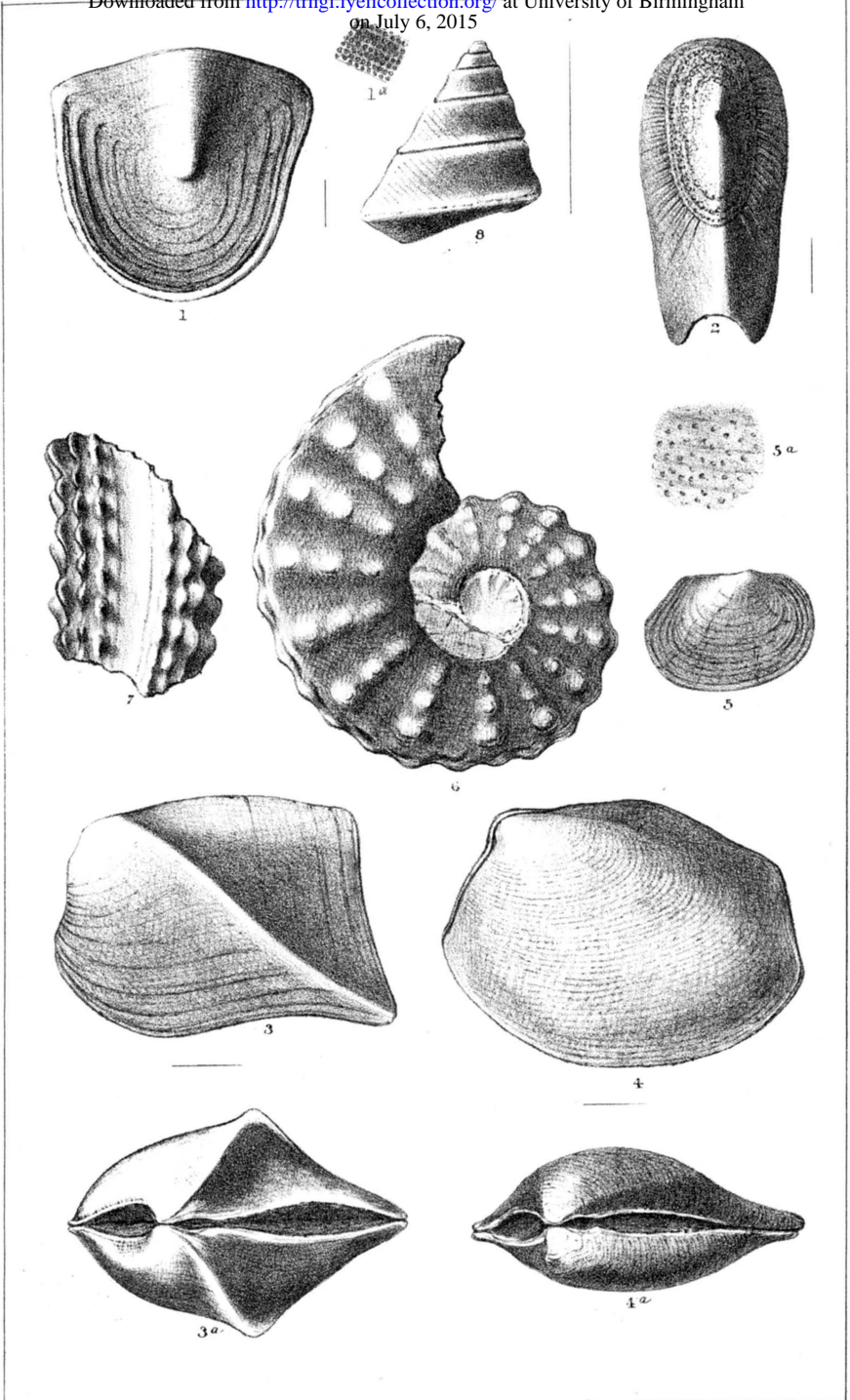
THE discovery of the plates of various species of *Chitonidæ* in the Carboniferous strata of England and Ireland, as well as on the Continent, within the last few years, is a point of considerable interest to Palæontologists engaged in the investigation of the fossil remains of that period.

The plates of *Chiton* and *Chitonellus* which form the subject of the present notice, are, so far as I am aware, the first that have been recorded from our Scottish Carboniferous rocks, in which, however, they seem to be very rare, three species only having as yet been found; but diligent research will, doubtless, bring others to light.

*Chiton humilis*, is found in the Robroyston beds, north-east of Glasgow, in shale, overlying one of the Upper limestones, at about 300 fathoms below the "Ell" coal of the Lanarkshire series. Only one perfect plate, and fragments of one or two others have

EXPLANATION OF PLATE I. (page 13.)

- Fig. 1 *Chiton humilis*, Kirkby: posterior plate, enlarged. Robroyston.  
1a ,, ,, portion of the surface, magnified.  
2 *Chitonellus Youngianus*, Kirkby: plate, enlarged. Craigenglen.  
3 *Cypricardia acuticarinata*, Armstrong: left valve, enlarged. Orchard.  
3a ,, ,, view of both valves.  
4 *Cypricardia crebricostata*, Armstrong: left valve, enlarged. Wester-  
house.  
4a ,, ,, view of both valves.  
5 *Estheria punctatella*, Jones: carapace valve, natural size. Arden  
Quarry.  
5a ,, ,, portion of the surface, magnified.  
6 *Nautilus nodiferus*, Armstrong: slightly reduced. Arden Quarry.  
7 ,, ,, portion of the outer whorl, with view of channel  
on the back.  
8 *Pleurotomaria Youngiana*, Armstrong: natural size. Craigenglen.



been obtained. They are associated with Crinoidea and various genera of fossils of the Carboniferous Limestone, which are often found in these beds in a fine state of preservation.

The other species from the marine shales of Craigenlen, Campsie, belongs to the sub-genus *Chitonellus*. Only two plates have been found: the first was in the collection of my friend, the late Alexander Cowan, of Campsie, who obtained it from the same beds, but the specimen was unfortunately lost. They occur in shale, along with numerous other genera fossils of the Carboniferous Limestone. The position of the beds is under the Main limestone of the Campsie district.

I am indebted for the following description of the specimens to Mr. J. W. Kirkby, of Sunderland, a Palæontologist well acquainted with the various species of Palæozoic Chitons, and to whom I had much pleasure in submitting them for determination:—

CHITON HUMILIS, SP. NOV. PL. 1, FIG. 1.

The posterior plate of this species only is known. It is elongately semi-oval, depressed, about  $\frac{1}{4}$  inch long, and is as wide as long. The apical ridge is flatly rounded, arched medianly, and occupies half the length of the plate; the apex is central, and depressed. The surface is rather coarsely granulated, and marked in front with several prominent, rounded incremental wrinkles, the last of which forms a marginal rim.

*Chiton humilis* has some resemblance to *C. Burrowianus*, of the Mountain Limestone of Yorkshire. It differs from that species—so far as both are known from single posterior plates—in having the plates longer compared with their width, in being more depressed, in having the surface strongly granulated and concentrically ridged, and in the central position of the apex of the posterior plate. It would appear to have been of the elongate type of *Chiton*, other species,\* of which are already recorded from Carboniferous strata.

*Loc.* Robroyston north-east of Glasgow, on shale heaps, at old limestone quarries.

CHITONELLUS YOUNGIANUS, SP. NOV. PL. 1, FIG. 2.

Another plate found by Mr. Young in the marine shales of Craigenlen, undoubtedly belongs to the genus *Chitonellus*. It is beautifully preserved, and shows a portion of the plate that has

\*For example, *Chiton priscus*, Münster; and *Chiton Thomondiensis*, Baily.

been inserted in the mantle of the mollusc as distinctly as the plates of the recent *Chitonellus fasciatus*.

The plate appears to be an intermediate one, from near the anterior end. Its length is  $\frac{9}{32}$  inch; its breadth,  $\frac{4}{32}$  inch. In general outline it is nearly oblong; it is sharply ridged medianly from the posterior margin to the apex, which is placed about one-fifth from the anterior margin. The portion of the plate that has been exposed is slightly raised, and is of a darker colour than the rest of the plate; it is anterior in position, and is rather acutely ovate in outline, with the acute extremity behind; the surface is coarsely granulated, the granulations becoming stronger as they approach the margin. The rest of the plate, or portion that has been inserted in the mantle, bounds the whole of the portion just described; it is narrow in front and very wide behind, and has its lateral, and part of its posterior areas marked with coarse striæ, which radiate, as it were, from the apex; the posterior margin is deeply excavated centrally, so as to give a forked appearance to the plate behind.

There are other Palæozoic Chitons, which have been referred to the genus *Chitonellus*, such as the *Chitonellus Barrandeanus* De Ryckholt, of the Carboniferous rocks of Belgium, the *Chitonellus antiquus*, Howse, and *Chitonellus Hancockianus*, Kirkby, of the Permian strata of Durham, but I do not know of any that appear to so nearly approach the recent *Chitonelli* as the one under notice, which I have great satisfaction in naming after my friend, Mr. John Young.

J. W. K.

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### III. Mr. JAMES THOMSON exhibited—

A plate of a *Chiton* from Carboniferous shale on the banks of the Avon, near Strathaven, agreeing very closely in form, and in its granulated markings with *Chiton gemmatus*, De Koninck, a species not previously recorded from British strata: *Camarophoria globulina*, Phillips, from Carboniferous Limestone, Brockley, near Lesmahagow; *Lingula Thomsonii*, Davidson, sp. nov., from the Carboniferous Limestone of Tirfergus Glen, Campbeltown; and the following species of bivalve *Entomostraca*, from the latter locality, named provisionally by Messrs. T. Rupert Jones and J. W. Kirkby:—*Kirkbya plicata*, *Eichwaldia Scotica*, *Cythere? obtusa*.