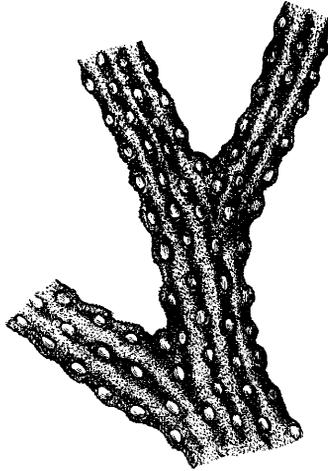


35. *On the OCCURRENCE of a NEW SPECIES of PHYLLOPORA in the PERMIAN LIMESTONE.* By GEORGE W. SHRUBSOLE, Esq., F.G.S. (Read April 26, 1882.)

AMONG some Permian Polyzoa which Mr. Howse, of Newcastle, entrusted to me for examination was one labelled "*Fenestella ramosa*." This I at once saw was not a *Fenestella*, but a *Phyllopora*, King, a new and, as yet, undescribed species.

The genus *Phyllopora* was rightly founded by King * to receive the Permian and Silurian species of Polyzoa which, prior to that time, had been referred to *Retepora*. In accordance with this view Mr. Vine has recently shown that among the ancient Polyzoa, so far as at present ascertained, we have none of the peculiarities of cell-growth which are characteristic of the recent *Reteporæ* †; in short, that we have no Retepores among the Palæozoic Polyzoa. All such so-called Retepores should be now assigned to *Phyllopora*, King. The genus *Phyllopora* has as yet been but imperfectly worked; its rarity in the more recent and its imperfect preservation in the older rocks go far to account for this. It is of interest as one of the earliest of our Palæozoic Polyzoa.

Phyllopora multipora, from the Permian Limestone near Sunderland. (From a drawing by Rochfort Connor, Esq., from a specimen in the Newcastle Museum of Natural History.)



A portion of the zoarium, showing the arrangement of the cells, enlarged 25 diameters.

* Permian Foss. England, p. 40.

† Brit. Assoc. Rep. on Fossil Polyzoa, p. 3.

PHYLLOPORA MULTIPORA, sp. nov.

Spec. char. Zoarium an open network of anastomosing branches; base solid, forming an infundibuliform or folded expansion; branches regular, flattened, dichotomous, anastomosing; on poriferous face a wavy ridge between the longitudinal lines of cells; reverse face smooth; fenestræ ovate, with pointed ends, $1\frac{1}{2}$ line in length; zoecia immersed, small, prominent, and projected when not worn down, twice their diameter apart, arranged in longitudinal lines having an oblique direction. Six or seven cells in one line longitudinally, and four or five in one line transversely.

Loc. In a Permian Limestone quarry, Hylton Castle, near Sunderland.

Obs. The present species may be readily distinguished from the other Permian Polyzoa by the minuteness of its cells. Hence, in a given space, *Phyllopora multipora* will be found by comparison with all other species to have double the number of cells. From allied forms it may be known by the ovate fenestræ.

There are probably two distinct species, or types of species, of *Phyllopora*, ranging from the Lower Silurian to the Permian era. The type of each species is most distinct and persistent. The zoarium of the one may best be described as solid and massive, having circular apertures or fenestræ, in which the branch is lost in the solidity of the zoarium. In the other type the zoarium is a network in which the branch is seen to interlace and coalesce, giving rise to fenestræ either square, ovate, or lozenge-shaped, more frequently the latter. In both types there is an absence of dissepiments, and the whole of the poriferous face is crowded with the characteristic small cell-apertures.

Notwithstanding the little work that has been done in connexion with *Phyllopora*, there is yet evidence forthcoming of the existence of the types I have mentioned. In the Lower Silurian rocks *Phyllopora* is most abundant. There are at least two distinct species, if not more. The preservation of the remains in these beds is most unfavourable for exact work, occurring, as they often do, in coarse ash or shale and distorted by cleavage.

From the Devonian rocks Phillips figures the *Phyllopora* with circular fenestræ as *Retepora prisca**, that with lozenge-shaped fenestræ as *Fenestella arthritica* †, and that with square fenestræ as *Gorgonia ripisteria* ‡. As might be expected, there is considerable confusion of species in Phillips's delineation of the Devonian Polyzoa. Two or more varieties are included under one head. A revision of the Devonian Polyzoa from a palæontological point of view is very desirable, for since Phillips's work, forty years ago, they have remained untouched. The difficulty is to procure the material necessary for the purpose.

In the Carboniferous rocks *Phyllopora* is comparatively rare in

* Phillips, Pal. Foss. pl. xiii. fig. c.

† Ibid. pl. xii. fig. e.

‡ Ibid. pl. xi. fig. b.

the British area. It has been seldom found in England. I have one example from Derbyshire. Mr. John Young informs me that it has not been found in Scotland. Prof. M'Coy, however, figures it among the Irish Carboniferous fossils.

Good examples of the several types of *Phyllopora* will be found figured in the works of Prof. de Koninck, Dr. Toula, and Mr. Prout. Coming to Permian times, we have in *P. Ehrenbergii* * the form with circular meshes. The new species which I have described supplies the other type.

* King's Perm. Foss. p. 43.