

NOTES ON CHAETETES MILLEPORACEUS M. E. H.

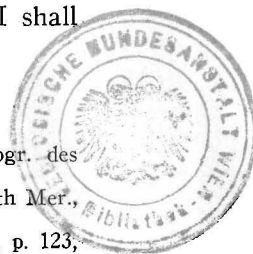
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(Communicated by Rudolf Ruedemann.)

In describing a new species of *Chaetetes* from the Carboniferous beds of Serbia I have studied the *Chaetetes milleporaceus* M. E. H. from the Carboniferous of the United States. The collection of the Geological Department of the University of Graz possesses a very well-preserved specimen from the Coal Measures of Peoria County, Illinois (Fig. 4). I shall briefly describe it.

Chaetetes milleporaceus M. E. H.

1851. *Chaetetes milleporaceus* Milne Edwards and Haime, Monogr. des polyp. foss. du terrain pal. p. 272.
1876. *Chaetetes milleporaceus* White, U. S. Geogr. Geol. Surv. 100th Mer., Rept. Vol., p. 98, pl. 6, fig. 2a.
1894. *Chaetetes milleporaceus* Keyes, Missouri Geol. Surv., vol. 4, p. 123, pl. 14, fig. 12a, b.
1900. *Chaetetes milleporaceus* Beede, Univ. Geol. Surv. Kansas, vol. 6, p. 25, pl. 2, fig. 11, 11b.
1903. *Chaetetes milleporaceus* Girty, U. S. Geol. Surv., Prof. Paper 16, p. 328.



The corallum is silicified and has the following size: length—16 cm.; width—10 cm.; height—7 cm.

It is only a fragment of a very large specimen. Girty and Keyes have noted that the corallum is massive in its growth and attains a large size.

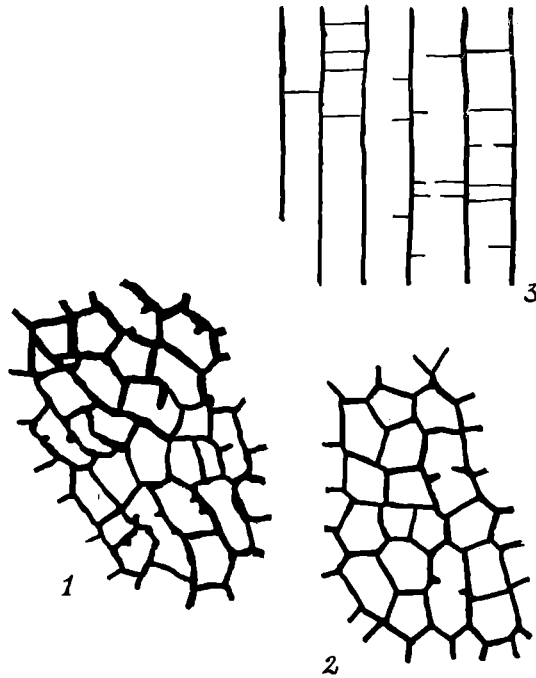
The corallum is made up of fine, closely arranged corallites. Keyes tells us that the corallites have a diameter of one-fourth to one-third of a millimeter. Girty states that the cells reach rarely 0.5 mm. in any diameter and that they are usually of a considerably smaller size. I have measured the size of corallites in the thin section with the micrometer:

0.33 : 0.77	
0.44 : 0.77	Corallites with pseudoseptum
0.44 : 0.77	
0.33 : 0.50	
0.28 : 0.39	
0.39 : 0.44	Corallites without pseudoseptum
0.22 : 0.28	
0.22 : 0.33	
0.39 : 0.61	

The corallites have the same size throughout the entire length.

The thickness of the walls is a little different, ranging from 0.05 to 0.10 mm.

The transversal thin-section shows that the corallites have an infinite variety in the matter of shape (Figs. 1, 2). Many have polygonal sides, others have projecting walls. The latter are the so-called pseudosepta, which have mostly the shape of a slender lamina. The diagrams of Keyes and Beede show the irregularly polygonal contours of the corallites without pseudosepta. I have drawn the diagram of two parts of the same



Figs. 1 and 2. Transverse thin-sections of *Chaetetes milleporaceus*, x 10.
Fig. 3. Longitudinal section of *Chaetetes milleporaceus*, x 10.

transversal thin-section (Figs. 1, 2). One diagram shows a portion with few pseudosepta, but in the other portion they are numerous.

The mode of occurrence of tabulae is very interesting. Keyes shows a longitudinal thin section with many tabulae; the distance between the tabulae is usually smaller than the diameter of the corallites. Girty has observed that the tabulae show a great variation in the intervals at which they occur. In some specimens they are regularly distributed and about 0.25 mm. apart. These specimens are, so to speak, the normal

type of *Chaetetes milleporaceus*. Girty says: "In others they are at one place close together, at another quite distant, varying largely in the interval of occurrence and in still others they cannot be detected at all." The longitudinal thin section which I have drawn (Fig. 3) is such a type. It shows that the neighboring corallites are very different with regard to the presence or absence of tabulae. It seems to be very important that there are corallites in which the tabulae are partially



Fig. 4. Exterior view of corallum of *Chaetetes milleporaceus*. Natural size.

missing. In this case the tabulae are obliterated by mineralizing agencies. This is clear, for the tabulae are thinner than the walls which are always preserved. The absence of tabulae does not seem to be a real structure variation.

The walls are thin in comparison with the Carboniferous species of *Chaetetes* which do not belong to the group of *Chaetetes radians*.

Chaetetes milleporaceus is very similar to the *Chaetetes radians* from the Moscovian of Russia. I doubt if it will be possible to consider the two forms as different species.

I shall briefly describe *Chaetetes radians*: The corallites are more or less polygonal. Their diameter ranges from 0.25 to 0.55 mm. (most frequently 0.35 to 0.50). The walls are thin in comparison with the diameter of the corallites. They have only a thickness of 0.04 to 0.08 mm. The tabulae are rare and irregularly distributed; sometimes they are at one place, i. e., in one zone, close together. Pseudosepta are very rare, but they are always present. The structure of the walls is the same as in *Chaetetes milleporaceus*.

The paleontologist, who monographs the genus *Chaetetes*, will have to decide upon the relation of *Chaetetes radians* and *Chaetetes milleporaceus*.

Chaetetes milleporaceus, *Chaetetes radians* Fischer, *Chaetetes septosus* Flemming, and *Chaetetes orientalis* Stuckenberg, show the same structure: the polygonal corallites, the same manner of tabulae, the thin walls.

There is another group of *Chaetetes*.¹ This second group has also polygonal corallites which are sometimes rounded. The tabulae are distributed irregularly or in zones. Pseudosepta are present, but they are mostly broad coins. The walls, however, are very thick in comparison with the diameter of the corallites.

The view of the transverse thin section of the second group is *very* different from that of the group of *Chaetetes radians*.

Specimens of the second group of *Chaetetes* are known from the Moscovian of Russia and from the Lower Carboniferous of Serbia. It is remarkable that the Jurassic species of *Chaetetes*² belong to the second group. It is, indeed, possible that the four cited Mesozoic *Chaetetes* belong to the genus *Baumeia*, which Peterhans³ has established. *Baumeia* has the same structure as *Chaetetes*, but propagation is by gemmation and division while *Chaetetes* has only propagation by division. It is only possible to state what manner of propagation is present, if the paleontologist has access to a large amount of material. Unfortunately specimens of *Chaetetes* are very rare in Europe.

¹ Peterhans, Des Chaetetedides du Lias et du Dogger. *Eclogae Geologicae Helvetiae*, XXII, 1929, p. 114.

² *Chaetetes zignoi* d'Achiardi, *Chaetetes beneckeii* Haug, *Chaetetes wahneri* Heritsch, *Chaetetes geveri* Heritsch.

³ Peterhans, *Eclogae Geologicae Helvetiae*, XX, 1927, p. 389.