This Antarctic Diatom differs from the *Möllería cornuta* of Cleve in the following respects :—(1.) The greater size of the frustules; (2.) the greater shortness of the terminal processes; (3.) the inferior degree of development of the connecting zone; and (4.) the bipartite condition of the connecting zone; the costæ, moreover, of the two hoops of adjoining valves often diverge more or less—a peculiarity which has not been observed in Cleve's species. Although taken singly, these differences probably are not of very great importance; it cannot be doubted that the combination of all of them is sufficient to warrant the establishment of this new species.

Hemiaulus, Ehrenb.

Seeing that the frustules of this genus are provided with two processes terminated by a thorn or claw, we are led to conjecture, in opposition to the assertion made by Pritchard,[1] that the frustules exist in a concatenate or seriate form, since the spine can only be interpreted as a connecting organ. This conjecture I have been able to verify more than once by observing two or more frustules linked together, and in such a manner that their terminal spines constantly alternate with one another. Thus of the two spines of one valve, one is superposed to the corresponding spine of the adjoining frustule, while the other is covered by its corresponding spine. This peculiar method of union may also be studied in the genus *Chætoceros*, but its signification is by no means easy to understand. The concatenation of *Hemiaulus* was observed, and accurately described, by Heiberg, in his work entitled Conspectus criticus Diatomacearum Danicarum, plate i. a.

In *Hemiaulus*, as in *Chætoceros* and *Cocconeis*, the terminal valve differs somewhat from the others—a circumstance which must be carefully borne in mind in order not to multiply species unduly. The overlooking of this fact explains why, in Pritchard's History of the Infusoria, the different condition of the processes, as elongated in one valve and truncated in the other, is given as a specific character of *Hemiaulus antarcticus*,[2] Ehrenb. But the processes of the terminal valve are truncated in all the species, since the spine becomes superfluous where union with another frustule does not take place.

Hemiaulus, sp. ? (Plate XXI. figs. 9 and 13.)

The two valves of *Hemiaulus* here figured must be regarded as terminal, but their specific determination must for the present remain doubtful. The only circumstance—apart from the more crowded condition of the granules—which would seem to indicate that the valve represented in fig. 13 belongs to a distinct species from that shown in fig. 9, is the existence of a well-defined granule, surmounting its two obtuse terminal processes, instead of the simple spine or process which is peculiar to the latter.

[1] Pritchard, *op. cit.*, p. 851.

[2] Ehrenberg, Mikrogeologie, pl. xxxv. A 22, fig. 15; Pritchard, *op. cit.*, pl. xi. fig. 54.