

cognisable in the frustule figured by O'Meara, but the alternation of the granules of the two new valves which cause the latter to possess an apparent indented line of suturation is not here visible.

The next three frustules of the series have gone on developing after fission, and now present two symmetrically convex valves, which are again ready to divide. The fifth, which is probably younger than the second, third, or fourth, as its cingulum is less developed, is obviously advancing towards the same mature state. The sixth, on the other hand, is evidently imperfect, having originated from that immediately preceding it. Its abortive condition presents a phenomenon similar to what not unfrequently occurs in the almond and other fruits or seeds, where one part may develop at the expense of the others. The remaining frustules, again, show somewhat advanced phases, recalling the appearances presented by the second, third, and fourth.

From the developmental stages here seen, great interest attaches to this figure, but it is to be carefully observed that the granules, instead of alternating, are arranged in continuous and parallel series along the lines of division.

At present even the generic determination of these Diatoms must remain uncertain until the form of the valve from its valval aspect has been fully studied.

Rhaphoneis, Ehrenb.

Authors are not agreed as to the definition of this genus. Pritchard,¹ among others, limits the name to those navicular forms in which the centre is unprovided with noduli and transversely directed lines, whilst Rabenhorst² admits those forms that possess costules. Although it is desirable to limit the number of species in the various genera as far as possible in order to facilitate study, it is better in the present case to follow the opinion of Rabenhorst, especially as the species are not very numerous. The following is the definition of the genus as given by that author:—"Frustula libera vel stipitata, quadrangula simplicia navicularia, non conjuncta, fronte late lanceolata vel ovata, nodulis nullis, striis vel costis transversis, ubi adsunt, vitta vel area longitudinali interruptis."

Rhaphoneis mammalis, n. sp. (Plate XXVI. fig. 3.)

Elliptico lanceolata; apicibus productis mammiformibus; costis raris radiantibus; vitta sublineari medio interrupta. Ad portum Thaiti.

This beautiful frustule was found in an interesting collection from the port of Tahiti. Its form is elliptico-lanceolate, and its extremities are mammiform, while its transverse and longitudinal axes are in the proportion of two to three. Its widely disposed costules are radiating and interrupted in the middle by a narrow lineal smooth area.

This species has been named from the appearance presented by its extremities.

¹ *Op. cit.*, p. 791.

² *Flora Europæa Algarum Aquæ dulcis et submarinæ*, sect. 1, p. 125.