interior of the frustule, as maintained by Kützing, but that, on the contrary, the walls are thick at this place, so that the general opinion that in Diatoms the siliceous nodules are more or less solid protuberances is here confirmed.

The size of this new species, which has been named in honour of Mr John Murray, the Editor of the Challenger Reports, is not less than 200 μ.

Glyphodesmis challengerensis, n. sp. (Plate XVIII. fig. 13.)

Magna, medio constricta; apicibus productis cuneato-rotundatis; pulvinulis terminalibus lævibus ellipticis; nodulo centrali erectiore in area lævi elliptica; punctulis quadrato ordine dispositis; linea axialis in valva latior. Ad mare Philippinarum.

This frustule, which is represented in its valval and zonal aspects, possesses small terminal cushions and a central nodule which are decidedly elevated. The central nodule is not a mere granule like that of the Naviculaceæ, but exists in the form of a large elevated process with a flattened top. This nodule and the terminal cushions are the points by which the adjoining frustules of a series are united to each other.

The valve presents a median constriction and two lateral protuberances. The extremities are prolonged but rounded. The granules, which are punctiform, are disposed in a quadrate manner in parallel rows, and the longitudinal axis is represented by two rows of dots somewhat further apart and more prominent than those in the adjoining rows.

Glyphodesmis margaritacea, n. sp. (Plate XVIII. fig. 10.)

Valvis ellipticis; granulis distinctioribus quadrato ordine dispositis et transverse per plicas distinctis, ad apices et ad centrum areæ læves, in area centrali nodulum subobscurum. Ad Zebu, in mari Philippinarum.

This frustule, which is only represented in its valval aspect, possesses a very elegant elliptical form. The valve is ornamented with beautiful round granules disposed in a quadrate manner. It is crossed by transverse folds, and in its centre as well as at its extremities there are smooth areas which, however, are less clearly defined than in the two preceding species. In the central area the nodule is not prominent, and greatly resembles that of *Glyphodesmis eximia*, Grev., but the nature of the valvular sculpturing is quite distinct.

The frustule figured is of large dimensions.

Glyphodesmis (?) an *Dimeregramma* (?) sp. (?) (Plate XIX. fig. 10.)

This figure represents a series of small frustules seen in the zonal aspect, but, since the genera *Glyphodesmis* and *Dimeregramma* can be distinguished only when viewed in their valval aspects—the essential distinction being found in the presence of a central nodule