

extremities notably prolonged, and terminated by a well-defined elevation in the form of a process. Around the margin there is a line of sparsely disposed granules or denticules, and the surface of the valve is delicately granulated in a radiating and decussate manner, a few more prominent granules being irregularly disseminated over the same area. The large central convolute nodule is so arranged as to render the exact determination of its form impracticable.

The specific name which I have adopted is in honour of my friend, Mr Tulk, who has aided me in many ways with my work.

*Rutilaria edentula*, n. sp. (Plate XVIII. fig. 14.)

Forma grandiuscula, lanceolata; apicibus longe porrectis, rotundatis in elevatiorem partem terminantibus; denticulis partem centram cingentibus, hinc rariusculis, dein deficientibus; striis egerrime perspicuis, medio radiantibus; nodulo convuluto distinctiore. Ad insulas Philippinas.

This form was found among the Diatoms obtained in a sounding made at Station 211, in a depth of 2225 fathoms. It is much larger than the preceding, and is very different in outline and structural detail. It is lanceolate, but both extremities are much prolonged, and bear at their tips elevations which rise above the plane of the valve. The striation of the latter is extremely delicate in the central part, and can only be determined by the use of oblique light, and the exquisite homogeneous immersion objective of Zeiss. The marginal denticules are thicker than in *Rutilaria tulkii*, but they become more rare towards the extremities, and finally disappear. The central nodule is less prominent, and appears to be doubled up.

The specific name which has been applied is intended to recall the absence of marginal denticules at the extremities.

#### Melosira, Ag. (= *Gallionella*, Ehrenb.)

This genus was established by Agardh in 1824 for a series of frustules, having cylindrical, discoid, or globose outlines, and connected into cylindrical *Conferva*-like filaments, one or two lines passing round each frustule near the centre. Since the frustules are arranged in series, and assume somewhat the appearance of *Confervæ*, it is not surprising that, towards the end of the last century, O. F. Müller described, under the name of *Conferva armillaris*,<sup>1</sup> the *Melosira varians* of Agardh,<sup>2</sup> the siliceous nature of the walls not being then suspected.

The union of one frustule with another is either effected by means of convex surfaces or

<sup>1</sup> *Nov. Act. Holm.*, 1873, pl. iii. fig. 67. Rabenhorst places this frustule as a synonym under *Achnanthes longipes*, Ag. (*Flora Europæa Algarum*, p. 111, 1864).

<sup>2</sup> Ralfs, *Ann. and Mag.*, pl. ix. fig. 5; Rabenh., *Süssw. Diat.*, pl. ii. fig. 4; Smith, *Synop. Brit. Diat.*, vol. ii. p. 57, pl. li. fig. 332.