

are oval, thereby indicating that the costules are of different lengths. Such distinctions, however, cannot be viewed as having more than a mere varietal significance.

Melosira westii, W. Sm. (Plate XXI. fig. 16.)

This frustule was observed on the coast of Australia, near Sydney, in a sounding made at a depth of 950 fathoms; but it is to be noted that the valves, instead of having "truncated apices," as described by Smith,¹ are depressed, a slight hemispherical projection occurring in the centre of the depressed area. These minor differences, however, are not essential, but they may be well seen on comparing the figures on the present plate representing the valval and zonal aspects.

We now pass to those species that are provided with a double furrow, and have their zonal sides divided into three parts.

Melosira hyalina, n. sp. (Plate XXI. fig. 1.)

Frustulis cylindraceutis quadruplo longioribus, medio binis sulcis distinctis, apicibus hemisphericis; granulis imperspicuis; zona connectiva binatim junctis. In mari Pacifico meridionali.

Here each frustule is of cylindrical form, and is four times as long as it is broad. Two furrows occur towards the middle, and are placed at a distance from one another equal to the length of the transverse axis of the frustule. In the figure two frustules are seen to be united to one another by a common belt, and both are terminated by hemispherical surfaces. It is noteworthy, however, that the surface of junction between the adjoining frustules is flat. This curious circumstance is of little importance, and may probably be explained in the following manner. In the final stages of increase in size, the extremities are prevented from dilating by the resistance which is offered by the common belt which has already ceased to lengthen, so that lateral expansion occurs, and a flat septum is the result.

The prolonged cylindrical form of the frustule and the prominent hemispherical extremities are, however, of specific importance.

This interesting form was collected near the Pacific coast of South America in a depth of 2225 fathoms.

Melosira thaitiensis, n. sp. (Plate XXI. fig. 2.)

Cylindraceuta, triplo longior quam latior; binis sulcis medio signata; apicibus convexo-complanatis, exterius granulatis; ordine quadrato punctulatis. In portu Thaiti.

This Diatom, from the port of Tahiti, is composed of cylindrical frustules, which are three times as long as wide, and terminate in convex depressed extremities or surfaces of

¹ Synopsis of British Diatomaceæ, vol. ii. p. 59, pl. lii. fig. 333.