

The zonal side of the frustules is so much narrower than the valval as to render it almost impossible to meet with an individual that shows anything more than the plane of the valve. This is generally elevated, and, when seen with the binocular stereoscopic microscope of Nacet, shows itself in the form of an extremely depressed pyramid with a very extended basis, so as to cause some doubt in the case of species in which the raphe divides the extremities of the valve unequally, as in *Pleurosigma formosum*, W. Sm., *Pleurosigma decorum*, W. Sm., *Pleurosigma balticum*, W. Sm., &c., whether this appearance may not be the effect of a difference in obliquity at that point of the extreme sides of the pyramid.

*Pleurosigma elegantissimum*, n. sp. (Plate XXVIII. fig. 1.)

Valvis gracillime lanceolatis, rotundato-acutis; linea centrali excentrica medio inflexa; striis obliquis delicatissimis. Ad mare Japonicum.

This frustule was found in a sounding made near Yedo in the Sea of Japan. The striæ, which are very delicate, are arranged in a decussate manner. The form of the valve is slightly lanceolate, and the extremities are acute. The profile reminds the observer of the *Pleurosigma delicatulum* of W. Smith,<sup>1</sup> but it may be at once distinguished from the latter by the fact that the raphe divides unequally not only the extremities but also the general surface of the valve. Moreover, towards the central nodule the raphe of *Pleurosigma elegantissimum* is depressed so that the sigmoid line appears broken.

From such considerations the specific value of this form cannot be doubted.

*Pleurosigma naviculaceum*, Breb., var. nov. (Plate XXVIII. fig. 3.)

We have here represented a very minute *Pleurosigma* which was found in the Arafura Sea, where many other very interesting forms have been obtained. It is remarkable on account of its lanceolate profile and its greatly sigmoid raphe, which divides the two halves of the valve unequally. The central nodule is oval and very large, and in the closest proximity to this on both sides there is a well-defined smooth areola. The extremities are somewhat lengthened and rounded, and slightly recurved in a sigmoid manner.

Similar characteristics are found in *Pleurosigma naviculaceum*,<sup>2</sup> Breb., with the exception of the double indistinct areola near the central nodule.

*Pleurosigma speciosum*, W. Sm., var. nov. (Plate XXVIII. fig. 2.)

This figure shows another linear *Pleurosigma*, which was obtained in a sounding taken at the port of Tahiti. The striæ, which are arranged in a decussate manner, are

<sup>1</sup> W. Smith, *op. cit.*, vol. i. p. 64, pl. xxi. fig. 202.

<sup>2</sup> Brébisson, *Diat. de Cherbourg*, p. 17, fig. 7; = (1.) *Gyrosigma transversale*, *Microg. Dictionary*, 1854, pl. xi. figs. 37 and 38; (2.) *Pleurosigma transversale*, W. Smith, *op. cit.*, vol. ii. p. 96.