

with the typical and most common form already figured in its zonal and valval aspects by me.¹ It is rare to find a zonal presentation of such a frustule, but the appearance presented by the extremities discovers to the observer that the valve is not linear but inflated, and so probably represents a distinct species. In the absence, however, of more conclusive arguments I have chosen to regard it as possessing nothing more than varietal characteristics.

Surirella, Turp., Ehrenb., W. Sm.

Although the recognition of this genus is an easy matter, the determination of its species is a work of great difficulty. The structural details of the Diatoms are constantly found in a more or less developed condition, being sometimes scarcely even outlined, so that it is common to find frustules having the same structural peculiarities, though possessing widely different external contours.

The genus was first established by Turpin² in 1827, and afterwards adopted with modifications by Ehrenberg. Its conception was finally limited by W. Smith, who defined it thus:—"Frustules free, ovate, or elliptical, valves with a longitudinal central line, and margins produced into alæ; canaliculi distinct, usually parallel." But there are two considerations which are obstacles in the way of our accepting this definition. Firstly, types with a linear form, but which have all the other principal characteristics, such as *Surirella linearis*,³ W. Sm., and still more *Surirella arctissima*, A. S., the valve of which is figured in the Atlas of Schmidt, Plate lvi. figs. 13 and 14, are excluded. The linear form may, however, be looked upon as derived from the oval or elliptical by a process of elongation, while the panduriform outline results from the contraction of an oval form. Secondly, the definition cannot be adapted to some specific types, which, although they exhibit all the other characters of *Surirellæ*, are not provided with a central line. Hence not a few species at present classed as *Surirellæ* should be eliminated, as, for example, the *Surirella fastuosa*, Ehrenb., var. *abludens*,⁴ Grun., the *Surirella intercedens*,⁵ Grun., and others. This difficulty may readily be overcome by excluding from the definition the clause which demands the presence of a central line.

Surirella dives, n. sp. (Plate X. fig. 4.)

Forma elliptica, canaliculis radiantibus, margine denticulatis, a media superficie nascentibus, area centrali arcte lanceolata, et lineolarum corona cincta, et medio paucis lineolis transverse signata; margine striato. Ad Zebu, in mari Philippinarum.

This beautiful elliptical frustule is noteworthy on account of its well-developed

¹ *Atti. Accad. Pontif. d. nuov. Lincei*, vol. xxxv. sec. 6, May 21, 1882.

² *Mem. du Mus. d'hist. nat.*, vol. xvi.

³ *Synopsis of the British Diatomaceæ*, vol. i. p. 31, pl. viii. fig. 58.

⁴ Schmidt's Atlas, pl. xix. fig. 1.

⁵ Schmidt's Atlas, pl. xix. figs. 5 and 6.