

empirical sense to designate the openings on the surface of the sponge through which the water is discharged from the canal system. In this sense the word is now generally understood.¹

Thus in the case of tubular sponges, like *Siphonochalina* (Pl. VII.), the osculum is the large opening at the top of each tube. In the case of cup-shaped sponges, however, such as *Tedania infundibuliformis* (Pl. XI. fig. 1), we cannot call the wide expanded mouth of the funnel an osculum, although probably it is homologous with the opening of the tube in *Siphonochalina*. In flabellate sponges, as we have already had occasion to point out (p. xxxix), the oscula are usually confined to one surface; these flabellate forms by folding round give rise to funnel-shaped sponges—e.g., *Phakellia ventilabrum* and *Phyllospongia* (which may be either flabellate or cup-shaped),—in which the oscula are usually situated on the inner surface of the funnel. By a further extension of the same process the sponge becomes tubular, with a comparatively narrow opening at the top which we now call the osculum. How far this folding and complication may be carried we do not know.

The oscula in the Monaxonida vary very greatly in size;² they may either be small and abundant (e.g., *Petrosia hispida*, Pl. III. fig. 2; *Phakellia ventilabrum*, var. *connexiva*, Pl. XLIX. fig. 3; *Esperiopsis challengerii*, Pl. XVIII. fig. 1; *Homæodictya grandis*, Pl. XXII. figs. 1, 1b, &c.), or large and comparatively few (e.g., *Esperella murrayi*, Pl. XIV. figs. 1, 1a, *Spirastrella papillosa*, Pl. XLI. fig. 5, &c.). They are very commonly found on the uppermost part of the sponge, as in *Halichondria latrunculioides* (Pl. I. fig. 5), *Esperella murrayi* (Pl. XIV. figs. 1, 1a), *Spirastrella solida* (Pl. XLI. fig. 7), &c., but their distribution is very variable. Their form also varies much; they may either have their margins level with the general surface of the sponge and not surrounded by any raised collar, as, for example, in *Pachychalina* (?) *punctata* (Pl. VI. fig. 2), or they may be surrounded each by a membranous collar, as in *Esperella lapidiformis* (Pl. XVI. figs. 2, 2b), or they may be raised on the summits of papillæ, as in *Latrunculia apicalis* (Pl. XLIV. fig. 4; Pl. LI. fig. 1). They may be merely the openings of shallow, basin-like depressions, into which numerous exhalent canals discharge by numerous small mouths, as in *Pachychalina fibrosa* (Pl. IV. fig. 3); or they may be the openings of long, wide canals coming up from deep in the body of the sponge, as in *Latrunculia apicalis* (Pl. LI. fig. 1). Sometimes they are arranged in stellate groups, a condition which appears to be most common in flabellate sponges (e.g., *Homæodictya grandis*, Pl. XXII.; and *Phakellia flabellata*, Pl. XXXIV. fig. 3a); or, again, there may be only a single osculum to each individual, as in *Stylocordyla* (Pl. XLIII. fig. 10).

¹ Cf. Vosmaer, Bronn's Klass. u. Ordnung. d. Thierreichs, Porifera, p. 127.

² For measurements see the Description of Genera and Species.