

The family *Concharida* and the two following closely allied families, the *Cœlodendrida* and *Cœlographida*, compose together the most remarkable and interesting suborder of *Phæoconchia* (or "*PHÆODARIA bivalva*"), differing from all the other *Radiolaria* in the possession of a bivalved lattice-shell, composed of two separate valves, like the shell of a *Brachiopod*. The central capsule is so enclosed between the two fenestrated valves that its three openings lie in the horizontal open (frontal) fissure between them, the astropyle or main-opening on the oral pole of the main axis; the two secondary openings or parapylæ on the two sides of its aboral pole, at right and left. The plane in which the three openings lie is therefore the frontal plane, dividing the entire body into a dorsal and a ventral half. The two valves, accordingly, must be considered as dorsal and ventral valves (as in the *Brachiopoda*), and the symmetrical halves of each valve as right and left. These halves may be always easily distinguished, since the oral pole of each valve is constantly different from the aboral pole. The voluminous phæodium always lies in the oral half, and the central capsule in the aboral half of the shell-cavity, whilst the calymma encloses the whole shell.

The *Concharida* differ from the other two families of bivalved *PHÆODARIA* in the absence of the apical galeas, and the branched hollow tubes arising from them. Each of these two cupolas, which are at the opposite poles of the sagittal axis (one cupola on the apex of each valve), is in the *Cœlographida* connected by a simple or double frenulum with a peculiar rhinocanna, or an open nasal tube directed towards the mouth; whilst the cupolas of the *Cœlodendrida* possess neither a rhinocanna nor a frenulum. The three families of *Phæoconchia* may therefore represent a phylogenetical series, the common root of which are the *Concharida*. From these are developed the *Cœlodendrida* by development of an apical cupola or galea on each valve, and of hollow radial tubes arising from it; whilst the *Cœlographida* are developed from the latter by production of a rhinocanna on the base of each cupola, and of one or two frenula connecting the former with the latter.

All the *Concharida* described in the following pages (seven genera and thirty species), are perfectly new to science, and not a single form of this interesting family was known before the explorations of the *Challenger*. Some species (mainly of the genera *Conchidium* and *Conchopsis*) are by no means rare, and are found in great numbers at some stations of the tropical seas (in the Pacific as well as in the Atlantic). All described species are closely allied, agree in the majority of characters, and are easy to distinguish from all the other *Radiolaria*. Some few forms of *Concharida*, however, form a direct passage to the *Cœlodendrida*.

Regarding the probable origin of the *Concharida* (and therefore also of all other *Phæoconchia* derived from the latter), two different hypotheses are possible. They have either been derived directly from the skeletonless *Phæodina*, by development of a bivalved lattice-shell; or they may be derived from *PHÆODARIA* with a simple