from a study of the concentrically disposed lattice-shells of some Larcoidea (*Coccolarcus*, *Larcidium*, Pl. **50**, fig. 8), in which the inner medullary shell is spherical, the outer cortical shell more or less elliptical. In the great majority of Larcoidea the latter arises in quite a peculiar manner, three broad lattice-zones, which are developed in three planes at right angles to each other, growing out from a small spherical or lentelliptical medullary shell, *Trizonium*, *Larnacilla* (compare pp. 600, 615, 628, &c.).

The trizonal *Larnacilla*-shell commences by the formation of a transverse girdle, by the union of two lateral latticed processes, which spring right and left in the equatorial plane from the poles of the frontal axis of a lentelliptical medullary shell (*Monozonium*, p. 633, Pl. **9**, fig. 1). This is followed by a second lateral girdle, which lies in the frontal plane and proceeds from its lateral poles (*Dizonium*, p. 634, Pl. **9**, figs. 2, 3). Finally the sagittal girdle is formed, lying in the sagittal plane and arising from the lateral girdle on the two poles of the main axis (*Trizonium*, p. 637, Pl. **9**, fig. 4). Whilst the gaps between the three zones of this trizonal shell remain open in the Pylonida, in *Larnacilla*, the important primitive form of the Larnacida, they are closed by lattice-work (Pl. **50**, figs. 3–8). From this trizonal *Larnacilla*-shell the great majority of Larcoid shells may be derived. Such a system of zones may be repeated (Diplozonaria) or even developed a third time (Triplozonaria, p. 632). In most Larcoidea the zones are secondarily connected by lattice-work. In the Tholonida (Pl. **10**) each of the two opposite latticed wings of a zone becomes a closed dome. In the Zonarida (Pl. **50** figs. 9–12) these domes are partially or wholly bisected by constrictions or latticed septa which are developed in the three dimensive planes. The Lithelida (Pl. **49**, figs. 1–7) are characterised by the fact that one of each pair of opposite latticed processes (or half zones) grows more strongly than the other, and that the larger completely embraces the smaller so as to form a complicated spiral. Whilst in this case the spiral lies in a plane, in the Streblonida (Pl. **49**, figs. 8, 9) it becomes turbinoid like a gastropod shell and forms an ascending spiral. Finally, two small families of Larcoidea are characterised by quite irregular growth (a very rare occurrence among the Radiolaria); these are the simple-chambered Phorticida (Pl. **49**, figs. 10, 11), and the many chambered Soreumida (Pl. **49**, figs. 12, 13). The phylogenetic relationship of these families of Larcoidea is probably very complicated and demands closer investigation (compare pp. 599–604).

168. *Descent of the Polycyttaria.*—The polyzootic or colonial Radiolaria, which we unite in the group Polycyttaria (sometimes known as "Sphærozoea"), belong without doubt to the legion SPUMELLARIA, for they possess all the peculiarities by which these PERIPYLEA are distinguished from the other legions of the Radiolaria. Only the morphological position of the Polycyttaria in that legion, and their phylogenetic relation to the monozootic or solitary SPUMELLARIA, can be variously interpreted. The three families which we distinguish among the Polycyttaria are so closely related to three different families of the Monocyttaria, that they may be directly derived from them by the formation of colonies. According to this *triphyletic hypothesis* the social skeletonless Collozoida (Pl. **3**) would be descended from the solitary Thalassicollida (Pl. **1**), the polyzootic Sphærozoida with a Beloid skeleton (Pl. **4**) from the monozootic Thalasso-