

The ideal fundamental form of the shell, however, is constantly monaxonian, since the place of the shell-mouth and of the proboscis of the capsule (both lying in one axis of the sphere), causes a principal axis to be different from all others. The longer radial spines, quite variable in number and disposition, are never arranged regularly or symmetrically, and therefore determine no constant axes.

The lattice-work of the spherical shell offers also but slight differences. It is usually more or less irregular, with circular or subcircular pores of unequal sizes. More rarely the network is perfectly regular, with equidistant circular pores of equal size, and sometimes these are surrounded by hexagonal frames (fig. 6), as in many *Sphæroidea*. More rarely the pores are perfectly irregular, roundish or sometimes polygonal, of unequal sizes and dissimilar forms (fig. 2). The size of the pores is very variable, between 0.01 and 0.05, usually between 0.015 and 0.025. They are commonly somewhat broader than the bars between them, more rarely smaller. The substance of the shell-wall is in the majority of *Castanellida* hyaline, transparent (as in the similar *Sphæroidea*); in some larger forms, however, a network of fine axial filaments is visible in the lattice (fig. 2), and sometimes this seems to be hollow, with an axial canal (as in the large *Orosphærida*). Such an axial filament or fine axial canal is usually visible in the larger radial spines. The shell-wall of the *Castanellida*, however, never exhibits that characteristic structure (with tangential needles in a cement-like fundamental substance), which we find in all *Circoporida*. The latter differ also in the constant presence of circles of large pores around the bases of the radial spines, which are never found in the *Castanellida*. The shell becomes usually stained more or less purple by carmine, and when burned by fire, becomes of a brown colour.

The inner surface of the shell is always quite smooth, the outer surface armed with numerous short and thin radial bristles. Sometimes these bristles or "by-spines" are very short, but never perfectly wanting. Usually their length is about one-third or one-fourth of the radius of the shell, often less, rarely more. They arise from the nodal points between every three or four neighbouring spines, and are commonly very thin and straight, pointed, with slightly thickened conical basis. Rarely they are directed not quite radially, but more or less obliquely.

The larger radial spines, which arise between the thin bristles or "by-spines" and may be opposed to the latter as "main-spines," are wanting in two genera only, in *Castanarium* and *Castanella* (Pl. 113, fig. 6). They are simple in *Castanidium* (figs. 2, 5, 7) and *Castanissa* (fig. 1), irregularly branched in *Castanopsis* and *Castanura* (figs. 3, 4). Their number and disposition is never regular nor symmetrical (as in the majority of *Sphæroidea*) and varies even in each single species. In general the number of main-spines varies between ten and forty (rarely less or more) usually between twenty and thirty. Their length is commonly about equal to the diameter of the shell, often somewhat shorter, rarely considerably longer. Their