

constricted into two divisions by a transverse velum (Pl. XII. fig. 24). The epithelium of the canals is very clearly shown in some parts of the thin slices, and frequently the outer membrane of the epithelial cells is supported on the tylote ends of the chiasal actines in tent-like projections. The cladi of early forms of the anatriæne project from the primitive tylus at right angles to the rhabdome, as shown in figs. 16-18, Pl. XII., the first two figures representing two successive stages in the growth of the spicule, while the third is a more highly magnified representation of the spicule illustrated in fig. 16. The cladi of the protriæne project outwards and forwards from the first (fig. 19). The tylus from which the cladi originate is well shown in the end view of a young triæne given in fig. 22.

The anthasters show no tendency to constancy in the number of the actines; six are frequently present, but five, four, three, and two are quite as common. The young anthaster is smooth, with conical pointed actines (figs. 20, 21); it is not an overgrown chiaster, but both probably are modifications of a more primitive form.

Both chiasters and anthasters are found alike in the choanosome and the ectosome, but anthasters are more numerous in the latter region than in the former, and are wholly absent near the centre of the sponge. The chiasters appear nearer the epithelial surfaces than the anthasters; thus in the ectosome they are plentifully scattered over the inner face of the lining epithelium of the subdermal cavities, almost to the exclusion of anthasters, which usually are more deeply seated in the collenchyma.

*Anthastra communis*, Sollas (Pl. XIII. figs. 1-29; Pl. XV. figs. 20-27).

*Anthastra communis*, Sollas, Prelim. Account, Sci. Proc. Roy. Dubl. Soc., vol. v. p. 191, 1886.

*Sponge* (Pl. XIII. figs. 1, 12, 13) nearly spherical when young, spherical, oval, or tuberoso when older. Free or attached; frequently sparingly incrustated with foreign bodies. Oscules usually not distinguishable from the pores; in one specimen distinct, congregated. Pores in cribriform areas marked out by the cladi of the dichotriænes. Subdermal cavities forming winding, branched, anastomosing canals within the ectosome. Excurent canals usually small, not distinguishable from those of the incurrent system. Surface even, rough to the touch, hispid in places.

*Spicules*.—I. Megascleres. 1. *Oxea* (Pl. XIII. figs. 2, 14; Pl. XV. fig. 23), fusiform, straight or slightly curved, variously pointed, obtusely or sharply, or tornotate or strongylate, 4.2 to 5.6 by 0.06 to 0.09 mm. A smaller oxea, apparently a young form of the preceding, is present, and forms within the ectosome radiating pencils at the ends of the radial spicular sheaves.

2. *Dichotriæne* (Pl. XIII. figs. 3, 15, 19; Pl. XV. fig. 24), a conical rhabdome, much attenuated proximally, sharply pointed or rounded off near the end; cladi bifurcate, protocladi projecting forwards and outwards, sometimes more outwards than forwards,