circular incurrent aperture of the funnel lies under the porous dermal membrane, while the blind pointed apex lies somewhat in the middle of the space, and turned towards the gastral membrane.

While a section at right angles through the wall, which shows longitudinal sections of the radial canals, exhibits the funnels in longitudinal or lateral section, that is to say, affords a lateral view of a chamber system (Pl. LXXXIV. fig. 1), a view from the dermal skeleton reveals in each of the hexagonal spaces, on the inner surface of the skeletal enclosure, a circle of chambers which surround a simple, central, funnel-shaped, space (Pl. LXXXIII. fig. 4), and a view from the gastral surface into the wide, excurrent tube, shows the septa which arise by the coalescence of the large diverticula forming the funnel (Pl. LXXXIII. fig. 3).

3. *Aphrocallistes vastus*, n. sp. (Pl. LXXXV.).

The specimen represented on Pl. LXXXV. fig. 1, in its natural size, was collected by Dr. Döderlein in the Sagami Bay (Japan), from a depth of 180 fathoms. There was also a small fragment firmly fixed to a Coral, and apparently of similar structure, probably belonging to the same specimen. They represent parts of the lateral wall of a large cup. Instead of the glove-finger-like sacculations which occur in *Aphrocallistes beatrix* and *Aphrocallistes bocagei*, there is here a simple folding of the wall. Whether the tolerably irregular, bulging folds, which are here and there attached to the Coral branch were directed longitudinally or transversely to the axis of the entire cup could not be certainly determined, though I am inclined to believe that they were longitudinal. In this connection it is interesting that in another specimen of *Aphrocallistes bocagei*, bought in Enosima by Dr. Gottsche, an indication of the longitudinal folding of the cup-wall could be recognised. A trace of the same is also to be observed in the figure of *Aphrocallistes beatrix* given by Gray.

Since the thickness of the cup wall amounts to 5 mm., the mesh spaces, which are about 1 mm. in width, have become *canals*, which penetrate the wall transversely in a radial direction. The dermal membrane, which is still clearly visible in these dried specimens, extends in the form of a delicate skin over the whole outer surface. With a lens one can recognise a fine quadrate lattice-work formed of apposed dermalia. A quadrate lattice-like network of this kind is indeed entirely absent on the inner side of the partially-preserved gastral membrane, which has rather an irregular streaky appearance.

A more accurate examination of the dictyonal framework of the septa between the radial six-sided prismatic canals, shows that it consists of a single-layered network, with meshes predominantly three- or four-sided. The beams of the network bear rays directed at right angles or obliquely to the dermal surface, and projecting freely