Remarks.—This sponge closely resembles *Placortis simplex*, F. E. Schulze, from which it differs by the larger size of the microxea and the smaller size and greater number of the actines of the aster. If we suppose the triod of *Placortis* to develop fresh actines, becoming smaller in the process, and the microxea to lengthen and to acquire a more constant and regular fusiform outline, we shall arrive directly at *Astropeplus*.

The spicules of the *Calthropella simplex* on which the sponge is seated, occur mixed along with those proper to it, so that mingled with the asters in the ectosome of *Astropeplus* we find the characteristic spheraster of the *Calthropella*. This furnishes another indication of the extrusion of spicules from a sponge during life.

Group II. HETEROSCLERA.

Spintharophora in which megascleres are always present, and sometimes microscleres in addition.

Demus I. CENTROSPINTHARA.

Heterosclera in which the microsclere when present is a euaster.

Family I. AXINELLIDÆ (O. Schmidt).

Centrospinthara in which the ectosome is not a cortex, the mesoderm of the choanosome is collenchymatous, the chamber-system is eurypylous. The skeleton consists of axial fibres, and radial fibres proceeding from them to the surface. The megascleres are styles and rhabdi, which may be isoactinate or anisoactinate, or both. The microsclere when present is a spheraster or strongylaster or oxyaster, and in one genus, *Tricentrium*, sometimes a microcalthrops.

Genus 10. *Epallax*.

The choanosome is a regularly folded plate, the sinuses of the folds on one face are the main excurrent canals, on the other face the main incurrent canals. The spicules are large oxeas and asters, the former partly arranged in longitudinal fibres cemented by spongin.

Epallax callocyathus, n. sp. (Pl. X. figs. 1–12).

Sponge (Pl. X. fig. 1).—Vasiform, expanding towards the margin, above which it is rounded and gently undulating, produced into a short, slender, strong stalk below, by which it is attached. Oscules small, opening into the interior of the cup in radiating linear series, those of adjacent rows irregularly alternating with each other. Pores in cribriform areas lying over the incurrent canals, which interdigitate with the excurrent canals, both crossing the walls of the sponge transversely in linear, longitudinal rows.