

Irregularities in the form of the calthrops are not uncommon (Pl. XI. figs. 15-23); the actines may branch, often more or less irregularly, the branches becoming crooked and tubercular towards their termination (Pl. XI. figs. 17-19), and then suggesting a resemblance to the tetracrepid desma of the Lithistida; in other cases the actines may be reduced (Pl. XI. figs. 21-23) to three or even two in number.

The canals of the sponge are crossed by velar diaphragms, and the aphodal canals of the flagellated chambers (Pl. XI. figs. 28-31) are frequently alternately constricted and enlarged as though by minute vela.

Genus 2. *Calthropella*, n. gen.

Pachastrellidæ with only one form of microsclere, which is a euaster.

Calthropella simplex, n. sp. (Pl. X. figs. 13, 14, and 21-29).

Sponge (Pl. X. figs. 13, 14).—Massive, irregularly ridge-like, with a flattened base and rounded sides. Surface smooth, raised in places into small rounded tubercles, each with a crater-like depression at the summit, from 0.15 to 0.5 mm. in diameter, and a centrally perforated floor. Oscules and pores similar, the central perforation of the tubercles leading into comparatively large, underlying cavities, from which numerous canals descend into the choanosome.

Spicules.—I. Megascleres. 1. *Calthrops* of the first order (Pl. X. figs. 21-27); actines conical, smooth, simple, oxeate, tornote, or strongylate, 0.8 by 0.09 mm. The actines are frequently reduced to three in number, sometimes to one, occasionally they are more numerous than four; a tendency to a tubercular growth sometimes occurs (Pl. X. fig. 27). 2. *Calthrops* of the second order, similar to the foregoing, but smaller, actines 0.15 by 0.02 mm.

II. Microscleres. 3. *Spheraster* (Pl. X. fig. 28), centrum comparatively large; actines numerous, reduced to rounded tubercles, 0.0237 mm. in diameter. A smaller form, 0.012 mm. in diameter, bearing fewer tubercles, is present beneath the outer epithelium. In the young state the actines are slender, conical, and oxeate (Pl. X. fig. 29).

Colour.—Opaque-cream, or ochreous-white.

Habitat.—St. Iago, Porto Praya.

Remarks.—This sponge, which is not quite complete, measures in its present state 90 mm. in length, it is 45 mm. broad at the base, and 38 mm. high.

The ectosome consists of collenchyme containing numerous, deeply-stained, granule-cells, about 0.016 to 0.02 mm. in diameter, and elongated, fusiform cells, which are disposed tangentially, and render it fibrous. Its thickness is variable, in places as much