

them as primary; and it is owing to this character, as well as to the body being permeated by a regular system of internal canals, that I must¹ place the form in question as a new species in the genus *Hippospongia*, F. E. Schulze.

Colour.—Soft parts yellowish-pale, skeletal fibres dark yellow.

Habitat.—Off Api, New Hebrides, 18th August, 1874; depth 60 to 70 fathoms.

Cacospongia, Oscar Schmidt.

Spongidæ with readily distinguishable primary and secondary skeletal fibres of comparatively thick diameter and forming comparatively large meshes.

Cacospongia levis, n. sp. (Pl. V. figs. 1-3).

The external surface of the single Challenger specimen is quite smooth except in some spots where it is rather roughened by the ascending primary fibres. It is in this property that, bearing in mind the conjectural affinities of the species, I am inclined to see its most important systematic character. The species seems to be closely allied to *Cacospongia mollior*, but as we learn from F. E. Schulze (compare his drawing in the memoir on the Spongidæ), the outer surface of the latter is denticulated throughout. Again, the meshes of *Cacospongia levis* are rather smaller than those of *Cacospongia mollior*, and its primary fibres are 0·08 mm., the secondary ones only 0·04 mm. thick, the corresponding fibres in *Cacospongia mollior* being on an average 0·15 mm. and 0·05 mm. in diameter. Approaching as regards these latter characters to my *Hippospongia anomala*, the species in question differs both from it and from *Euspongia officinalis* var. *lobosa* in a sharply pronounced rigidity of its skeleton. Just as in *Hippospongia anomala*, the body of my *Cacospongia levis* proved also to be perforated by numerous canals, but neither do these canals show, on the whole, any regular arrangement, being quite analogous to those of *Cacospongia cavernosa*, nor is any membrane to be found above their terminal points, so that there can be no doubt as to the systematic position of this sponge. The primary fibres though not prominent may still be readily distinguished (Pl. V. fig. 2). They proved to be cored with foreign bodies, chiefly fragments of spicules lying, however, only in the central part of the fibre; in contrast to this, the secondary fibres are quite devoid of any enclosures. In the soft parts of the specimen in question I found some formations which though lying free in the parenchyma, *i.e.*, not surrounded by a special endothelial layer, nevertheless presented a great resemblance to sperm-balls. A more careful examination and the application of high magnifying powers showed, however, that these formations are scarcely identical with sperm-balls. Their contents consist of numerous oval bodies in which no nucleus could be distinguished, but quite homogeneous throughout

¹ Comp. p. 84.