ing to the form of the latter either a flat surface or one covered with numerous conical elevations is formed. A similar and similarly perforated membrane is found also on the opposed surface of the body-wall, the surface of egress, which indeed generally encloses an internal gastric cavity, but may also, as in the case of many flattened or mushroom-shaped sponges, be quite free and form an upper or lateral surface.

"Between these two perforated boundary-surfaces there extends the simple strongly folded layer of the ciliated cavities, which usually manifest a saccular shape, as I have already described in *Euplectella aspergillum*,[1] but in some cases, as in the family Hyalonematidæ, diverge to some extent from this. The delicate wall of the cavities allows the square lattice-marking to be perceived as in *Euplectella*, and is also more or less thickly but irregularly perforated by round pores. This system of ciliated cavities is connected with the two boundary-surfaces by means of a wide-meshed tissue of delicate anastomosing trabeculæ, which are suspended and stretched between them. Since, then, all the chambers are in direct communication, and since their convex surfaces are always turned towards the entering water, this latter must flow through them in such a manner that it enters through the pores and passes out through the wide oral opening.

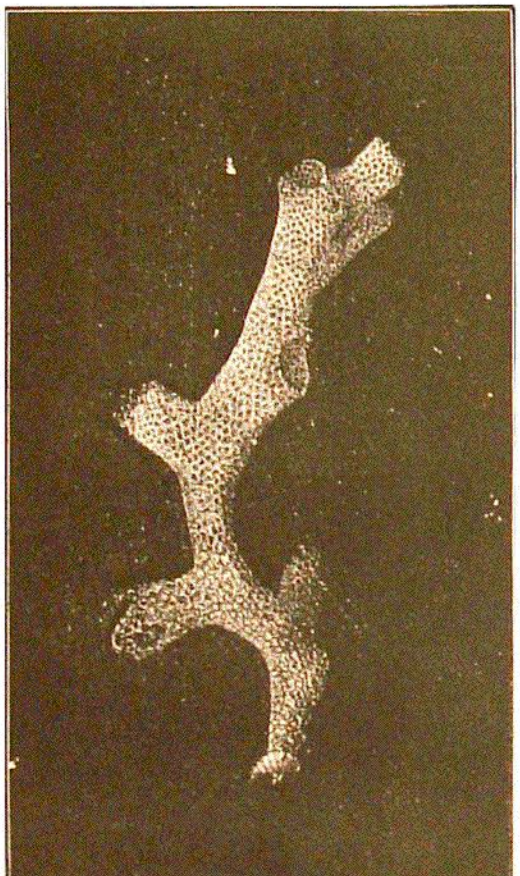

FIG. 166.—*Melittiaulus ramosus*, n. gen. et sp., a representative of the Uncinataria.

"On account of the great uniformity in the structure of the soft parts, I have only been able to use these for systematic purposes in a few cases, such as in the definition of the Hyalonematidæ. For such purposes the form and arrangement of the siliceous skeleton, which has hitherto been almost exclusively applied by all spongiologists, is most significant.

"The two primary divisions of the Hexactinellida, LYSSACINA and DICTYONINA, which Zittel founded some years ago in his important work on fossil sponges, I retain with the same significance, but in consequence of my investigations I have been obliged to modify his original definitions to some extent.

"Zittel regards as LYSSACINA those Hexactinellida in which the whole skeleton consists of spicules which are only connected by means of the sarcode (exceptionally, however, irregularly by means of flattened siliceous bodies), and in which the spicules of the soft parts are for the most part very plentiful and highly differentiated.

"The DICTYONINA he defined as those Hexactinellida whose spicules are so united that

[1] *Trans. Roy. Soc. Edin.*, vol. xxix. pp. 661–673, 1881.