

## Order II. LITHISTIDA, O. Schmidt.

*Historical.*—The earliest description of a recent Lithistid sponge, *Macandrewia azorica*, we owe to Gray, who was not unnaturally greatly puzzled as to its nature; struck by the resemblance of its oscules to the calyces of an Alcyonarian, he was much inclined to place it with the Alcyonaria, but cautiously refrained from actually doing so, since he was unable to find any traces of the polypes.<sup>1</sup> Bowerbank would seem to have been the first to definitely include the Lithistida with the Sponges,<sup>2</sup> but he did not distinguish them from the Hexactinellida, and this, and his failure to understand the true nature of the skeleton either in the Hexactinellida or the Lithistida, led him into numerous errors; not only did he class together these two widely different groups in the same suborder, the fibro-siliceous Sponges, but he placed species belonging to both in the same genus; thus the genus *Dactylocalyx*, instituted by Stutchbury to contain the Hexactinellid species *Dactylocalyx pumiceus*, must be carefully distinguished from the genus *Dactylocalyx* of Bowerbank, which in addition to this species contained several others which are genuine Lithistids. This fact was not recognised by succeeding writers for some years, and thus we find Gray in his classification of the Sponges<sup>3</sup> including both Hexactinellid and Lithistid Sponges in his order Coralliospongia, and adopting the Bowerbankian genus *Dactylocalyx*, with its heterogeneous mixture of species belonging to two groups of different subclasses. Similarly Wyville Thomson, in an account of the Vitrea, an order proposed by him, falls into the same error.<sup>4</sup>

Duchassaing and Michelotti in 1864 instituted a family Lithospongiæ, but from its definition it might include Hexactinellid as well as Lithistid Sponges, and from the illustration given of the only species of the group known to them, I am inclined to think that it was actually based on a Hexactinellid Sponge.<sup>5</sup>

In 1869 Bowerbank<sup>6</sup> largely added to our knowledge of the species of the order, but included them all but one in the genus *Dactylocalyx*; in the same year<sup>7</sup> Bocage rescued one species from this omnivorous genus, to which he tells us Bowerbank had intended to devote it (as indeed he did in the Memoir just referred to, which was published slightly later than Bocage's description). This species was made the type of a new genus, *Discodermia*, under the name of *Discodermia polydiscus*.

The next great step in advance was made by O. Schmidt,<sup>8</sup> who brought the Lithistid

<sup>1</sup> Gray, *Proc. Zool. Soc. Lond.*, p. 437, pl. xv., 1859.

<sup>2</sup> Bowerbank, *Phil. Trans.*, p. 279, 1858.

<sup>3</sup> Gray, *Proc. Zool. Soc. Lond.*, p. 472, 1867.

<sup>4</sup> Wyville Thomson, *Ann. and Mag. Nat. Hist.*, ser. 4, vol. i. p. 119, 1868.

<sup>5</sup> Duchassaing and Michelotti, *Spongiares d. l. Mer Caraibe*, p. 64, pl. xii. figs. 3, 4, 1864.

<sup>6</sup> Bowerbank, *Proc. Zool. Soc. Lond.*, p. 66, 1869.

<sup>7</sup> Bocage, *Jorn. Sci. math. phys. e nat. Lisboa*, vol. ii. p. 180, pl. xi. fig. 1, 1869.

<sup>8</sup> O. Schmidt, *Spong. Atlant. Gebiet.*, p. 21, pl. iii., 1870.