

Milne-Edwards,<sup>1</sup> in 1841, formed the genus *Leptoclinum* as an addition to Savigny's two genera, since he found that several species of Didemnidæ which he studied possessed common cloacal cavities which received the atrial apertures of the various Ascidiozooids, a character which Savigny denied to both *Didemnum* and *Eucælium*, although he plainly figures the cloacal apertures in the case of the latter genus. The three genera recognised by Milne-Edwards, *Didemnum*, *Eucælium*, and *Leptoclinum*, form the unistellar division of his Didemniens, the second great group of Compound Ascidiæ according to his scheme of classification. The genus *Lissoclinum*, founded by Verrill<sup>2</sup> in 1871, requires to be re-examined and fully described before it can be referred to its proper position with certainty. Two species have been placed in the genus, *Lissoclinum aureum* and *Lissoclinum tenerum*, both from the eastern coast of North America.

Giard,<sup>3</sup> in 1872, definitely established the family<sup>4</sup> Didemnidæ as a group including the three genera *Didemnum*, *Eucælium*, and *Leptoclinum*, and distinguished by the possession of calcareous spicules in the common test from their nearest allies the Diplosomidæ. He points out that the cloacal cavities are exceedingly difficult to distinguish in preserved specimens, and that, in all probability, they were present in Savigny's specimens, although not detected by that investigator. Consequently Milne-Edwards' ground for the formation of the genus *Leptoclinum* does not really exist, since all the Didemnidæ have common cloacal cavities. But, as Giard points out, all the species of Didemnidæ examined by Milne-Edwards are characterised by their habit of forming very thin crusts, much thinner than those of *Didemnum*, and consequently the name *Leptoclinum* may still be retained for them, although the distinguishing feature of the genus is not what its founder believed it to be. Giard separates *Eucælium* from *Didemnum* on account of the transparency of the mantle, the obtuse and often rudimentary lobes round the branchial aperture, the length of the rectum, and the swelling on the intestine, all of these being characters which are clearly shown in Savigny's excellent figures. *Eucælium* he distinguishes, on the other hand, from *Leptoclinum* by the thickness of the common test, the presence of the swelling on the intestine, and the form of the cloacal aperture, which is slit-like (as in *Didemnum*) in place of being open and wide as it is in *Leptoclinum*.

Although Della Valle recognised the genus *Leptoclinum* in 1877,<sup>5</sup> and described three new species, he appears to have afterwards abandoned it, as in his later work, in 1881,<sup>6</sup> he divides his section Didemnidi, which is equivalent to the present family, into two genera:—*Didemnum* (or *Trididemnum*), in which there are three rows of stigmata in the

<sup>1</sup> Observations sur les Ascidies Composées, &c.

<sup>2</sup> Amer. Journ. Sci. and Arts, ser. 3, vol. i. No. 6, p. 443.

<sup>3</sup> Recherches sur les Synascidies, Archives d. Zool. expér., t. i. p. 644.

<sup>4</sup> He called it a "Tribe" (Tribus I.), loc. cit., p. 644.

<sup>5</sup> Contribuzioni alla Storia Naturale delle Ascidie Composte del Golfo di Napoli, p. 45.

<sup>6</sup> Nuovi Contribuzioni alla Storia Naturale delle Ascidie Composte del Golfo di Napoli, p. 50.