

lateral and two weaker medial, an upper and a lower). The cnidoblasts are often more crowded towards the distal end. Sometimes they are irregularly scattered.

Ontogeny.—The larvæ of the Velellidæ were described by Eschscholtz,¹ who founded upon them the new genus *Rataria*. We retain here this genus for those simplest forms of the family, which, at this same stage, develop a corona of sexual siphons around the central siphon, and gonophores from the gastral walls of these gonostyles. The larval forms of *Velella*, described usually as *Rataria*, lack the gonostyles, and are better designated as *Ratarula*. Pagenstecher (55) has given a careful historical and anatomical description of these larval forms. But I suppose that the numerous larvæ examined by him, and all figured as *Rataria*, may be mixed larvæ of *Velella* and *Porpita*. The regular octoradial pneumatocyst, figured in his Taf. xli. fig. 1, seems to belong to *Porpita*, since the same organ in *Velella* is always more or less amphithec or bilateral. But no larva of *Porpita* has the vertical sail or crest shown in his figs. 3–5, &c.; these belong to *Velella*.

The medusiform gonophores, which bud in clusters from the gonostyles of the Velellidæ, and afterwards become detached (*Discomitra*, *Chrysomitra*), are described by many authors (mainly by Kölliker, 4, Vogt, 5, Gegenbaur, 7, Leuckart, 8, Huxley, 9, Alexander Agassiz, 57, and others (compare on the metagenesis of the Velellidæ, p. 39 above).

Phylogeny.—The Velellidæ have probably descended from the older forms of Porpitiidæ (or directly from the Discalidæ); their peculiar amphithec or bilateral development is due to the production of the vertical sail as a longitudinal fold of the exumbrella.

Synopsis of the Genera of Velellidæ.

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| 1. Umbrella elliptical, with integral margin. Pneumatocyst without crest. Corona of tentacles simple, | 7. <i>Rataria</i> . |
| 2. Umbrella elliptical or quadrangular, with integral margin. Pneumatocyst with a crest. Corona of tentacles simple, | 8. <i>Velella</i> . |
| 3. Umbrella quadrangular, with a lobate margin. Pneumatocyst with a crest. Corona of tentacles double or multiple, | 9. <i>Armenista</i> . |

Genus 7. *Rataria*,² Eschscholtz, 1829.

Rataria, Esch., System der Acalephen, p. 166.

Definition.—Velellidæ with an elliptical umbrella and a vertical membranous sail placed in the major axis of the ellipse. Margin of the umbrella not lobate. Pneumatocyst flatly campanulate or more discoidal, elliptical, without vertical chitinous crest. Submarginal corona of tentacles simple.

The genus *Rataria* is the simplest and most primitive form of the Velellidæ, and

¹ 1, p. 166.

² *Rataria* = A float.