

## IV. DARWIN'S "TRUE OVARIA."

Darwin<sup>1</sup> observed in the Cirripedia two glandular masses resting on the upper edge of the stomach, and touching the cœca where such exist; these were thought by Cuvier to be salivary glands. They are of an orange colour and form two parallel "gut-formed" masses. Darwin was not able to ascertain whether the two main ovarian ducts coming from the peduncle expanded to envelop these glandulæ or what the precise connection was. He says "the state of these two masses varied much; sometimes they were hollow, with only their walls spotted with a few cellular little masses; at other times they contained or rather were formed of more or less globular or finger-shaped aggregations of pulpy matter; and lastly, the whole consisted of separate pointed little balls, each with a large inner cell, and this again with two or three included granules. These so closely resembled in general appearance and size the ovigerms with their germinal vesicles and spots, which I have often seen at the first commencement of the formation of the ova in the ovarian tubes in the peduncle, that I cannot doubt that such is their nature. Hence I conclude that these two gut-formed masses are the true ovaria. I may add that several times I have seen in the two long unbranched ducts, connecting the true ovaria and the ovarian tubes in the peduncle, pellets of orange-coloured cellular matter (*i.e.*, ovigerms) forming at short intervals little enlargements in the ducts, and apparently travelling into the peduncle."

In the second volume of Darwin's Monograph,<sup>2</sup> the same opinion as to the nature of these glandular bodies was given for the sessile Cirripedia. This opinion, however, was not only opposed to that of Cuvier<sup>3</sup> but also to that of Martin-Saint-Ange and of Karsten. Martin-Saint-Ange<sup>4</sup> describes "une espèce d'appendice stomacal, un véritable prolongement renflé et bilobé, communiquant avec la première cavité de l'estomac par un pédicule étroit et fort court. La structure, la forme générale, la coloration et la disposition mamelonnée de la surface extérieure de cette partie sont tout à fait semblables à celle de l'estomac, et doivent être regardées comme faisant partie du même organe." Martin-Saint-Ange, therefore, cannot be said to have considered these bodies as salivary glands, since he points out in his Memoir as well as in the explanation of the figures that these organs communicate with the stomach. So Darwin's objection "that salivary glands have not been positively recognised in any Crustacean" cannot be considered of any consequence.

Krohn,<sup>5</sup> describing the direction followed by the oviducts, says that they approach very

<sup>1</sup> Darwin, *Lepadidæ*, 1851, p. 57.

<sup>2</sup> *Balanidæ*, 1854, p. 100.

<sup>3</sup> Cuvier, *Mémoire sur les animaux des Anatifes*, *Mém. Mus. Hist. Nat.*, t. ii., 1815.

<sup>4</sup> Martin-Saint-Ange, *Mémoire sur l'organisation des Cirripèdes*, *Mém. Inst. Savans. Étrang.*, t. vi., 1835.

<sup>5</sup> Krohn, *Ueber d. Cement- und Zeugungsapparat d. Cirripeden*, *Wiegmann's Archiv*, t. xxv., 1859.