

l'avons établi, des plaques dorsales disposées au début, comme celles du calice des Crinoïdes ; nous avons démontré que, chez les *Brisinga*, les plaques de la première rangée deviennent les odontophores." Even yet, however, no figures of the various developmental stages of *Brisinga* have been published in "demonstration" of Perrier's statements, which were summarised as follows, "Ainsi les odontophores sont les restes des pièces du premier rang du disque primitif de la *Brisinga*. L'identité évidente du plan d'organisation des *Brisinga* et des Astéries proprement dites rend la même conclusion probable pour les autres Étoiles de mer." It is undoubtedly probable that what is true of *Brisinga* also applies to all the other Asterids ; and it is therefore the more desirable that some proof should be offered of the very definite statements made by Perrier. They have recently been disputed by Sladen<sup>1</sup> on the ground that in all the Starfishes of which the embryonic stages are sufficiently known, the basals and odontophores are "separate and distinct, and co-exist independently from their first formation ;" while he further expresses his belief, based on sound morphological arguments, that the origin assigned by Perrier to the odontophores of an Asterid is theoretically impossible.

Perrier has recently repeated his statements in somewhat greater detail,<sup>2</sup> and having compared Lovén's figures of the young *Asterias glacialis* with his young specimens of *Brisinga*, he says that he has no doubt whatever, "que les choses se passent de la même façon dans les deux genres, et nous pouvons, dès lors, affirmer que les pièces radiales (*sic*) des très jeunes Asteriadæ deviennent dans cette ordre de Stellérides les odontophores."

Unfortunately for his theory, however, these *interradial* abactinal plates of the young *Asterias* develop in other Starfishes into relatively large plates which remain in more or less close relation with the dorsocentral, and are the very plates described as basals by Sladen not only in the larval *Asterias*, but also in the following genera—*Zoroaster*,<sup>3</sup> *Pentagonaster*, *Tosia*, *Astrogonium*, *Stellaster*, *Nectria*, *Ferdina*, *Pentaceros*, *Gymnasteria*, and others.

As there is an odontophore on the ventral side in each of these types, it is perfectly

<sup>1</sup> *Quart. Journ. Micr. Sci.*, 1884, vol. xxiv., N. S., p. 39.

<sup>2</sup> Mémoire sur les Étoiles de Mer recueillies dans la mer des Antilles et le Golfe du Mexique durant les expéditions de dragage faites sous la direction de M. Alexandre Agassiz, *Nouv. Archiv. du Mus. d'Hist. Nat.*, 2<sup>me</sup> sér., 1884, t. vi. p. 159.

<sup>3</sup> Several months before the appearance of Perrier's Report upon the West Indian Starfishes, Sladen figured the apical system of *Zoroaster fulgens*, and described it in the following terms : "Surrounding a dorsocentral and five small radially placed plates are five large plates *interradial* in position ; and outside and alternating with these are five similar but rather smaller radially placed plates. . . . It will be noted that these plates represent in a remarkable manner the dorsocentral, the under-basals, the basals, and the radials respectively of the Crinoid calyx" (*Asteroidea* dredged in the Farøe Channel during the cruise of H.M.S. "Triton" in August 1882, *Trans. Roy. Soc. Edin.*, vol. xxxii. p. 160, figs. 9, 11). Precisely the same arrangement appears in the apical system of *Zoroaster ackleyi*, so far as one can judge from Perrier's figure of an entire specimen (*Nouv. Archiv. du Mus. d'Hist. Nat.*, 2<sup>me</sup> sér., 1884, t. vi. pl. iii. fig. 1) ; but he makes no mention of *Zoroaster fulgens*. Even if he had not seen Sladen's reference to it, one would have thought that he would have been struck by the Crinoidal aspect of *Zoroaster ackleyi*, though he does not refer to it at all, and he gives no detailed description of the plates. It would be interesting to know his reasons for believing that the large *interradial* plates in the immediate neighbourhood of the dorsocentral are not the "plaques de la première rangée" of the larva, which occupy exactly the same position with reference to the dorsocentral, and are believed by Perrier to become the odontophores in all Starfishes *except Caulaster*.