

Pectorals well developed, close to the lower profile; ventrals small; pelvic bone with a bifid spine in front pointing forwards. The dorsal fin occupies the middle of the back and consists of a triangular bony lamella, very thin in front, but strengthened along its hind margin, and followed by several rays. Adipose fin absent, or represented by a very low membranous fringe of the dorsal margin of the tail. The anal fin is incompletely developed, extending from the vent to the root of the caudal fin, its rays being rudimentary, widely set, and scarcely free. Caudal fin broad and forked. Gill-opening very wide, the gill-membrane being attached to the isthmus. A luminous organ occupies the inner side of the operculum close to its lower end; another is placed at the anterior end of the ceratohyal, and, finally, a very large glandular mass is lodged on the upper edge of the anterior end of the clavicle. Gills four; the branchial arches are long, not angularly bent, the branchial slits being closed by a membrane in their upper portion. Only a few of the gill-rakers are prolonged, needle-shaped, and widely set, the others being quite rudimentary. Pseudobranchia present.

*Sternoptyx diaphana* (Herm.) (Pl. XLV. figs. D, D').

D. 10 to 12. A. 12. P. 10. V. 3.

The numerous specimens collected by the Challenger differ not inconsiderably in the shape of the body, which in some specimens is much more oblique than in others; in the width of the upper surface of the head and neck, and, finally, in the size of the eye, which in a specimen 50 mm. long is 8 mm. wide, and in another specimen of the same length only 7 mm. Also the relative position of the luminous organs which are congregated in groups, is subject to unimportant variations.

Two forms may be distinguished.

1. In the first and more common (fig. D), the eye is comparatively larger and its diameter more than the depth of the triangular space, which is formed by the margins of the præoperculum, of the jaws, and of the orbit; the upper part of the mouth is also conspicuously above the level of the lower margin of the orbit.

2. In the second form (fig. D'), the diameter of the eye is not longer than the depth of the triangular space described, and the upper part of the cleft of the mouth is on a level with the lower margin of the orbit.

Both forms occur in the Indo-Pacific as well as Atlantic, and seem sometimes to have been obtained on the same occasion; and as, moreover, intermediate forms occur which might be assigned to either of the two forms, it is evident that the differences mentioned are not of specific value.

Very young specimens of 15 mm. in length already possess all the characteristics of the adult.

As will be seen from the following list of specimens obtained during the voyage, this