

259 he quotes the observation that "the narwal is liable to the annoyance of a similar but smaller animal," but remarks that Dewhurst must certainly be wrong in the opinion which he expresses on the same page 259, that all species of whales are tormented by whale-lice.

1834. MILNE-EDWARDS, HENRI.

Histoire naturelle des Crustacés, comprenant l'anatomie, la physiologie et la classification de ces animaux. Tome premier. Ouvrage accompagné de planches. Paris, 1834.

The Introduction, pages i.-xxxv. is chiefly occupied with an interesting sketch of the literature of Carcinology down to the date of the work then in hand. The First Part, pages 1-200, in the first chapter, discusses the position of Crustacea in the animal kingdom, the character and various adaptations of the Crustacean integument, and its exuviation; in the second chapter, nutrition, respiration, circulation, and secretions; in the third chapter, the organs of sense, the nervous system and the muscles; in the fourth, the apparatus of reproduction and the process of development. In the Second Part, the first chapter, pages 201-236, describes the different systems and methods employed up to that date in the classification of Crustacea, concluding with that preferred by Milne-Edwards himself.

Milne-Edwards considers the normal number of segments of the Crustacean body to be twenty-one, the same segment never carrying more than one pair of limbs. Each segment he composes theoretically of two arcs, an upper one constructed out of two tergal pieces with an epimere or side-plate on either side, and a lower one constructed of two sternal pieces with an episternum on either side. He says that M. Audouin has arrived at this general principle, "*que ce n'est que de l'accroissement semblable ou dissemblable des segmens, de la réunion ou de la division des pièces qui les composent, du maximum de développement des uns, de l'état rudimentaire des autres, que dépendent toutes les différences qui se remarquent dans la série des animaux articulés.*" After discussing the number of distinct segments in various groups of Edriophthalma, he concludes by saying, p. 22, "Enfin nous ajouterons que dans certaines espèces d'Amphipodes les deux moitiés latérales du septième anneau abdominal ne se réunissent pas sur la ligne médiane comme dans les autres segmens du corps, et qu'il prends alors la forme de deux petites lames cornées ou de deux appendices styloformes, disposition très-curieuse en ce qu'elle offre un exemple frappant de la division d'un anneau en deux moitiés symétriques et laterales," with the following note, "Cela se voit dans la Crevette d'Othon E., la Crevette locuste L, etc.; mais, dans la plupart des Amphipodes, ces rudimens des septièmes segmens abdominaux manquent complètement. (*Voy. Pl 1, fig. 5.*)," as though he thought that the presence of a telson in the Amphipoda was the exception, whereas in the limits of this order which he accepted there is no instance of its absence which can be regarded as certain.

The appendages when fully developed, he says, present three distinct parts; the main portion, la tige, the stem which carries the other two and is almost always composed of several joints placed end to end; the second, or palp, is an appendage of the stem, on the outer side of which it almost always takes its origin, generally from the basal joint, but sometimes at the extremity of the second or third joint; the third portion, le fouet or flagellum, also arises from the stem, separating from it always above and on the outer side of the palp, p. 45. "In the natural group of the Amphipoda, the thoracic limbs almost always present in the females the maximum of composition above-mentioned; the stem serves for locomotion; the flagellum becomes membranous and serves for respiration; lastly, the palp takes