

the medio-dorsal line, its extremity being invested by a calcareous network or not, or piercing the body-wall, and communicating with the exterior by one or several pores. The madreporic canal never depends freely into the peritoneal cavity. Ambulacral vesicles often transformed into large branched or unbranched cavities lying within the perisoma. Calcareous ring incompletely developed, either composed of a continuous, very fragile, network, without any distinct radial and inter-radial pieces, or mostly of five radial spicule-shaped pieces. Respiratory trees, ciliated cups, and retractor muscles absent. Sexes distinct.

This order is divided into three families—Elpidiidæ, Deimatidæ, and Psychropotidæ. The latter differs considerably from the two former in the shape of the body, which approximates often in general appearance to that of certain Aspidochirotæ; the presence of a more or less distinct margin round the body gives it a rather depressed aspect, and the head portion of the representatives of this family is generally considerably flattened—almost discoidal. The completely ventral position of the mouth, the arrangement of the comparatively minute pedicels in a single row round the above-mentioned brim, the presence of a double row of pedicels along the odd ambulacrum, &c., may be considered as characters which give the Psychropotidæ the right of being placed side by side with the two other families. Particular attention must be paid to the lateral pedicels, which are more numerous in the Psychropotidæ, and either small and retractile, or resembling more or less prominent protuberances, while those in the Elpidiidæ and Deimatidæ are as a rule large, wide, cylindrical, and non-retractile; besides, in both of these families the tentacles are very seldom capable of being drawn within the body, and their dorsal processes, mostly of considerable length, are often symmetrically arranged in pairs. The Elpidiidæ differ from the others in having the calcareous ring constantly composed of only five radial spicula, while in the other families it seems to be made up of a fragile net-work. The Deimatidæ are distinguished from the Elpidiidæ by their dorsal processes being more numerous, generally longer, densely crowded, and arranged in one or several continuous rows along the dorsal ambulacra; by their generally more elongated body, by the form of the calcareous deposits, by the number of the tentacles, &c. The Elpidiidæ have, with but few exceptions, ten tentacles, and the perisoma is always strengthened by branched or unbranched spicula.

#### Family I. ELPIDIIDÆ.

Body varying greatly in shape from very long, cylindrical, and Synapta-shaped, to rather short, almost globular, or strongly depressed, nearly flat; tentacles as a rule ten, in a few forms eleven to twelve or twenty; mouth seldom completely ventral, usually almost terminal, though more or less distinctly turned towards the ventral surface; the lateral ambulacra of the ventral surface bearing long and wide, cylindrical or conical,