muscles. The longitudinal muscular bands are in close relation with the proboscis-sac. Their exact disposition was not made out, and their arrangement, as shown in the figure, will possibly need correction.

"On the whole, *Pelagonemertes* is a form of considerable zoological importance. In the flattened form of its body, and in its dendrocœlous digestive tract the animal resembles Planarians. Amongst the Rhabdocœles the *Prostomeæ* possess an exsertile proboscis like that of Nemertines, but such an organ is present in no Dendrocœle. In all particulars—in being unisexual, in the simplicity of the generative organs, in the form of the nervous and vascular systems and of the proboscis, in the position of the mouth and presence of an anus—in all essential structures *Pelagonemertes* is most distinctively a Nemertine. Only in its remarkable dendrocœle intestine does it differ from all other Nemertines, and (but this is of far less importance) in the modification of its tissue into the peculiar hyaline gelatinous condition which is characteristic of so many otherwise most widely differing pelagic animals.

"The development of the dendrocœle intestine is very remarkable, in that the lateral ramifications are apparently to be regarded as a series of buds occurring successively from before backwards from a previously straight digestive tract, such as exists in other Nemertines. In this the digestive tract differs entirely from that of dendrocœlous Planarians, such as *Leptoplana tremellaris*, in which, as we know from the observations of Keferstein ('Beiträge zur Anatomie und Entwickelungsgeschichte einiger Seeplanarien von St. Malo,' Abhandl. der k. Gesellschaft der Wiss. zu Göttingen, 4ter Band, Göttingen, 1868, Taf. iii. figs. 19, 20, 21, text p. 34), 'the great yelkballs arrange themselves in the embryo with regularity and map out the form of the future digestive tract,' the peripheral ramified part of the tract being formed at the same time as the central portion.

"The peculiar form of the front of the body of *Pelagonemertes* may be regarded as an instance of the excessive formation of the head lappets of many Nemertines. In having no ciliated sacs and an unarmed proboscis, *Pelagonemertes* resembles *Cephalothrix*, but the animal must evidently be placed in a new family of Nemertines, for which I propose the term Pelagonemertidæ, thus characterised:—

"Animal pelagic in habit. Body gelatinous, hyaline, broad and flattened. Proboscis unarmed. Ciliated sacs absent. Special sense-organs absent. Digestive tract dendrocœlous.

"The occurrence of a second specimen of *Pelagonemertes* off Japan shows that the animal has a wide distribution. It was found on both occasions adhering to the trawl-net, and is, from its very slight consistency, easily overlooked. Hence it may have been often missed by us, and probably is as widely distributed as other oceanic forms. Since it has never been taken by former observers of pelagic animals nor by us in the tow-net, it is very probable that it occurs only in deep water, and does not come to the surface; it is, however, most evidently not an inhabitant of the sea-bottom.