and of the female (vaginal) ducts, there is a distinct uterine opening at the opposite end of the body *(b).* Moreover, in *Amphilina liguloidea* a fourth duct (the anterior vagina) begins close to the origin of the female duct, and after running forward a short distance ends blindly (see fig. 7, C). The egg gives rise to an oval larva, one half of which is ciliated and bears gland-cells, the opposite end carrying ten hooks. The fate of the larva is unknown.

Family II. *Gyrocotylidae.—*Leaf-shaped animals with crenate margins. One extremity carries a pedunculate rosette-organ. It is traversed by a canal from which a peculiar proboscis-like structure can be exserted. The opposite end is pointed and provided with a terminal sucker. *Amphiptyches (=Gyrocotyle) urna* (fig. 1, B) is found in the intestine of *Chimaera* and *Callorhynchus,* and has been almost fully described by Spencer (7). The embryo is pro­vided with ten hooks, and appears to select Lamellibranchs *(Mactra)* for its intermediate host.

Family III. *Caryophyllaeidae.—*Elongated cylindrical animals either with a single subterminal sucker at the proximal end, or with the corresponding end of the body converted into a mobile undulatory fold. *Caryophyllaeus mutabilis* occurs in the roach and other fresh-water fish, and passes its earlier stages of develop­ment in fresh-water Oligochaete *(Tubifex). Archigetes appendiculatus* lives throughout life in the coelom of *Tubifex* and of *Limnodrilus.*

*Archigetes* and *Caryophyllaeus* are the only Cestodes that become fully differentiated in an invertebrate host. The former indeed is said to produce fully developed gonads, and if kept in aquaria with *Tubifex,* the number of infected worms steadily increases, a fact pointing to the whole cycle being passed through, without the intermediation of a vertebrate host. Conclusive evidence, however, has not yet been adduced to prove this point. The two genera agree closely in form and structure and may possibly belong to the cycle of the same or of allied species. *Archigeles* (3 mm. long) consists of a subcylindrical body and a caudal appendage. The former bears two terminal suckers on the flattened dorsal and ventral surfaces, the latter six hooks near the tip of the tail. The finer structure of the animal has been investigated by Mrazek (10), whose account, however, is published in the Hungarian lan­guage. It shows a close agreement with that of *Caryophyllaeus.* A well-developed cellular parenchyma forms a matrix in which the muscular, excretory and generative organs arc imbedded. The nervous system consists of a ring below the suckers and of a large number of radially arranged tracts running forwards and backwards. *Caryophyllaeus* is an elongated, flattened worm pro­vided with one extremely mobile extremity, the other being drawn out during the animal's sojourn in *Tubifex* into a short hexacanth tail. It becomes fully developed in its invertebrate host, but ap­parently cannot produce eggs until transferred into the intestine of a fish.

Order II.—Merozoa

The Merozoa, to which the ordinary’ tapeworms of man and domestic animals belong, includes the great majority of the Cestodes. They occur in vertebrate animals throughout the globe, though

varying in abundance in different districts and at different times. With few exceptions tapeworms select the small intestine for their station, and in this situation execute active movements of ex­tension and contraction. The body, or “ strobila," consists of a usually minute organ of attachment (scolex or its representative) which is imbedded in the intestinal membrane, and of a series of segments that arise from the base of the scolex and increase in size distally. In one family *(Ligulidae)* the segmentation is only expressed in the metameric distribution of the generative organs and the worm is externally unisegmental. In the remainder the segmentation involves primarily the genitalia and includes the integument, muscles and part of the excretory system. The nervous system is, however, not segmented, and the excretory system is continuous throughout the worm.

*Scolex.*—The scolex is biradially constructed, the proglottides flattened, quadrangular and bilaterally symmetrical. In them a ventral surface containing the usually median male and female genital apertures is generally distinguishable from the smooth

dorsal surface, but in those Cestodes which possess marginal gono- pores this distinction of surface is obscured. In such cases the male organs are regarded as indicating the dorsal surface, the female organs as belonging to the ventral surface.

The scolex is usually a conical muscular structure. It bears adhesive organs that are either suckers or hooks, and may develop into the most varied outgrowths in order to give increased firmness of attachment to its host. Thus, starting from the two shallow pits, one dorsal and the other central, in the simplest forms, we find them becoming two elongated suckers (bothria) in the large family *Bothriocephalidae* (fig. 8); and by fusion of the lips they