ORDER II.—CESTOIDEA.

*Character*.—Body elongate, flattened, soft, continuous, or joint­ed. Head very rarely simply lipped, usually furnished with two or four bothria or suckers. Androgynous.

Genus Tænia.—Body elongate, flattened, jointed. Head

with four suckers. The Tæniæ inhabit the alimentary canal, and principally the small intestines, but they have been found very rarely in the liver and gall-bladder. They occur only in verte- brated animals, some of them nourishing two or three species. Of those species which Rudolphi has described without a mark of doubt as to their reality, we find that one infests man, thirty- two the mammalia, sixty-five the birds, six the fishes, and two the reptiles. These numerous species he divides into two sections ; first, those with an unarmed, and, secondly, those with a prickled head ; but Mehlis has recently shown that many species which are furnished with hooked prickles when young, lose them when they arrive at maturity.

Genus Bothriocephalus.—Body elongate, flattened, jointed.

Head subtetragonal, with two or four opposed bothria. Nearly allied to Tænia. Of twenty-four species described by Rudolphi, one is peculiar to man, three to aquatic birds, and twenty to fishes. The genus has been subdivided into several others by De Blainville. The individuals of one of these subgenera, *Di- bothriorhynchus,* were affixed by the prickles of their probosces to masses of Ascarides, which again were the parasites of a butter­fly.

Genus Triænophorus.—Body elongate, flattened, subarti­culated. Mouth two-lipped, armed on each side with two tricus- pidate spines. There is but one species, a native both of fresh and salt water fishes.

Genus Ligula.—In its state before evolution the body is flat­

tened, continuous, very long, grooved down the middle with a furrow ; and neither head nor genital organs are visible. In its developed state the body is also flattened, unjointed, and very long ; the head armed on each side with a very simple bothrium ; and ovaries are seen on the medial line in a single or double series, with threadlike filaments *(lemnisci).* The species are prin­cipally the intestinal parasites of birds ; two or three kinds are found in fish ; and one has occurred in the common seal.

Genus Tetrarhynchus.—Plate DII. fig 6,—Body flattened,

unjointed. Head furnished with two bipartite bothria, and pro­truding four retractile prickly proboscides. The species are all pis­civorous, although one has been also found in the stomach of a tortoise, and another in some cuttle-fish. They adhere to the ab­dominal viscera, to the gills and fins, and even infest the muscles. Bremser is of opinion that the species are Bothriocephali in an imperfect stage of development ; and Nordmann believes this opi­nion to be correct, at least in regard to certain species. On the genus see Drummond in *Mag. Nat. Hist.* n. s. vol. ii. p. 571, &c. ; and Leblond in *Ann. des Sc. Nat.* tom. vi. n. s. p. 293. The latter took a species from the interior of a fluke-worm or Distoma, a true entozoon, the parasite of another of not superior organiza­tion and scarcely of greater bulk. Helminthology is indeed full of miracles. *Lib. cit.* tom. vii. n. s. p. 249-253.

Genus Gymnorhyschus.—Body flattened, unjointed, very

long, with a subglobular receptacle for the neck. Head furnished with two bipartite bothria, and emitting four naked retractile proboscides. Found immersed in the flesh of some giltheads *(Bramoe)* and rays or skates *(Haji).*

Genus Scolex—Body flattened, unjointed. Head furnished with four bothria. The only species described *(S. polymorphus)* is common in the intestines of many fish and of the Cephalopods. There exists a suspicion that other Scoleces may be metamorphos­ed into Bothriocephali.

Genus Caryophyllæus.—Body flattened, unjoínted. Head

enlarged, scalloped, two-lipped, the lips superior and inferior. The species is common in the intestines of the carps *(Cyprinorum).*

In the preceding order there were no appropriated or­gans of digestion, which begin now to be developed. In the majority of the Tæniæ there are two or four canals which run through all the articulations of the long tape-like body, and which, underneath the cephalic knob, are connected together by numerous anastomoses, forming there a sort of net-work. It is remarkable that no one yet has succeeded in proving any direct communication to exist between these canals and the proboscis. In all the Tæniæ, the Bothriocephali, the Schistocephalus, and in the Triænophorus, the genera­tive apparatus, both fecundating and reproductive, is multi- plicate, while it is simple in Caryophyllæus. The orifices of both apparatus are, it seems, always separate. In *Tetra-hynchus epistocotyle,* Nordmann did not find any sexual or­gans ; and the four retractile spinigerous proboscides led by four canals to as many oblong transparent muscular reservoirs, which, he conjectures, ought consequently to be considered stomachs. In the posterior part of the body of these animals, the same distinguished naturalist discovered a vascular system, composed of several longitudinal canals, and ramified by anastomoses ; but no movement of any liquid could be perceived in it. On the posterior margin of the body there is a thick fringe of cilia, which is easily detached.

The eggs of the Cestoidea are multiform, and vary re­markably in size. According to Siebold, some have a single envelope, and others not fewer than three. The eggs of *Tania stylosa,* when found in the intestines of *Corvus glandarius,* are quite peculiar in their structure ; for they have four envelopes, of which the two external ones are round, the inner one oval, and that which lies between the second and the fourth is very narrow and drawn crosswise, having at the same time two very long twisted diverticula. The eggs of *Tænia cucumerina* deserve also to be parti­cularized, from ten to twenty of them being always placed in a common envelope. The vesicle of Purkinje appears to be wanting in the eggs of the Cestoidea.

The embryo, while yet in the egg, is endowed with cer­tain motions ; and Dujardin discovered that the Tæniæ have then six hooked spinules, or horny falciform teeth, disposed symmetrically in pairs. These spinules have no relation, as one is at first disposed to conclude, with the spinules that arm the interior of the extrusile proboscis, or the circumference of the oval aperture ; for they exist in the embryos of unarmed Tæniæ, as well as in those which are so provided ; nor are the shape and disposition of the two kinds at all analogous.

The articulations of the body are not formed until some time after the embryo has quitted the envelope of the egg, but the first traces of the suckers surrounding the beak are sooner recognisable. It is probable that the little worm from the tench, described under the name of *Gryporhynchus pusillus* by Nordmann, is only the young of one of the Cestoidea, perhaps of a Tænia.

ORDER III—TREMATODA.

*Character.—*Body flattened or roundish, soft, furnished with suctorial pores. Androgynous.

Genus Monostoma—Body soft, roundish, or flattened. The sucker anterior and solitary. The Monostomæ live in the abdo­men and intestines, and have been found in the muscles, of verte- brated animals. Of the species described in Rudolphi’s *Synopsis,* one is from a mammal, nine from birds, ten from fishes, and three from reptiles.

Genus Amphistoma.—Body soft, roundish ; an anterior and

posterior pore or sucker. Of eighteen species, twelve belong to birds, three to the mammalia, and three to reptiles. The genus has been recently subdivided, or its definition will at least em­brace the *Holostomum* of Nitzsch, the *Amphistoma* and *Diplodiscus* of Diesing; and the beautiful *Diplostomum* of Nordmann, found in the eyes of fishes, is nearly related.

Genus Distoma.—Body soft, flattened, or roundish. Suckers

solitary, one anterior, the other ventral. A genus better known by the name of *Fasciola.* The species are the parasites of every order of vertebrated animals, and are exceedingly numerous, nearly 200 having been described. Of these, the most notorious is the *Fluke* (Plate DII. fig. 9), generally believed to be the cause of the *rot* in sheep, by which disease numerous flocks are annually destroyed. Another species *(Fasciola trachea,* Montagu in *Wern*. *Mem.* i. p. 197, pl. 7, fig. 4) breeds in the wind-pipe of poultry, and produces the fatal distemper usually termed the *gapes.*

The three preceding genera are the heads of a large fa­mily, extremely variable in the degree of organization, but, amid this diversity, always marked by having from *one* to *three* suckers of more or less perfect formation. It is from the number, the form, and the position of these organs that