carried from one animal to another. He also supposed that they reached the liver and other internal organs by means of the blood-stream. Other authorities endeavoured to explain the presence of *Entozoa* by supposing that they were transmitted from parents to children. Von Siebold (26) in 1838 discovered the six-hooked embryos of *Taenia,* and came to the conclusion that they could only pass into the fully-formed animal by a kind of metamorphosis. The subject was fully discussed by Eschricht (27), who endea­voured to prove that this phenomenon was of common occurrence among the *Entozoa.* Shortly afterwards ap­peared Steenstrup’s famous work upon the alternation of generations (28), which furnished a ready explanation of the isolated facts till then observed regarding the Cestodes. The most important advances in modern times have been due to the introduction of helminthological experiment by Küchenmeister, by means of which the demonstration has been furnished that certain bladder-worms are the larval stages of particular tape-worms. The first of these ex­periments took place in 1851, when Küchenmeister fed a dog with bladder-worms from the rabbit, and a cat with specimens from the mouse, and succeeded in rearing tape­worms in their intestines (29). Similar investigations on different species have been made by Van Beneden, Leuckart, and others. Of systematic treatises the most important are those of Rudolphi (35), Diesing (20), and Van Beneden (13), while Von Linstow, in addition to numerous scat­tered papers (30, 36), has given us an invaluable list of hosts with their respective parasites (21).

*Anatomy.*

In considering the anatomical peculiarities of the *Cestoda* it will be convenient to describe one particular species and afterwards to indicate the chief differences presented by other members of the group. For this purpose *Tænia saginata,* Göze (7'. *mediocanellata,* Küchenmeister), may be selected as a type, as it has been perhaps more studied than any other, and is one of the species most commonly found in man ; for further details, see Sommer (31).

*Dimensions.—*An average specimen of this tape-worm (fig. 1, A) will measure in a state of moderate contraction about 500 cm., and consist of nearly 1400 segments ; of those which immediately follow the head more than 250 will be found within a length of 5 cm. ; they gradually widen posteriorly, until the widest, which are situated about half-way down the chain, have a breadth of 14 mm. and a length of 6 mm. ; whilst the terminal segments measure 5 mm. in breadth by 19 mm. in length.

The head (fig. 1, B) is spheroidal, 1∙5 mm. in diameter, and bears on its lateral surface four equidistant suckers, which serve for the attachment of the whole worm. After death these are generally retracted, but during life they can be protruded and moved in all directions. They are a special development of the musculature of the body-wall, the radial fibres being the most conspicuous. The tape-worm now being described is abnormal, inasmuch as the front of its head is not provided with a circlet of hooks ; these are well seen, however, in the other common human tape-worm *(Tænia solium),* which bears a double ring of them, situated around a button-shaped muscular pad (*rostellum*) which forms the apex of the head (fig. 1, C). By the varying contraction of the separate parts of this organ the hooks may be moved in different direc­tions, and when the worm is attaching itself they are first extended directly forwards, and then brought back so as to force the rostellum into the tissues of the host. Each hook has a broad bifid base, to which the muscles are attached, supporting a long curved point. In *Tænia saginata,* to the consideration of which we now return, the rostellum is quite rudimentary, and has been described by earlier authors as a fifth sucker or even as a mouth ; it is interesting to note that during its incipient stages it bears a number of minute spines homologous with the hooks of other species. The head contains furthermore the anterior portions of the nervous and excretory systems. The latter of these consists of an annular vessel placed immediately below the rostellum, from which four canals, corresponding to the four suckers, pass backwards ; two of these gradually disappear, leaving two which pursue their course down the proglottides, in connexion with which they will be again alluded to, and open at the hinder extremity of the worm by a common pore. The nervous system of the Cestodes was long sought in vain: although some early investigators described a ganglion, they were unable to give any satisfactory proof of its existence, this having been first furnished by Schneider. It seems generally to consist of a central ganglion lying within the head, from which two cords proceed backwards ; these were regarded by Sommer and Landois as part of the ali­mentary system. Niemiec (6) has recently given a detailed account of its structure in several different species, and its relations have been discussed by Lang (7).

The proglottides arise by a species of budding in the narrow neck which immediately succeeds the head; they are separated from each other by grooves, which are at first so shallow and indistinct that it is impossible to say with certainty where the segmentation really begins. The proglottides which have attained sexual maturity are situated some 30-40 cm. from the head, and measure 1∙5 mm. in length by 5 mm. in breadth. The segments, like the head, consist of a solid mass of tissue in which the various organs are imbedded. Like the Trematodes, the Cestodes were long thought to have no body-cavity or coelom, and hence were called “parenchymatous” worms. Recently, however, a series of inter­cellular spaces has been described by Fraipont (8) as leading into the terminal excretory organs, and these spaces have been inter­preted both by himself aud others as the homologue of a body- cavity, although this opinion has not been allowed to pass unchallenged (see Pintner, 9). The surface of the body is covered by a thin clear homogeneous cuticle, which, according to some authorities, is perforated by fine closely-set pores. The hooks which have been described above, as well as the small spines and bristles found in certain species, are developments of this cuticle. This external covering cannot, according to Leuckart (1, p. 289), be regarded as homologous with the cuticle of other invertebrates, inasmuch as it is not a secretion from a special layer of subjacent cells, but is “the structureless limiting membrane of the connective tissue substance, and is comparable with the so-called basement­membrane found in the other flat-worms . . . between the muscular layer and the dermal epithelium.” It is to be observed, however, that this view has by no means found universal acceptance (see