whence it was separated. Now particles of matter fitted by digestion, and their transmission through a living body, for immediate assimilation with it, or flakes of lymph detached from surfaces already organized, seem neither to exceed nor fall below that simplicity of structure which favours this wonderful development; and the supposition that, like the morsels of a Planaria, they may also, when retained in contact with living parts, and in other favour­able circumstances, continue to live and be gradually changed into creatures of analogous conformation, is surely not so absurd as to be brought into comparison with the metamorphoses of Ovid.@@1 It is a speculation fairly open to inquiry ; and indeed one main argument in favour of the spontaneous generation of Entozoa, is the admitted inadequacy of all other hypotheses to explain the facts. Is it possible to believe of a worm which has been found, during the nineteen centuries of the world’s age, in one or a few individuals only, that its eggs can have been trans­mitted from generation to generation, and be thus so very rare in its perfect state ? But we have one proof at least that a change of condition in an animal is capable of ge­nerating a worm, for a good authority assures us that a parasite found in the flesh of the domestic swine is not to be found in the wild race ;@@s and Dr Jenner ascertained that he could produce hydatids and fluke-worms at will in rab­bits, by feeding them *solely* on green succulent food.@@3 How but from innate workings are we to explain the first origin of worms that have neither sexual organs nor ova, but, like the hydatid, increase from buds that pullulate from the inner surface of the vesicle that contains them? And Rudolphi has even seen what he believed to be young nas­cent Tæniæ germinating from the villous surface of the bowels. We think the hypothesis is supported also in some degree by the fact, that the origin of Entozoa in general is favoured by all causes which tend to disturb the equality between the secerning and absorbent systems. Thus there is great reason to believe that some inflammatory action of the liver, of the eye, and of other wormed viscus, precedes the evolution of parasites in them ; and it is well known that a morbid state of the alimentary canal, especially an abundant secretion of unhealthy mucus, is connected with the production and increase of all intestinal worms, so much so that Broussais believes an inflammatory state of the mucus membrane to be even an essential condition to their existence. It is obviously necessary to suppose that there are unknown conditions or laws regulating this, the spon­taneous growth of worms within us, so that a certain uni­formity in the products is the result ; but it seems not more difficult to admit the existence of such laws, overrul­ing the destiny of unappropriated organic matter, than their existence and rule over the shred of a Planaria severed from another’s body. That there are such laws of regula­tion, we infer from the fact that the detached portions of a Planaria, a Hydra, or a Nais, invariably evolve into their respective species ; and from the analogous fact that the worms of the different cavities and textures are usually dis­similar, as might have been expected from the dissimilarity in the structures from which their unformed and unsemi- nated embryos are separated.@@4

The variety in the exterior forms of intestinal worms is sufficiently great to form the basis of their classification into subordinate divisions. Thus we have the round or cylin­drical worms *(Nematoidea) ;* the sacciform with prickly pro­boscides *(Acanthocephala) ;* the flat or fluke worms (*Trematoda) ;* the tape-worms *(Cesloidea) ;* and the cystic or hydatids *(Cystica).* In very few of them are there any external appendages, either to diffuse or heighten their sen­sibilities and perceptions, or to assist in locomotion ;@@5 but we can distinguish in all of them a head, a body, and an anal extremity ; in some there is a neck ; in the Trematodes, one or two ventral suckers ; and in some the organs of generation are protruded. The skin is commonly white, smooth, thin, and moist, but coriaceous in many of the Acanthocephala, and sometimes roughened with reverted prickles. Minute black points, suspected to be visual organs, bespeckle the anterior extremity of some non-para- sitical genera *(Planarias)* often classified with the flukes; and similar specks have been discovered on a few true Entozoa at certain stages of their development. Thus they are of a brilliant lustre in the *Phanοglene* and *En- chelidiurn;* and traces of them are visible in the *Gyrodac­tylus auriculatus,* in several *Cercaria,* in the *Polystoma integerrimum,* in the young of many *Distoma, Monostoma,* and *Amphistomae,* and in the *Scolex polymorphus.@@6*

The internal structure of the Entozoa is as various as their outward form, and in some degree of harmony with it, as will be proved when we come to explain the charac­ters of their classification. It ranges from a homogeneous structureless tissue, such as composes the whole of a zoo­sperm, to that of an animal with organs of defined limits and function, such as we find them in a nematoid worm, where there are distinct muscles, a perfected apparatus of digestion, and a system of generation on male and female individuals. In a very few intestinal worms, anatomists have recently demonstrated the existence of a slightly de­veloped nervous system. In others, there exists a system of vessels, in which an obscure circulation of a colourless fluid has been seen ; but in none of the class is there any trace of a distinct respiratory organ,@@7 the functions of which are performed by the skin or surface. The genera whose habitat is the alimentary canal, may have a slightly oxy­genated atmosphere to breathe ;@@8 but such as live in the muscles, in the humours of the eye, or in the brain, no uncombined air can reach ; and we are forced to conclude that all the oxygen they require for existence is communi­cated to them through the fluids they feed on, or from the blood as it circulates over the surfaces with which they are contiguous, or from the medium in which they float. They doubtless require but a small supply, for the heat that is evolved by respiration in other animals is here furnished

@@@1 See an Essay "on the Equivocal Generation of Entozoa,” by Dr Drummond, in the *Annals and Magazine of Natural History,* vol. i. p. 101—108 ; and Dr Good’s *Study of Medicine,* vol. i. p. 292, &c. The argument, as bandied by Dr Drummond, does not satisfy us ; and the analogies adduced to invalidate the doctrine of equivocal generation by Dr Good seem far fetched, and some of bis alleged facts are not true. The remarks of Andral in favour of their spontaneous origin are strongly stated. See the article “ Hydatids” in *Cyclop, Pract. Medi­cine,* vol. ii. p. 4-10.

*@@@i Cyrticercus cellulosa:* "The fact of its being found in the swine which man has domesticated, and not in the wild race, appears to furnish an instance of organized bodies which have been formed long after the general creation.” Blumenbach’s *Elem. of Nat. History,* trans, p. 243. The fact has been contradicted : but the history of insects and infusory animalcules furnishes us with many similar, so that the argument is not invalidated.

*@@@3 Cyclop, of Pract. Medicine,* vol. ii. p. 438.

@@@4 The reader will find the subject discussed at great length by Rudolphi in cap. xviii. of bis *Historia Nat Entozoorum,* vol. i. p. 370-416. @@@5 The *Phanoglene,* which lives in the larvte of some neuropterous insects, has some prolongations like antennæ ; and Diesiug bas described some genera *(Ancyracanthus, Heterochoilus)* with heads furnished with filaments of various forms.

@@@6 Lamarck’s *Anim. sans Vert.* iii. p. 546, note 1, 2d edit.

@@@7 Respiratory tracheæ, similar to those of insects, have been ascribed to some of the nematoid worms, but erroneously. See Rudolphi *Entoz. Synopsis,* p. 579, &c.

@@@8 Μ. Chevreul, however, found no oxygen in the gas of either the small or great intestines of three different subjects. See Bostock's *Physiology,* vol. ii. p. 490.