Russia.@@1 If any evidence can be drawn from the silence of Otho Fabricius, it would seem that the Greenlanders are not subjected to the tape-worm, but they breed the Ascari­des abundantly.

Intestinal worms, as their name implies, are found prin­cipally in the alimentary canal, and the viscera subservient to its functions. There are species, however, which have their appropriated seats in the cellular and adipose and serous tissues, and in the parenchyma of the most secret organs. One species peoples in myriads the voluntary muscles, and more than one has penetrated the heart ; several develope themselves in the lungs and air-passages, in the liver, the kidneys, and the brain ; one or more have entered the blood-vessels or aneurismal tumours connected with them;@@2 some float in the humours of the eye; and more than one loathly worm bathes unharmed in the acrid excretion of the urinary organs. If indeed we except the bones, the cartilages, and ligaments, no organ seems ex­empted from the occasional attacks of worms, unless it be the spleen, in which, according to Rudolphi, no worm has yet been discovered ever to take up its abode. These parasites may in one sense be considered as accidental, since they are found in certain individuals only of the spe­cies they infest ; and there can be no doubt, although their evil deeds have been frequently much exaggerated, that they become not seldom the cause of serious or fatal dis­ease. And here we may cursorily notice an opinion which has found its advocates in every period of the history of medicine, that most contagious diseases, fevers, and plagues originate from animalcules introduced into the body, and are propagated by their communication to other bodies through the medium of the atmosphere. Linnæus was a believer in this hypothesis, which has recently been sup­ported, with much ingenuity, by Dr Holland, who however properly remarks, that “ though the course of discovery has recently been approaching, in some points, nearer to the hypothesis in question, it still furnishes nothing beyond stronger presumptions and more numerous analogies” in its favour.

If animalcules can be so pernicious, and we admit that no more probable cause of many pestilences, and especially of cholera, has been assigned, their influence is, according to physiologists, more than counterpoised by the share which another class of them has in the continuance and propaga­tion of the species. This class is by naturalists named the *Spermatozoa,* of constant and invariable presence in the se­minal fluid of every animal capable of propagating its kind ; but they are absent in that of the mule, and of other animals which may be sterile from age or the season of the year. Like the accidental Entozoa, the Spermatozoa of every animal has its peculiar characteristics, but the differences between them are comparatively slight. “ They all agree in having slightly oblong and flattened heads, with length­ened tails, tapering so as to become nearly or quite invisible with the best glasses ; they possess active powers of motion, and are evidently endowed with sensation. No trace of organization has yet been discovered in them, probably on account of their extreme minuteness. Whether essential to generation or not, they may be regarded as the parasites of the tubuli semeniferi.”@@3

The origin of the Entozoa within animal bodies, and their viscera, has for long been the subject of much debate and curious speculation. It was a hasty disposal of the question to say that they were no other than the worms of stagnant waters, of marshes, and of vegetable roots, intro­

duced within the body, either in their perfect or *egg* state, but altered in their appearance and character by the genial heat and other novel circumstances by which they were now surrounded. Though this explanation had the support of Linnæus, and has lately found a strenuous advocate in one of the most learned men that ever graced the medical profession, it has been long known to be quite untenable ; for no fact is better ascertained than that intestinal worms are found solely in animal bodies, where only they can live and propagate. The instances to the contrary which have been alleged, of tape-worms and flukes living in marshes, and of earth-worms in our bowels, are known to rest on fiction or incorrect observation ; so that, in the discussion of the question, it must be assumed as a fact, that the worms are born in, and peculiar to, the places where we find them. This assumption presented no difficulty to the earlier naturalists, who were unanimous in the belief that all worms were the results of a putrefactive process ;

putrefaction into life fermente, And breathes destructive myriads ;

or of spontaneous generation ; the spawn of a superabun­dant phlegm, vivified by the heat and fermentation of the belly. But to this ancient doctrine the experiments of Redi on the generation of insects gave the death-blow.@@4

To explain the beginning of these worms within the body on the common doctrine that all created beings pro­ceed from their likes, or a primordial egg, is indeed so diffi­cult, that the moderns have been driven to speculate, as our fathers did, on their spontaneous birth ; but they have revived the hypothesis with some modification. Thus it is not from putrefaction or fermentation that the Entozoa are born, for both of these processes are rather fatal to their existence, but from the aggregation and fit apposition of matter which is already organized, or has been thrown from organized surfaces. Thus Buffon applied his doctrine con­cerning organic molecules to account for their genesis. Milk, he tells us, “ consists entirely of organic and prolific matter, which, when not properly digested by the stomach, and applied to the nourishment and growth of the body, assumes, by its natural activity, other forms, and produces animated beings, or worms :” hence their commonness in the bowels of children ; and their origin in the most hidden organs has the same source, for the “ living organic parti­cles” may, from various causes, be forced too abundantly to any part of the frame, and living creatures in that part are the result of their union. Rudolphi has adopted an opinion very similar to that of Buffon ; for it appears to him that the objections which their history furnishes to a belief in their sexual propagation are insurmountable, and that we must of necessity believe in their spontaneous appearance, or rather in their production from the fit apposition of organic particles that have not been assimilated with the parent body, or from the separation from it of organized particles, which, retaining their proper life, become the germs of an entozoan in situations and under circumstances favourable for their development and metamorphosis: Their origin in this manner is not more wonderful, or more inexplicable, than that of many of the inferior animals from sections of themselves. The Nais, the Planaria, and the Hydra, furnish examples of animals of as perfect orga­nization as worms being thus propagated ; for if a small por­tion is cut away from any species of these genera, and placed in a suitable position, it will continue to live and grow, and develope new organs, until it has acquired in every re­spect the form and structure and habits of the animal from

@@@, Rudolphi *Entοz. Hist.* ii. part ii. p. 72, comp. p. 162.

@@@2 “ On Animals in the Blood,” sec the *Lancet* for August 1840, p. 778.

@@@3 Hodgkin’s *Lectures* vol. i. p. 213. On these animated bodies, the reader will find ample information in Blainville's *Manuel d'Actinolοyie,* 573, &c.

@@@4 Of various hypotheses of the earlier writers, Le Clerc has given an excellent account in his chnpter xiv., "on the origin of Worms in ani­mal bodies.” *History of Worms,* trans, p. 329, &c.