

When the queen deposits an egg in a large cell intended for a male, the edge of the cell exerts no pressure upon the abdomen, or the pressure is exerted only above the seminal receptacle; the latter therefore is not raised, and the oblique position of the ejaculatory canal in relation to the oviduct prevents the ejaculation. Thus, according to the author, it is to the difference in the diameter of the cells that the production of the different sexes in the Hive-Bee is due.—*Moleschott's Untersuchungen; Bibl. Univ. de Genève*, September 1858, p. 94.

On the Development and Propagation of the Trichocephalus dispar and Ascaris lumbricoides. By C. DAVAINÉ.

1. The *Trichocephalus dispar* occurs so commonly in the cæcum of man, that the author calculates that in Paris one-half of the inhabitants are infested by it. The development of this worm has not been observed, and its mode of transmission is quite unknown. The eggs are frequently evacuated with the fæces. The repeated examination of eggs found in the contents of the intestine of corpses, or in the evacuations of patients, leads the author to conclude that *these ova undergo no development in the human intestine, and that they are always expelled in the condition in which they escape from the body of the mother.* The author therefore attempted to obtain the development of the ova in water, but several times without success. At the end of September, 1857, he collected a great quantity of these ova, and washed them for several days, until the water containing the ova was limpid and destitute of any odour. The liquid was renewed from time to time, and the ova were examined with the microscope every week. A certain number underwent alteration; others remained uninjured, but without presenting any trace of development. At the beginning of April, after six months' watching, the vitellus, in some of these ova, collected into a rounded mass and acquired some consistence, as was proved by crushing the ova. Some days afterwards, the vitellus in many ova underwent segmentation into two, and then into four parts; the segmentation then followed the ordinary course, and, at the beginning of May, many of the yolks had acquired a mulberry-like appearance. From this time no change was observed until the 12th of June, when some of the ova contained a well-formed embryo, recognizable by its movements. This embryo, which to a certain extent possesses the form of the adult, tapers gently from behind forwards; its length is about $\frac{1}{10}$ millim.

2. On the 8th of October, 1857, the author collected numerous ova of *Ascaris lumbricoides* by washing the fæces of a child who had passed several of these worms. These ova were preserved in pure water, and examined from time to time, like the preceding. For six months no change was observed; but on the 14th of April several of them had undergone segmentation into two, and some into four parts, whilst the greater number exhibited no change. On the 30th of April, segmentation had taken place in all, but in various degrees: in some the vitellus represented a small mammillated sphere; on the 5th of May this had become reniform, and on the 7th the embryo

was apparent. The embryo is cylindrical, with the caudal extremity suddenly terminating in a point; its length is $\frac{1}{4}$ millim.: its mouth does not show the three tubercles characteristic of the *Ascarides*. From the 7th of May to the 21st of June the embryos had continued living within the shell of the egg, and none of them had escaped.

The author placed the ova in the gastric juice of the rabbit and dog; but after staying in these fluids for three or four days, the shell remained perfectly intact. M. Richter, who placed the ova of this worm in water, found, after the lapse of eleven months, that they contained embryos; but he was unable to see them hatch.

The ova, like those of the *Trichocephalus*, are evacuated with the fæces; and before their evacuation they never show the least trace of development. In October last, ova kept for a fortnight at a nearly constant temperature of 86° F., acquired no development. The same ova, left in a room in which the temperature never exceeded 61° F., underwent segmentation in April. Ova collected in January underwent segmentation in June; whilst others collected in April presented no trace of development in June, notwithstanding the great heat of the season. Temperature therefore would seem to have little or no influence on the ova of *Ascaris lumbricoides*, which require to remain for a long time in a state of latent life.

Hence the author concludes—1. That the ova of these worms are developed out of the human body; and 2. That the appearance of the embryo does not take place until after the lapse of eight months in the one case and six months in the other. In this long interval, the ova may be transported by rains into brooks, rivers, and wells, the water of which is used for drinking and preparing food. In this way the fully-developed ova or the embryos may find their way into the human intestine.—*Comptes Rendus*, June 21, 1858, p. 1217.

Note on *Enteromorpha cornucopiæ*.

By Dr. J. E. GRAY, F.R.S. &c.

Professor Harvey admits this species with doubt, on the authority of the late Capt. Carmichael (*Phytologia Brit.* t. 304); but I think there can be no doubt that Lyngbye and Agardh are correct in regarding it as a variety of *Enteromorpha intestinalis*, or rather, a form of that species produced by the peculiar position in which it is found.

It is very abundant in one locality in Broadhaven, in St. Bride's Bay, South Wales, growing where some fresh water trickles down the side of a nearly perpendicular rock. The whole width of the trickle is covered with the green Alga as close as it can grow, side by side. The plants on the top of the higher and nearly horizontal ridges, which the water only trickles over, are all the bell-shaped *E. cornucopiæ*, f. 3, and the specimens on the perpendicular parts are the oblong tubular specimens of that plant, like f. 2 of Dr. Harvey's plate above quoted, while the specimens growing in the pools left in the small cavities of the rock are all more or less elongate normal *Enteromorpha intestinalis*.

The bell-shaped form in some instances appears to be produced by the withering-away of the upper part of the oblong specimens; in



Davaine, Casimir-Joseph. 1858. "On the development and propagation of the *Trichocephalus dispar* and *Ascaris lumbricoides*." *The Annals and magazine of natural history; zoology, botany, and geology* 2, 491–492.

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