THE RÔLE OF CHÆTOPODS (SEGMENTED WORMS) IN THEIR RELATION TO MAN

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THE Annelid worms comprised within the orders of the Oligochætes (earth-worms) and Polychætes (sea-worms) do not often come within the purview of the medical man or pathologist, although the occasions on which they do so are interesting and sometimes important. It is from the economic point of view that they must be assessed to be of much greater interest to man.

Their economic importance was pointed out of course by Charles Darwin who realised what a vast influence the earth-worms have in the cosmogony of Nature by their uplifting of the soil and amplifying the bounties of plant life to man. Then the aquatic species provide fish with much of their food, for example the Oligochæte Tubifex, which burrows in the soft mud of shallow collections of water, is preyed upon by fish just as are the earth-worms on land by birds, and likewise the Polychætes, or bristle-worms, which live in the sand or slime on the bed of the sea or tidal rivers, provide food for vast numbers of fish, these worms indeed being sometimes used as baits by fishermen. And more directly than this, man sometimes uses these creatures for food; Professor Percy Moore of Pennsylvania University has informed us that he has seen Italians engaged on rail-construction in the United States using earth-worms for making soup, the worms being boiled and the solids then strained off and discarded. They cannot however be considered to have much direct food value to man, otherwise they would not exist in such numbers as they do while poor beggars are rummaging in dustbins for scraps of food. At any rate we are told by Dr. Hutton on the authority of a friend of his who made a 'practice of experimenting on every sort of animal and insect food' that they are 'uninteresting' to the palate.

While the Chætopods have not yet made their appearance in the pharmacopœias of any 'western system' of medicine one may note that they are made use of in certain other 'systems', and in this connection we cite Gate (1925) :—

'Worms are used in various preparations by the native doctors both in Burma and India. In Burma the most important use is in treatment of a disease called "Ye se kun byo", the symptoms of which as described by Burmans greatly suggest pyorrhœa. The worms are prepared by heating in a closed pot until reduced to ashes. The ashes are either used alone as a tooth-powder, or to the ashes are added roasted and pounded tamarind seeds, and unseasoned betel-nuts to make up the powder. This is supposed to be a sure cure for the disease. When attempts have been made to learn which species of worms are used for this medicine, the answer is invariably, "Oh, just the common one found crawling around during the rain".

In a disease called "Me kha yu" the symptoms of which are white-spots on the tongue and membrane of the mouth, slight fever, laxity of the bowel, and, in very small children, inability to suckle, the remedy is worm-ash applied to the spots in the mouth. It is also used similarly for canker.

A disease called "Kalay yawga", the symptoms of which are vomiting, laxness of bowels, and excessive thirst. For this earth-worm castings are roasted, shaken thoroughly in water, and the clear fluid decanted. Dose—a cupful to be drunk once a day. This is said to be "very cool medicine for hot stomach".

A disease called "Mainma mecphwa noyeekhun thwaykhan". Symptoms are general weakness after pregnancy and inability to nurse the child. The common worms are boiled in water with salt and onions. The clear fluid is decanted and mixed with curry or other food.

A disease called "Panthay ana", the symptoms suggesting impotency. The oil from the bodies of three tocklus is mixed with five ticals weight of sesamum oil. In the mixture three large worms are boiled. The oil is decanted and used to massage the penis. This is said to be "exceedingly powerful medicine".

The earthworm Lumbricus is used by quacks in India and in some cases by the Kavirajes as a medicine. It is boiled in pure mustard oil and the preparation applied as an antiseptic to ulcers and sinuses.

The body-juice of fresh Lumbricus mixed with fresh raw milk or butter is often widely used for apthous and ulcerative stomatitis not yielding to other medicines'.

Such are the examples of Chætopods in their rôle of utility to man. From the medical standpoint we have a few but interesting records.

From the public health side we have found earth-worms in their early stages appearing in the water-supply of large cities. In one case that came to our notice it was thought that the young worms had migrated through the soil down to the mains and been sucked in to the pipes through a gap in the joints.

On the other hand we have a few reports of Oligochætes 'parasitising' man.

Curling (1839), cited by Blanchard (Blanchard and Savignac, 1910) reported 'worms'

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appropriate treatment where necessary. Each endemic area needs to be visited at least once in three months.

In conclusion, I wish to express my thanks to Dr. D. Naidu for his loyal co-operation and help in collecting statistics and local information, and in treating cases under adverse conditions.

REFERENCE

Barker, F. A. (1925). A Case of Framboesia in the Nicobar Islands. *Indian Med. Gaz.*, Vol. LX, p. 29.

Dactylus aculeatus from the urine of a child. They were thought to be helminths, but the figures given suggested that they were the Oligochæte species *Euchytræus albidus* Henle.

Waldenstrom in 1873, cited by Blanchard (Blanchard and Savignac, 1910), reported a case in which there was a vaginal discharge, irritation of the pudenda, and the patient complained of violent pains on any movement. After about a year a common earth-worm emerged from the vulva and the pain ceased immediately. Apparently the worm had caused the symptoms; the pain was probably due to the setæ, and the creature had lived for such a long period as a 'pseudo-parasite'.

Bergh in 1885, cited by Blanchard (Blanchard and Savignac, 1910), *q.v.*, found *Euchytræus buchholzi* in the mouth of a patient suffering from weakness, salivation, and vertigo. Possibly this species had been imbibed with well-water. The author thought that after entering the stomach it had later been evacuated into the mouth.

Hanau in 1899, cited also by Blanchard (Blanchard and Savignac, 1910), reported the case of a young woman who affirmed that certain worms which she exhibited had come from a perityphlic fistula of 4 years' standing. They were identified as *Henlea nasuta* and *Microscolex modestus*. But she later confessed to having placed earth around the opening of the fistula 'in order to keep it fresh'.

Delage in 1905, cited again by Blanchard (Blanchard and Savignac, 1910), recovered a specimen of *Allolobophora fœtida* from the urine of a patient.

Blanchard and Savignac (1910) gave a detailed account of a case watched for over 4 years in which there was reported nausea and general malaise, simple or bilious vomiting, and indigestion, and in which some worms were discovered by the patient in the vomit. These worms were *Henlea nasuta* and *Friederica bisetosa*, they were always produced dead, and none appeared in the stools. The authors finally concluded that the case was one of neuromimesis.

Heymons (1926), described the passing of *Pachydrilus lineatus* on two occasions in one week. He was inclined to disregard the occurrence as accidental until two others came to his notice, leading him to the opinion that the species being very adaptable in its habits might very well come to live in the human intestine.

Müller (1927), later asserted that there was no doubt about this worm's ability to live in the human intestine as he was aware of a case of abdominal trouble which had been relieved when a number of the worms had been passed.

With regard to the Polychæta in relation to pathology we have the following records :—

Biswas and Strickland (1927) described a living polychæte worm of the genus *Nereis*, a mature, active individual about an inch long, which was discharged in muco-pus from the nose of a patient after much coughing and sneezing in the course of an acute and painful attack of coryza due to, or aggravated by, the presence of the worm. Although Nereids are typical marine worms, some of them, like a great diversity of other marine animals, have considerable power of adaptation to the sundry tidal and seasonal variations of deltaic waters, such as the Hooghly at Calcutta. What is remarkable is that the creature should have found its way unnoticed into a man's naso-pharynx, and having done so, could have lived there for a week or more.

Dr. Sur, of the Calcutta Medical College, has brought to our notice another worm, which has been kindly identified for us by Mr. Monro of the British Museum as *Nereis* (*Lycoris*) *verrilli*, Grube. The specimen was a typical Indian marine species and showed no signs of having been affected by intestinal juices. It lived for about 3 days in tap water and then another 4 days in normal saline, in which it laid a large number of eggs which did not hatch out. It was passed in the stool by an apparently-healthy child about 2 years old. It was detected moving in the child's motion when the mother went to wash it away from the floor of the house where it had been evacuated.

Conclusion

We may conclude by asserting the vastly greater importance of these worms to man from the economic point of view rather than the medical. The comparatively few medical cases that have been reported may be grouped into two classes, firstly those of interest to the psychiatrist, and secondly those to the surgeon or gynæcologist, these being probably all due to contamination of the water in the use of man, the worms adapting themselves to such diverse situations as the vagina, nasopharynx and intestine.

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