

## **Descriptions of three Filariae / by Joseph Leidy.**

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2.

*Descriptions of three Filariæ.*

BY JOSEPH LEIDY, M. D.

1. *FILARIA Hominis oris*.—Body white, opaque, linear, thread-like; mouth round, simple; posterior extremity obtuse, furnished with a short, curved, epidermal hooklet 1-500th in. in length, by 1-2000th in. in diameter at base.

Length 5 inches 7 lines, greatest breadth 1-66th in.; breadth at mouth 1-250th in.; at posterior extremity 1-80th in.

*Remarks*.—The description is taken from a single specimen preserved in alcohol, in the collection of the Academy, labelled "obtained from the mouth of a child."

Is it a young individual, or perhaps a male of the *Filaria medinensis*, or Guinea-worm? The latter, as is well known, infests the human body, often growing to an enormous length, several yards or more, in the intertropics of Asia and Africa. It is frequently brought in the body of negro slaves from Africa to America, where no entozoon of the kind has ever been noticed to be parasitic in man as an indigenous production. From some late observations on the course of life of entozoa, helminthologists have been led to suspect that most, and probably all entozoa pass different stages of their existence in different animals. If such be the fact, may the *Filaria medinensis* not owe its introduction into the human body, from the custom which prevails in those countries, where the worm is found, of using insect food? Insects are well known to be infested with *Filariæ*, probably more than any other class of animals. In Egypt, Arabia, &c., the locust is eaten; in Guinea, &c., the larger coleoptera; in the raw state, and in this condition *Filariæ* may often be swallowed, and reach a higher developement of their existence in the human body.

2. *FILARIA Canis cordis*.—Body white, opaque, linear, nearly uniform throughout, posteriorly subulate, pointed; mouth simple, round.

Length 10 to 10½ inches, greatest breadth 2-5th of a line, anteriorly 1-5th of a line; half an inch from posterior end, 1-10th of a line.

*Remarks*.—The description is taken from two individuals preserved in alcohol, in the collection of the Academy, presented by Dr. R. Coates, who obtained them, according to the label upon the bottle, from the parietes of the heart of a dog.

3. *FILARIA Boa constrictoris*.

Q. Body white, cylindrical; integument translucent, longitudinally striated; mouth simple, round; œsophagus cylindrical, opaque white; intestine opalescent, cylindrical, tortuous, corrugated, wider than the œsophagus; anus terminal, round; generative aperture close to the mouth; ovaries two, very long and very tortuous.

*Remarks*.—The description is taken from two specimens; one 10 inches long, by 4-5ths of a line wide, the other 6½ in. long by 3-5ths of a line wide. In the former the œsophagus is 9 lines long and 1-3d of a line wide, the intestine 13 in. long and 3-5ths of a line wide.

*Habitation*.—Found in the areolar tissue, in an irregular or tortuous position, between the muscles of the ribs and the integument of a *Boa constrictor*



*Note.*—In the same *Boa constrictor*, which was dissected by my friend Dr. Hallowell and myself, we found in the right lung 6 females, 4 males, and a very young individual of *Pentastomum proboscideum*, and in the ureters of the kidneys 26 individuals of *Distomum horridum*.

December 10th.

Dr. Leidy exhibited several molar teeth and fragments of maxillæ of a fossil *Rhinoceros*, from Missouri territory, received from the Smithsonian Institution through Prof. Baird, which indicate a species little more than half the size of the recent *R. indicus*. He characterized it under the name of *R. occidentalis*.

Dr. Leidy also exhibited drawings, and offered the following remarks on the nettling organs of the *Hydra*:—

There are three different forms of these organs. The first are of comparatively large size, and are pyriform in shape, measuring about 1-1700ths in. in length, by 1-2125ths in. in breadth. They are found principally upon the arms, and anterior two thirds of the surface of the body, although they are found upon the posterior third also, but few in number. Colorless and transparent, they contain within them an elongated pyramidal body about 1-3400ths in. in length, the apex of which is in contact with, or slightly protrudes from, the projecting extremity of the nettling cell; the base is divided into four lobes and rests upon a prolate spheroid body which has its other extremity applied to the middle of the concavity of a cup-shaped mass of faintly yellowish matter occupying the inferior third or bas-fond of the receptacle. The pyramidal body is described by Corda\* as being a calcareous dart capable of protrusion from the cell, but incorrectly, for when it is forced from its receptacle, it divides into four spine-like processes, which project outward nearly at right angles to the extruded mass. The intervals unoccupied, and the bodies just described within the cell are filled with a transparent colorless fluid. When the *Hydra* brings its arms in contact with its prey, the projecting ends of those nettling cells which touch it appear to adhere to the captured animal, and in the struggles of the latter, a delicate thread from the nettling cell is observed to be attached to the prey which is lengthened in the movements of the latter, entangling its limbs; and if the struggling continues or the prisoner escapes, it will be found to have several of the nettling cells, torn from the *Hydra*, adhering by the long delicate threads. In the detachment of the nettling cells, after considerable elongation of the thread, the whole of the interior mechanism is first withdrawn from the cell and adheres to its projecting end, as a cylindrical mass, faintly outlined, with a pyramidal summit from which proceeds the thread, and from the upper third of its sides, rise outwardly like springs, nearly at right angles to it, the four spinous processes before mentioned. The nettling cell itself, appears darkly outlined from the thickness of its wall, and is much narrower than in the ordinary condition from the loss of a considerable part of its contents, and within is nothing else but a clear fluid. The traction continuing, the whole cell and appurtenances become detached from the *Hydra*. The thread which originated in the interior of the cell appears to be

\* See Arch. für Naturgesch. 1842, p. 71.



of a viscid character, for if any of these cells of the arms of the Hydra come in contact with its own body, they adhere with such tenacity, that the former can only be detached, at the expense of the loss of several of the nettling cells. From the detached cells often being found attached to the Hydra itself by the long threads, some observers, as Ehrenberg,\* have considered that they were organs, which the animal threw out from itself like anchors.

The second form of nettling organs, are found arranged in more or less regular circles around the first or largest form, usually nine to fourteen in a circle. They are transparent, pyriform, about 1-3400th in. in length by 1-5666th in. in breadth, and have projecting from the prominent extremity a cilium about 1-875th in. in length. These cells are described by Corda as containing a thick walled sac, adhering to the outer cell at the base of the cilium. According to my observations, the appearance of an inner sac arises from a contained thread which forms a double spiral, one end of which forms the cilium projecting from the nettling cell.

The third form of nettling organs, are found in greatest abundance about the head of the animal, but also exist upon the arms, particularly at the lower part, and upon the surface of the body generally. This form appears never to have been before noticed. They are oblong, transparent cells, about 1-2125th in. long by 1-5666th in. broad, and contain within them a spiral thread, more delicate than in the second form of cells, and have a greater number of turns which take a direction transversely to the length of the cell. They resemble very much in their appearance one of the forms of nettling cells of *Corynactis*, figured by Allman in the 17th vol. of the *Annals of Natural History*, Pl. 11, fig. 4. I have never been able to see the threads prolonged externally, on account of their minuteness, in contact with the prey of the Hydra; but by pressure and the continued endosmosis of water I have detected them protruded in this as well as the second form described.

All the forms of nettling organs are placed within especial organic cells, adhering by the more prominent extremity of the organ to that part of the interior parietes of the cell, corresponding to the free surface of the animal upon which they are placed. Their developement is special from the granular contents of the organic cells and not from the nucleus, for in the first or largest form of nettling organs, in their developement upon a bud of the Hydra, I have been able to detect one within an organic cell, and a nucleolated nucleus at its side.

The foregoing observations have been made in frequent efforts to detect some form of cell within the head of the Hydra which would be different from the general structure of the body, and probably characterize a nervous system, but although I have examined the animal in different menstrua under a variety of circumstances, I have never been able to discover anything which could be referred to a nervous structure.

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\* Nov. Act. Phys. Med. 1836, p. 301.



December 17th.

Dr. Leidy presented for the inspection of the members, fragments of fossil mammalian remains, from Missouri Territory, received from the Smithsonian Institution, through Prof. Baird, consisting of portions of crania, maxillæ and teeth, which he characterized under the names of *Rhinoceros nebraskensis*—a species not much larger than a common hog,—*Palæotherium Bairdii*, *Merycoidodon Culbertsonii*, and *Agriochærus antiquus*.

1. *RHINOCEROS NEBRASKENSIS*.—A species founded upon a great portion of the face, containing all the superior molar teeth; an inferior maxilla with six molars; and three superior, apparently deciduous molars. It is about the same size as the *R. minutus* of Cuvier.

Length of line of seven superior molars,	. . . . .	4 7-10 inches.
“ “ six inferior “	. . . . .	4 2-10 “
Breadth of jaws from the first superior true molar teeth of one		
side to the other,	. . . . .	3 8-10 “

2. *AGRIOCHÆRUS*, *n. g.*—Founded upon a great portion of the face and inferior maxilla, containing six molar teeth on each side, and the posterior two molars of both sides superiorly of another individual. The posterior molars of this genus resemble in general form those of *Merycopotamus*, *Falk.*, & *Caut.*, and are about one-third smaller, but the outer demicones are not separated to the base from each other like the former, but are combined by a rounded column as in *Hypotamus bovinus*.

The fourth premolar has four demicones, but the internal posterior one is rudimentary. The third has two demicones: the external large, the internal small. The second forms but a single cusp. The inferior true molars in general form resemble those of *Merycoidodon*, but may at a glance be distinguished by the posterior edge of the postero-external demicone bifurcating before it terminates, sending one arm to join the internal angle of the posterior internal demicone; the other to join its posterior external face about the centre.

Length of range of superior six molars,	. . . . .	3 in. 1 line.
“ “ inferior posterior five molars,	. . . . .	3 “ 1 “
Breadth of face from one superior posterior molar to the other,		2 “ 10 “

The species he called *A. antiquus*.

3. *PALÆOTHERIUM*.—Remains of this genus have been previously discovered in this country. Dr. Prout in Silliman's Journal, Vol. 3, n. s., p. 248, describes a fragment of an inferior maxilla of a species larger than the *P. magnum* of Cuvier. The species, for distinction, may be named *P. Proutii*.

A second species was founded upon the cranium and a portion of the face containing the true molars; and the six superior and inferior molars of both sides of another individual. This species is about two-thirds the size of *P. crassum*. The arrangement of the superior molars is very like that of *Paleotherium Hippoides*.

Length of range of seven superior molars,	. . . . .	2 8-10 inches.
“ “ seven inferior “	. . . . .	3 “
Breadth of face on line with posterior superior molars,		2½ “

This second species Dr. L. named *P. Bairdii*, in honor of Prof. S. F. Baird, Curator of the Smithsonian Institution.