

II. Benjamini à Broeckhuysen *Med. et Phil. Doct. &c.*  
*O ECONOMIA CORPORIS ANIMALIS,*  
 five cogitationes succinctæ de Mente, Corpore, et utri-  
 usque conjunctione, juxta Methodum Philosophiæ Car-  
 tesianæ, deductæ. *Amstelodami* 1683. 8°.

I. LUMERICUS TERES, *or some Anatomical Ob-*  
*servations on the Round Worm bred in human bodies.* By  
 Edward Tyson M. D. Col. Med. Lond. nec non. Reg.  
 Societ. Soc.

HAVING been so large in my former instance, in my *Dis-*  
*course on the Joynted-worm*, I intend to Contract my  
 self in *this*. Not that our present subject is scanty,  
 or does not afford a sufficient plenty of remarkable obser-  
 vations; But I chose rather to select what most suites  
 our design. For to be exact and nice in all *particulars*,  
 would require a just Treatise, and exceed the bounds I  
 have at present set my self.

I shall therefore here give the *Anatomy of the Lumbricus*  
*teres*, that common *Round Worm* which Children usually  
 are troubled with: and in this more particularly make  
 my remarks upon the *Organs of generation* in both *Sexes*;  
 and herein shew how vastly different they are from those  
*parts* in the common *Earth Worms*, and it may be, most o-  
 tters. And withall I had designed, together with this,  
 to have given the *Anatomy of the Earth Worm*, but since  
 have altered my intentions: and at present shall refer  
 to the account given of it by the famous Dr. *Willis*, reser-  
 ving my farther observations of it to another opportunity.  
 This sort of *Worm* by *Hippocrates* is named *σεννύλα*; by  
*Celsus*, *teres*; and is usually about a foot long, or some-  
 thing more, or less; but I have hitherto observed that  
 the *Male* is generally lesser than the *Female*: so that by  
 their

their *bigness* in the same body I have before *dissection* been able to distinguish the *Sex*. They are about the bigness of a Wheat straw, or a Goose quill; their colour White; but being *subjects* so generally known to all, I shall forbear a further description of their *outward parts*; Onely as I remember I did not observe those *feet*, or asperities on the *Annuli*, as in the *Earth Worm*. At both *extremes* they grow narrow. Their *mouth* is compos'd of three Lips as in our *figure*. So the *Leech* hath three Cartilaginous *Teeth* set in a triangle, by which they make the wound in the Skin in *Suction*. The *Anus* is a transverse slit a little before the extreme point of the *Tail*.

In opening the body I found I cut thorow a large *Muscle* under the Skin; Which *Muscle* in *Earth Worms* I find is *spiral*; as in a good measure is their *motion* likewise; so that by this means, like the *Worm* of an *amger*, they can the better *bore* their passage into the Earth. Their *reptile* motion also may be explained by a Wire wound on a Cylinder; which when slip't off, and one end extended and held fast, will bring the other nearer it. So the *Earth Worm* having shot out or extended it's body, (which is with a wreathing) it takes hold by those small *feet* it hath, and so contracts the hinder part of it's body.

Likewise I observed that dividing this part there issued out a copious *Ichor*; which is naturally discharged by some *Pores* or small *Vents* in the Skin; which in the *Earth Worm* is of great use, by rendering the surface of the body slippery, that so it might the easierly glide into the Earth. And in these other *Worms* of the *Intestines* this humor (as in *Leeches*) makes a covering to the body, which is often cast off, and observed as a *Mucus*, in the *Stools* of those troubled with them.

In these *Teretes* of *Animal* bodies I never observed those transverse *Diaphragms* which are so numerous in *Earth Worms*, and do intersect or rather so deeply depreß the *Intestine*. But the *Cavity* chiefly seems to be fill'd with

the *genital* parts, which I shall now describe: Onely shall first remark that the passage from the *mouth* was some what straightned for a short space, and was distinguished, as in our figure, from the following *Ductus*; which was a strait *Intestine* continued to the end of the body, without any winding or other distinction of a *Stomack* that I could observe.

As to the *Genital parts* of the *Male*: I could here observe a *Penis*, a *Vesicula seminalis*, and a *Testis*: In the *Female* a *Pudendum*, *Vagina Uteri*, *Cornua Uteri*, and *Spermatick Vessels*.

The *Penis* in the *Male* was placed at the *Tail* or opposite Extreme to the *head*; and seem'd to be able to exert it self almost the length of a Barley Corn, or proportionably to the length of the *Vagina* in the *Female*.

At the root of the *Penis* was inserted the neck of the *Vesicula Seminalis*, which gradually grew larger as it ascended in the body, and usually did reach almost half way. 'Twas filled and turgid with a *milkie Juice*; Which it received from a *slender Vessel* of the same Colour inserted into it. Which after one turning, was afterwards very much convoluted; and being so, forms that body I call the *Testis*.

Altho' *this part* be so loosely contexted, as even to the naked Eye it appears but as a continued vessel, and may easily be unravelled it's whole length, which I measured was above a Yard: yet I make no difficulty of giving it the name of a *Testis*; since 'tis now sufficiently known, that the *Testes* in more compleat *Animals* are onely a congeries of *Vessels*. And a *Rat*, besides this *Worm*, is not the onely Subject wherein I have found them thus loose and easily separable.

In the *Female Worm*, almost about the middle of the body, but more towards the head, I observed an *Orifice* or *Pudendum*, which led into the *Vagina Uteri*; which soon divided into the two *Cornua* which were large, and remarkable

markable. For descending something winding towards the *Tail*, they were then reflected again, and did each of them terminate in slender Vessels, *White*, as they were, but much smaller; and did lye in several convolutions and windings amongst them. These I take for *Spermatick Vessels*. Having taken those *Vessels*, with the *Cornua Uteri* and *Vagina*, out of the body, and laid them on a Paper to dry; I found from each *Cornu*, to the end of the *Spermatick Vessels* which I had preserved, that they measured above four foot.

I opened the *Cornua Uteri* and found them turgid with a *milky Juice*, having placed a little of it upon a small *Microscope*, I plainly perceived 'twas nothing else but an infinite number of small *Eggs*; tho' to the naked eye it appeared onely as a fluid body. These *Eggs* when fresh, appeared, as is represented in our fourth *Figure*, covered with abundance of small asperities; but as they grew dry their Surface appeared Smooth.

By comparing that small quantity I did observe, in which I could distinguish so many *Eggs*, with the whole substance contained in both the *Cornua*, I cannot guess there can be so few as 10000 *Eggs* in each *Female Worm*.

How far different *this Worm* is from common *Earth Worms* as to these *parts*, I need onely to refer to <sup>a</sup> Dr. *Willis's* figures and account of it, to shew. And I am yet to learn what *Worm* out of the body has these *Organs* thus formed. When once there, the Case is plain how they propagate themselves. And <sup>b</sup> *Menjotius*, and all before him, that were of that Opinion, are mistaken; who say that these *Worms* do not generate; nor have any distinction of *Sexes*. <sup>c</sup> *Hippocrates* is express, *ἀνρὸν ἐρηγύλαυ τίεισι*. And I think nothing can be plainer then this distinction of *Sexes* in them.

(a) Willis de Anima Brutor. cap. 3.

(b) Ant. Menjotius. dissertat. Patholog. part. 3. p. m. 522.

(c) Hippocr. l. 4. de morbis.

But I find on the other hand, there are *many* who do not onely allow them to generate, but do make them *Viviparous* too.

Thus P. <sup>d</sup> Borellus tells us, *Vermem Crassum ab hominis Corpore eductum, fortèque pedibus exenteratum, non sine admiratione vidi vermiculis innumeris refertum esse.* So <sup>e</sup> Amatus Lusitanus tells much such a Story; that a Girl voiding a large Worm, and the father treading on it, *ex eo alij prodierunt Vermes.* And <sup>f</sup> Fœlix Platerus gives an observation of a Boy that was Hydropical, and voided all his excrements upwards; who dying in the *Hospital*, and they observing a motion and palpitation in his belly, were afraid to bury him till they had sent for the *Doctor*. He opening him found the *Intestines* in some places swell'd as big as his Thigh, in others so convoluted, intorted, and twisted, that hindred any passage downwards, either of Excrements or Wind; *Sed & vermibus vivis quamplurimis repleta erant, qui rursus alijs minoribus referti.* You may see an Instance likewise *de Vermibus factis* in *salmuth Cent. 3. Obs. 24.* But <sup>g</sup> Dominicus Panarolus is very exprefs; and tells us he observed it thus in two several persons. *In utroque expulsi fuerunt Vermes Colore Carneis, longitudine circa sexdecem digitos, qui prægnantes erant, & ligno collisi cum fuissent, apparuerunt vermes parvi, subtiles, albi, longitudine sex digitorum, prope innumeri, qui tanquam serpentes parvi movebantur.* But whatever is related of *this* nature I cannot but think it is a *mistake*; and that they were imposed upon by the *Genital parts* of this Worm; which not warily examined, might easily make them to think they are so many small Worms. For they are not *Viviparous* but *Oviparous*, as I have shewn; and their containing so vast a number of Eggs in the *Cornua*

(d) P. Borellus *hist. & observ. Cent. 1. Obs. 89.*

(e) Amatus Lusitanus *Cent. 3. curat. 46.*

(f) Fœlix Platerus *Obs. lib. 3. p. m. 657.*

(g) Dom. Panarol, *Obs. Med. Pentec. 5. Obs. 15.*

*Uteri*, as I have expressed, does sufficiently account for that prodigious quantity, that are sometimes observed to be bred in *Animal* bodies.

<sup>b</sup> *Panarolus* tells us he once saw the Stomack and Guts stuffed with them so that they ascended up to the Throat. <sup>i</sup> *Baricellus* by the use of *Crude Mercury* brought away from a Patient above a hundred. <sup>k</sup> *Jo. Jadoc. Weckerus* did the like with the use of *Tansy Seed* and *Syrup of Violets*. *Gabucinus* saw voided by Stool 177. <sup>l</sup> *Benivenius* saw voided by a *Child* 7 years old 152 Worms. And <sup>m</sup> *Jacob Hollerius*, out of *Musa*, gives us an History of a man 82 years old, who voided above 500. And <sup>n</sup> *Petrus Paulus Pereda* saw a Noble-man's *Child* in a few days void almost a Thousand, and she voided 40 in 4 hours time.

Those *Animal's* are usually the most *Multiparous*, whose *young* are the most exposed to danger; and were it not so here that the greatest part of the *litter* of this *Worm* is usually carried forth by the *Feces*, it could not be avoided but we should be devoured by an *Enemy* we breed in our own *Bowels*. That caution therefore of <sup>o</sup> *Henr. ab Heers* I think is necessary. To avoid the giving the Powder of these *Worms* for expelling others, since we cannot be secure but that at the same time we may sow the Seed for propagating more.

(b) Panarol. *Pentec.* 1. *Obs.* 41.

(i) Baricel. *in hortulo geniali.*

(k) Wecker. *de observ. propriis.*

(l) Beniven. *de abditis.* cap. 85.

(m) Holier. *de morb. intern. lib. 1. in Schol. ad cap. 54.*

(n) Pereda *de curand. morb. lib. 1. cap. 5.*

(o) Henr. ab Heers *Obs. med. l. 1. Obs. 9. p. 101.*

THE  
EXPLANATION  
OF THE  
FIGURES.

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FIGURE I.

**R**epresents the *Male Worm* opened. Where

- a.* Shews the three Lips of the Worm.
- b.* The *Oesophagus*, or Gullet.
- c c c.* The large Intestine.
- d.* The *Penis*.
- e e.* The *Vesicula Seminalis*.
- f.* The *Testis*.

FIGURE II.

Represents the *Female Worm* opened. Where

- a.* Shews the Mouth.
- b.* The Gullet.
- c c c.* The Intestine, or Gut.
- d d d d.* The *Vagina Uteri*.
- e.* The two *Cornua Uteri*.
- fff.* The Spermatick Vessels.
- g.* The *Anus*.

FIG.

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*FIGURE III.*

Represents the Genital parts of the *Female*  
explicated. Where

- a.* Shews the *Pudendum* or *Foramen* as it appears on the out  
side of the Skin.
- b.* The *Vagina Uteri.*
- c c.* The two *Cornua Uteri.*
- d d.* The Spermatick Vessels.

*FIGURE IV.*

Represents the *Egg*: of this Worm, as they appear-  
ed being viewed by the *Microscope*,

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Y

*A remark-*



Fig. 1.

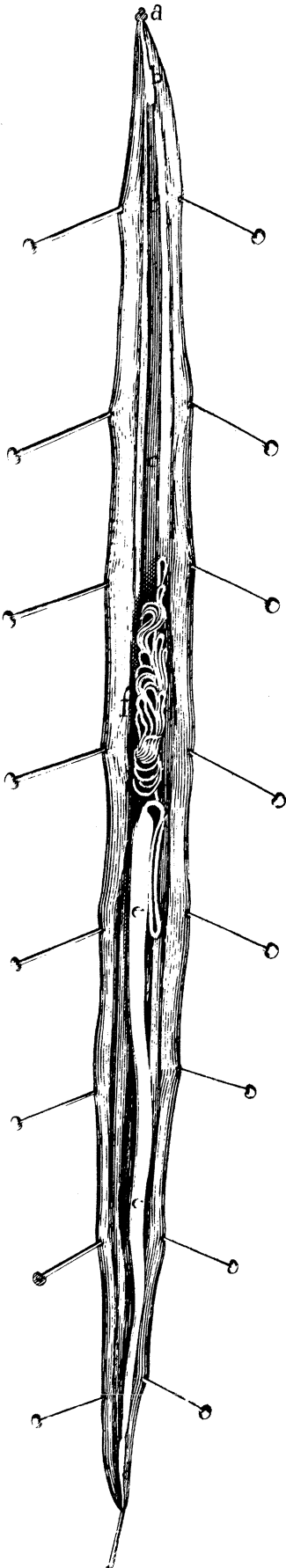


Fig. 2.

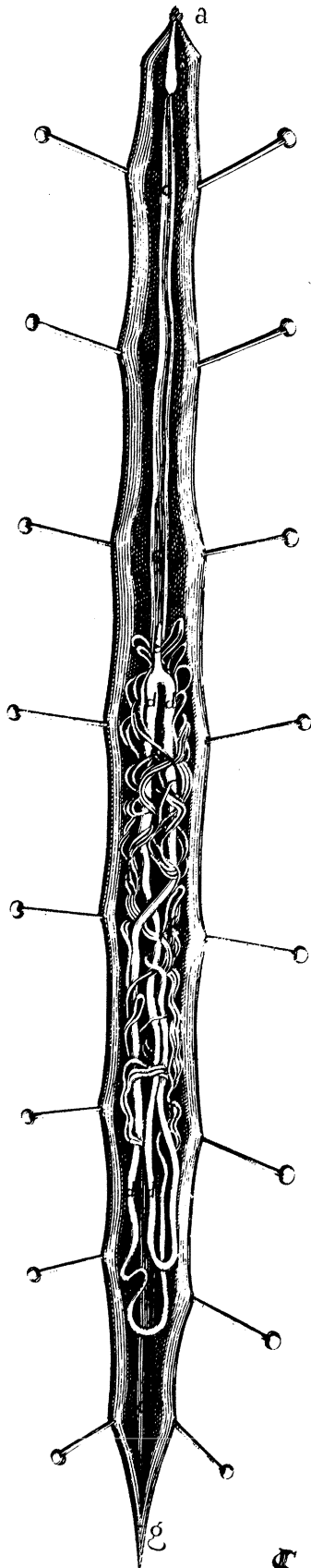


Fig. 3.



Fig. 4.

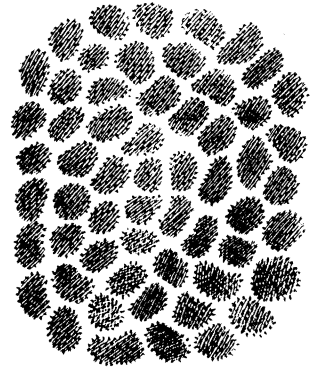
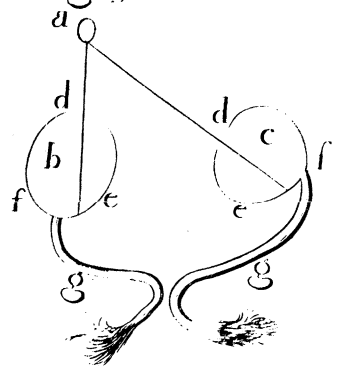


Fig. 5.



*Savage sculp.*