

# PHILOSOPHICAL TRANSACTIONS.

November 20. 1683.

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Tajacu, seu Aper Mexicanus Moschiferus, or the Anatomy of the Mexico Musk-Hog. By the Learned and Ingenious Edward Tylon M. D. Fellow of the College of Physicians and of the Royal Society. An account of a Book. Recherches Curieuses &c. Curious Researches of Antiquity contained in divers dissertations concerning Medalls, Bals-Reliefs, Statues, Mosaic-works, and Inscriptions of the Ancients: Enrich'd with a great number of brass-Cuts. By Monsr. SPON Dr. of Physic. Printed at Lyons 1683. in quarto.

*Tajacu seu Aper Mexicanus Moschiferus, or the Anatomy of the Mexico Musk-Hog, &c.*

**T**His *Animal* being so much a stranger to our Nation; and its inward organs, at least some, so odd, and remarkable; I am willing to deliver my observations of it. They are rude, and very imperfect, yet such as they are, I the rather venture abroad, since it may be, I may never have an opportunity of compleating them.

The occasion of my making these, was afforded me, by my very good friend Dr. *Goodall*, a Fellow of the *Colledge* of Physicians, and a great lover of the same, who accidentally meeting with it, when dead; procured it for our private *dissection* at our *Theater*; and afterwards more leasurely examining it, at the *Repository* of the *Royal Soci-*

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ety; and having the assistance of my ingenious Friend R. Waller Esq. and Mr. Hunt in making the *Figures*; I think I may be able to give some better notice of it, than what hitherto we have received.

But it will be convenient first of all, to tell what it is we are going to describe. The *Indian names* of this Animal are, *Quaubtla Coymatl*, & *Quarizotl*; or *Coyametl*, seu *Quaubcoyametl* as in the *Mexico History*. *Oviedus* saith, the *Indians* call it *Chuchie*. In *Lerius*, *Gomara*, *Margravius*, *Gul. Pifo*, &c. it is called *Tajacu*, *Tajacu Caaigoaru*. by *Josephus à Costa*, and others, *Zaino*, or *Sayno*; and by *Jo. Faber* one of the *Lyncean Academy*, and who hath wrote the largest on this *Animal* of any I have met with, it is called *Aper Mexicanus*; and for a reason I shall afterwards give, I have added the Epithet *Moschiferus*; to distinguish it from any other that may be met with there.

The whole *shape* of this *Animal* is such, that we may easily reduce it to the *Swine kind*; as plainly appears by our *Figure*, which is much more exact, than either that in *Hernandez*; where the *Snout*, and head seems too slender, nor did we observe that white ring about the Neck; which is there conjecturally described. Or that in *Pifo*, *Johnston*, &c. where it is pictured with large *Mustachios*, and a *Tayle*. But it was much lesser then our usual *Hoggs*, for from the end of the body, where the *Tayle* should be, to the top of the head between the ears, was two foot and two inches; from thence, to the end of the nose, XI. Inches. The Girth of the body, two foot. The girth of the neck, 16 Inches; of the head in the largest place 18 Inches; and of the *Snout* 12 Inches. For the lower *Jaw* in this *Mexico-Hog*, was more protuberant, and the *head* less tapering then in our *Swine*; and in the *Skeleton* appears, much like that of the *Baby Roussa*; only it had not those teeth; and the *Neck* appeared so very short and thick, not from those large *glands*, which in some of the *Swine* kind do so stuff out their necks; but from the short turning upwards of the *Vertebrae* of the Neck, which were kept

kept so close to the body, by the insertion of that strong *ligament* into the Pole from the back, which in **Animals**, that are *prono Capite*, is of extraordinary use, and much adds to the strength of this Animal.

The *Colour* of the body was grisly; being beset with *bristles*, which were thicker than those of a *hog*, and lesser than those of a *hedg-hog*, but like those of a *Hedg-hog*, or the quills of a *Porcupine*, they were variegated with white and black rings. *Jos. a Costa* makes them like these, to be weapons too. *Irritati* (saith he) *Setas, ut novacula, acutas erigunt, quibus insectores suos sauciunt periculossissime; nisi ictus declinent*. But I more then suspect the truth of this assertion. The *belly* was almost bare. The *bristles* on the sides shorter, and gradually encreasing in length, as they approach the ridge of the back. here some were five Inches long. Between the ears on the head was a large tuft of these bristles; which were most part black. *G. Pifo* is out, who makes these *Setæ* on the back, *solito breviores, & molliores*; and <sup>a</sup> *Fulcoburgius* much more in the right; who saith, *Setæ longiores, quam pro corporis proportionem, nigrae, hinc inde maculis candidis distinctæ*.

The *Eares* were about two inches and ahalf long and pricking up. The *Eyes* (as they are usually in *Piggs*) but small; from the lower *Canthus* to the end of the nose, six inches. The *Nose* like that of a *Hogs*. The *mouth* not large. The side of the lower lip made smooth, as it were by the rubbing of a *Tuske* in the upper Jaw. The *Teeth* I will describe with the *Skeleton*. The *Feet* and *Clawes* perfectly as in the common *Hoggs*, only the upper *Claws* on the same foot proportionably longer; being one inch quarter and a half long; whereas the true *Claws* were Scarce one inch and an halfe. <sup>b</sup> *Oviedus* saith, *ungulas non partitas sive bisulcas habent*. And <sup>c</sup> *Peter Martyr*, as he is quoted by *Gesner*, tells us; they are *Cloven*

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<sup>a</sup> Apud Tho. Bartholin. Hist. Anat. 96. Cent. 2. <sup>b</sup> Oviedus in Summario Indiarum Occident. <sup>c</sup> P. Martyr. Oceanarum decad. 1. 2.

footed onely before, & whole behind. but ours was no such monster; nor were those observed by *F. Gregorius* & abundance more. Yet *Aristotle*, and *Pliny* too, acknowledge there are *Swine*, that are *Solipedes*.

Our *Hog* had no *Tayle*. *Cauda est nulla*, saith <sup>d</sup> *G. Pifo*, but I wonder why then, he should suffer his *Picture-Drawer* to give him one, as in his *figure*. In *Jonston* he wears a *Tayle* too; who seldome misses the transcribing the Errors of those before him; tho he might have borrowed a far better picture out of *Harnandez*. *P. Martyr* mentions, that the Spaniards met with some such Tayl-less Hogs in *Urabá*. *Erat tam exigua ejusmodi Apris Cauda, ut prorsus abscissa judicaretur*. Nor is it any wonder that amongst the *Swine* kind, some have *Tayles*, and others none: for we see the same thing in *Munkeys* too.

But what is most particular in our *Hog*, and makes the greatest wonder; and differences it, from any other Animal I know of in the World; is the *Teat* or *Navill* or *Foramen* rather on the hinder part of the back. All who mention this *Animal*; look on this, as a thing so extraordinary, and uncommon; that I know not how their amazement has so far clouded their reason, as to betray them into most extravagant Conjectures, and opinions concerning it. Not any one, as I have met with, affording the least glimmering of a probable truth. But because an account of *this part*, will be somewhat large; I shall give it the last; and shall now take a survey of its inward *organs*. Onely shall premise in short what the *writers* of the *Naturall History* of the *Indies*, have given us of the nature of the *Tajacu*, and the *places* where tis bred.

*Hieron.* <sup>c</sup> *Benzonus* mentions they are in *Panama*, and *new Spaine*; <sup>f</sup> *Gomara* tells us, they are in *Nicaragua*; <sup>g</sup> *Oviedus* saith, they are found in *Terra firma*; and <sup>h</sup> *Lerius* writes, they are in *Brafle* too. They are usually met

<sup>a</sup> *G. Pifo* de *Indie* & *quibus* re *Nat.* & *Med.* l. 2. p. 93. <sup>b</sup> *Hieron.* *Benzon* America p. 5. <sup>c</sup> *Gomara* *Hist. Gen. Indiar.* l. 5. c. 204. <sup>d</sup> *Oviedus* in *Itin.* *Indiar. occident.* <sup>e</sup> *Lerius* in *Navigat. Bras.*

with in the Mountaines, and woods; and go in *herds* together. They feed on roots, acorns, and fruits; but as the greatest delicacy they hunt for all manner of poyfounous Serpents, and Toads; and having caught them, holding them with their fore feet; with a great deal of dexterity, with their teeth they strip of their skin from the head to the Tayle, then greedily devour them. *Postea* (saith *Jo Faber*, who had the account from *F. Gregorius*, who often has seen them, and lived in those parts 24 years) *Radicem seu certæ arboris Corticem sibi notum quærit, quem comedit, ne veneno inficiatur; & hac ratione optime nutritur, crescit, & augetur.* When they are made tame, they will feed on any thing. But naturally they are very fierce.

*Oviedus* remarks that the *Swine*, the *Spaniards* left on the Islands of *St. Domingo*, *St. Joannes*, and *Jamaica*, multiplied, and encreased. But those in *Terra Firma* durst never go in the woods; but were destroyed by the *Lions*, *Tigers*, and *Lupi Cervarii*. Yet in these woods, there are great herds of these *Tajacu's*, that can make their party good with the Feircest of them. If any be wounded, presently he gets to his assistance a great number of his kind; and never leaves till he has revenged the injury, or is slain. They are allways at enmity with the *Tigers*. And there is often found the body of a *Tyger*, and abundance of these *Tajacus* slain together. If they spy a man they will fiercely set on him, and his best escape is to get up a tree, which they will most furiously assault with their teeth, nor will easily leave him; till forced by hunger, or slain by him, by Clubs, Darts, or a Gun, *Josèphus à Costa* tells us, tis usual this way to take them; by a mans shewing himself to them, whome they know they will presently persue. If they hunt them, their dogs are often torne in pieces by them. Their *Flesh* is esteemed very good, and much desired by the Inhabitants, *G. Piffo* saith, it ex-

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<sup>1</sup> *Hist. Animal. Sc. Mexican.* p. 6, 8.    <sup>2</sup> *Jos. à Costa lib. 4. Hist. Americ.*

cells our *Hogs*; but *Hernandez* thinks it is *durior atque insuavior*. They have but a very little *fat*; our subject had scarce any. But I find it as a special *caution* given by all, that as soon as they are taken, to cut out the *gland* on the back, least it taints the flesh. Thus *Joseph a Costa*, *Caro eorum commodissima esu est, priusquam tamen in cibum detur, umbilici tumore in tergo prominente præsecto, abjectoque opus est. Nisi hoc fiat, uno die Caro putrescet, & Corruptetur*. Nay *F. Gregorius* would have it done immediately, without any delay: <sup>m</sup> *Quare si quod Animal ejusmodi mactatur, necesse est prorsus, ut confestim ipsi umbilicus excindatur; quod nisi mediæ horæ spatio fieret, esui haud amplius aptum animal foret; tam teter enim inde fætor efflatur, qui vix sufferri potest, & reliquam carnis massam omnem inficit*. I must confess, this *gland* did not seem to me, to have that offensive smell; or to impress it on the flesh. This I am confident, that in flaying off the *Skin*, unless they studiously endeavour it; they cannot avoid taking away the *Gland* too; it lying so between the skin, and *Panniculus musculosus*; which is always taken of with the skin, but of this more anon.

We come now to the *Anatomy*; where our observations shall be chiefly of such parts, as are of a different make from the same in common *Hogs*; or the most common *Animals*. Having therefore divided the *Muscles* of the belly; what first of all we took notice of, was the remarkable structures of the *Stomacks*, for it had *three*. Into the middlemost, was inserted the *Oesophagus* or Gullet; which we therefore shall call the *first ventricle* or *Stomack*. From this, on one side was a large passage into the second; which pouching out had its two ends winding like a *horn*; and on the other side of the first or middle stomach, was a free open passage into the *third*, which emptied it self into the *duodenum*.

For the exacter apprehending the *shape*. and external

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<sup>m</sup> Vid. Joh. Fabin. Hist. Mex. p. 643.

form of these several *Stomacks*; I have caused them to be represented in three different postures, in three *Schemes* which fully demonstrates their outward *figure*. In *Fig. 5. Tab. 1.* you more plainly see the winding extremitys, or horns of the second *Stomack*. In the *2d. Fig. Tab. 2.* the three *Stomacks* more in their natural scituation; with the insertion of the *Oesophagus* into the first. In the *1st. fig. Tab. 2.* all three *Stomaks* opened, wherein is remarkable, that the first *Stomack*: was lined within, with a white thick hard membrane; almost like the inward *pellicle* of the *Gizzard* of *Fowls*; with which none of the other *Stomacks* were endowed. For the inward surface of the second, was smooth, and soft; its membranes thin, and more inclining to the common make of that of *Carnivorous Animals*. The third somewhat like this; but thicker, and rimped within, with large *plicæ* or folds.

Our *common Hog* seems to have but one *Stomack*, and much different from these of our *Tajacu*. Where nature makes more 'tis no doubt for necessary uses. What here by the white *pellicle* of the first *Stomack*, is plainly distinguished into three, is more obscurely so, in our common *Hoggs*. <sup>n</sup> *Dr. Grew* does give them but two; acknowledging it to be shaped somewhat oddly in a manner with a *double Ventricle*. "The one, and the principal, may be called *venter magnus*, shaped like that of *Carnivorous Quadrupeds*, very thick, and Muscular; especially on the neck, and at the *Pylorus*. At the left end of this greater *Ventricle*, another far less, yet a distinct one, is appendent. Much after the same manner, as the *Reticulum* in a *Sheep* is to the *Paunch*, or as the *Intestinum cæcum* to the other *Guts*: for which reason it may be called *Cæcus Venterculus*, separated from the greater by a muscular ligament, like a half *Valve*. where it joyns to it, an Inch, and half over, and thence is extended two Inches in length, ending in a twisted or hooked *Cone*.

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<sup>n</sup> *Dr. Grew* of the *Stomacks* and *Guts* of *Quadrupeds* cap. 3. p. 14

“Not so muscular as the greater *Venter*, but thin and membranous. The inward surface also plain or without folds. This last described, as it may answer to the second Ventricle in our *Tajacu*: so his *venter magnus*, or first, may be distinguished into two; it having about the right end or half of the belly: several *f lds* as he observed, which answers to our third Stomack, the other end being plain, as was our first.

But what he takes notice of, that in the common *Hog* against the *Pylorus* stands a round *Caruncle*, as big as a small fiberd kernel; like a stople to the *Pylorus*; a part he thinks peculiar to this Animal. This in our *Mexico Hog* I did not observe. His <sup>o</sup> conjecture of the use of it, is likely enough: it being so voracious an Animal; for the preventing a too sudden, and copious irruption of the Aliment, which is sufficiently provided for in our subject, by the great streightning of the *Pylorus* here; and the great ascent it must make, before it can go out: which may be the reason too, of natures making these several *Cells*, or partitions; for the better digestion and maceration of the food, for it being *frugivorous*, *graminivorous*, and *Carnivorous* too; the *stomacks* are so contrived, as that the first here, by its inward *pellicle* somewhat resembles that of *Birds*, that are *Carpophagous*; so the others, those of *Quadrupeds*.

Why a *Hog* of any Animal, should be said the most to resemble *Man* in all its inward parts; without a *Metaphor*, I cannot understand. It may be a passage in that book, ascribed to *Gallen de Anatome parva*; may give some occasion to this vulgar *Errour*. None who shall compare them together; but will observe, in several, if not most parts, a vast difference; as appears in what we have discoursed of already, the *Stomack*.

*Falcobergius*, who dissected a *Tajacu*, which was brought from *Brafle*, takes notice of those *Cornua* of the

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<sup>o</sup> Dr. Grew *ibid.* cap. 6. p. 24.



*Stomack.* *Ventriculus duas habet appendices, velut Cornua; alteram in superiore, alteram in infima ejus parte;* which is all he saith of it. But we shall now proceed to the *Guts.*

And these I find as remarkable as the *Stomack*; *mirum & singulare* (saith p *F. Gregorius*, who had oft dissected them) *est; quod Intestina, & Ventris Viscera contrario prorsus alijs Animalibus situ obtinet, renes versus nimirum revoluta: Ita ut quæ in ventris parte inferiore, ac pro-na esse annexa deberent; superiori eadem potius ac supina, ubi spina excurrit, adhæreant, & quæ spinæ dorsi contigua esse nata sunt; hæc eadem inferiori in parte ventris situentur.* What is meant by all this, is I suppose, that the small *guts*, which in other Animals, being fastened to a larger *Mesentery*, usually do hang down lower; here, were closer gathered, by the shortness of this membrane, to the *Spine*; and the *Colon*, which in others is more suspended; here by its peculiar structure, lies loose, and falls down. For the *Duodenum* arising from the *Pylorus* with a short turn; that and the other small *Intestines* made abundance of *Convolutions*, and windings; and altho' the *Mesentery* was but very short from the *Spine*, and it's *Circumference* seemingly but very little; yet in this compass it contained 27 foot of these *Intestines*; for so much they measured from the *Pylorus* to the *Colon*. The *Colon* was not fastened to the *Periphery* or rim of the *Mesentery*, as ordinarily; but arising from the *Center*, or *Middle*, made a *Spiral* line, it's end hanging loose; and it's turnings closely united one to another by membranes. This *Colon* was very large, in respect of the other *Guts*; and as I measur'd it, was 9 foot long. It had a short *Cæcum*, but pretty wide, and filled with *fæces*. What *Dr. Grew* observes, that tis peculiar to the *Cæcum* of a *Hog*, and that of a *Horse*; to have the same structure with the *Colon*; is true here too. And it may be

reckoned as an *appendix* of the *Colon*. In a Hog, Dr. Grew makes seven *Intestines*. The same *differences*, it may be, I might have met with here; but I was prevented by the little leisure I had of being so nice in this, as some other parts; and it being kept so long before I had it for dissection; it was rendered less fit for such enquiries. *Fal-coburgius* saith the length of all the *guts* were 34 geometrical feet, ours measured more. The Structure of the *Colon* here, I look on as extraordinary. Some such *gut* I find in a *Goat*, making several *spiral* windings in the middle of the *Mesentery*; but then taking a compass round, near the verge, to which are fastened the lesser intestines; at last passes into the *Rectum*. So in a *Wood-Cock*, there is such a *Spiral Gut*. But in our *Tajacu* not only the *Stomack*, *Gut*, and *Mesentery* were extraordinary; but the *Mesaraick*, vessels too. For in men, and Dogs, &c. making the segment of a Circle near the middle, they then send out several large branches towards the Intestines; which as they approach them, by their mutual inosculation, for in several small *Arches* from whence issue numerous lesser branches to the Guts themselves. But here in our *Hog*, we observed a large Vein, and Artery, running a small and equal distance from the Intestines; and from them, arising an infinite number of lesser, but straight vessels; which going to the Guts so regularly, and in so great numbers, afforded a very pleasant sight.

The *Spleen*, was about 10 Inches long; almost of the same breadth throughout; and in the middle, was one Inch, and half broad, it was of a lead colour, a little speckled, or marbled. *Lien palmas duas aequat transversas, vix digitum minimum crassus, membranae adiposae annexus*, saith *Fal-coburgius*.

The *Liver* consisted of four large *lobes*; and was of a dark red colour. It appeared plainly glandulous; and had no *Vesica fellea*, which is the more remarkable; since our common *Swine* have a large *Cystis fellea*. But it had a *Ductus bilarius*, which went from the *Liver* to the

*Duo-*

*Duodenum* as usually. *Falcoburgius* saith, *Hepar nullo ligamento suspensorio continetur ; per membranam solam vertebris junctum.*

The *Pancreas* was about 5, or 6 Inches long; and made up of several glands. But in these *parts*, there being nothing extraordinary from the common make of the same in other Animals; we shall now pass to the Organs of *generation*; where we shall meet with something more remarkable.

The *Testes* were two Inches long; larger at the upper end, then the lower, and in the middle, about an Inch broad, they were placed in the *Scrotum*. Their colour white; their structure close; so that the vessels, which composed them; did not so plainly appear as in an ordinary *Boar*. Notwithstanding which, no doubt their whole *compages* was vascular; tho' here closer wrought together, and united. <sup>9</sup> *Vauchus Dathirius Bonglarus* discover'd this vascular structure of the *Testis* of a *Boar*, as also of a *Man*, about ten years before *Reg. de Graef* published his book, *de organis Virorum Generat. inservientib.* and has given good figures of the same. Tho' the latter has given, a much larger, and further account of this subject since. Their *use* is no doubt to prepare the *Semen*; which is conveyed thence by the *Vasa deferentia* to the *Vesiculæ seminales*. These *deferentia* arise near the lower part of the *Testes*; and are so inserted that they might almost equally empty themselves, either into the *Vesicæ seminales* or *Urethra*. I do not remember what, or whither there were any *Epididymis* on the *Testes*.

The *Vesiculæ seminales* were 1 2 Inch long; in some places  $\frac{1}{4}$  in others half an Inch broad. Tho' called *Vesiculæ*; yet here they appeared more *glandulous*; nor was their cavity any thing considerably large. The common orifices to them, and the *Vasa deferentia* made a rising in the inside of the *Urethra*; which *de Graef* calls;

*Caput Gallinaginis*; in men and other Animals, there is a better resemblance, and shew for the name. In those too, at this place, is seated that *glandulous* body, call'd the *Prostata*. But the *Vesiculæ* here being so *glandulous*; possibly they may perform their office. Unless we should ascribe their use, to those two *glands*; which lay on each side the *Urethra*; and emptied themselves with two Orifices, near the root of the *Penis*. These *glands* were Cylindrical, of a whitish yellow colour; an Inch, and half long; and  $\frac{3}{8}$  of an Inch in diameter. Their substance close; like that of the *Testes*; and no perceptible cavity within; and they lay along the outside the *Urethra*, reaching from the *musculi erectores Penis*, to the *glandulous Vesiculæ* before described.

To Van Horn would have a three-fold matter of the Seed; one from the *Testes*; the second from the *Vesiculæ seminales*; and a third from the *Prostata*. But this de Graaf\*, strongly apposes; and will admit only that from the *Testes*; which is transmitted to the *Vesiculæ seminales*, and not at all bred there. But in our subject, and so in some others, they being *glandulous*, they must therefore secrete some juice; which in all likelyhood is some ways serviceable, tho' not principally, in generation. And indeed in the *Hog-kind*, I find these parts very remarkable. In a *Boar* there are two sorts of *Vesiculæ seminales*; one *vesiculous*, the other *glandulous*. In a *Hedge-hog*, there are three pair of *Vesiculæ seminales*; two in the cavity of the *abdomen*; and a third between the Muscles of the Belly, and the Skin. In a female *Hedge-hog* too, I find in the side of the *Vagina*, below the Orifice of the *Urethra*, a *glandulous body* placed; which has a considerable cavity for it's bigness; and a plain Orifice; by which it empties it self into the *Urethra*. But of this more, when I give the *Anatomy* of that Animal. And at present, shall not further reason

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\* Reg. de Graafce Organ. Viror. generat. intervient.

on these parts, but only observe that the *Penis* in our *Tajacu*, was a long slender body; made up of several *Muscles* whereof two were very long.

The *Vesica Urinaria* or bladder of Urine was rounder than in some other Animals; where usually 'tis more oblong. The *Ureters* were inserted at the neck of the bladder; not sides, as in some. How the *kidneys* were, I do not now particularly remember; but beleive, there was nothing extraordinary; meeting with nothing of them in my notes. I shall therefore hasten to the *Thorax*; where we did not meet much observable, unless it was the descendent trunk of the *Arteria Aorta*. Which I shall describe, having first premised, what <sup>†</sup>*Falcobergius* writes of the other parts here; which is only this. sc. *Cor a diaphragmate distat palmam transversam unam. Pulmones in septem lobos distributi, quorum in utroque latere tres siti, septimus vero circa Cordis mucronem positus, tanquam utrique Communis.*

But what of all surpris'd us most; and made us soon neglect the other parts; which we saw had nothing but what was common; was the strange formation of the *Aorta*; which as it descended along the spine, in all other Animals, I have observed its trunk almost of an equal bigness; only a little tapering downwards. But here between the heart and its branchings into the *Iliac Arteries*, we found three large swellings out. The largest was that nearest the heart, which after a small straightning again, emptied it self into the second; which tho' something less than the first; yet much larger than the third, which was near the division of the *Aorta* into the *Rami Iliaci*. Two of these swellings I opened; and found within, several unequal Cells, or hollows; but withal could not perceive but the Membranes here, were altogether as thick as where the *Artery* was nothing extended.

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† Ap. c. Partib. a. loco ante citato.

These extensions of an *Artery* by *Galen*, and all others, are called *Aneurismata*; as those of a *Vein*, *Varices*; and are reputed to happen, when the inward Coat of the *Artery* is bursten and so gives way for the extension of the outward; and commonly they have been occasioned by pricking an *Artery*, when they have designed a *Vein*. But what should be the cause of it, in our subject, is most difficult to assigne. For, it being the only one of the kind I have dissected; I know not how far it may be *præternatural*, or whither in others the same be to be met with again. If *præternatural*, 'tis the more remarkable it should happen here; because this is the strongest, and thickest *Artery* in the whole body. If *natural*, there is nothing I can at present better paralel it with, then those protuberant swellings in the *Aorta* of *Silkwormes*, and other such *Insects*, which *Malpighi* takes for so many several *hearts*. Which must be allowed him, unless we will deny them to have any *heart* at all. Which possibly it may. For in a *Leech*, there are two large *Arteries*, without any of these swellings; so we must either confess them, to be two hearts; or not to have any; for there is no part yet I have observed in them, that I can give that name to, besides; nor to these too, without some allowance.

As to the other parts, we have but little to say; for want of time, we had not leasure to examine the *Brain*. The Aperture of the *Eye* was but small, as in the *Hog-kind*. The *membrana nictitans*. Plainer, then usually in *Quadrupeds*; which might be convenient, since wallowing in Mud, they might the better rub off any filth, that might happen there

The *Muscles* not so distinct, as in some Brutes; and hence the *motion* of their eyes not so quick nor regular. The *Pupil* round. The *Optick nerve* inserted almost in the *Axis* of the *Eye*; and on the inside, made a small dint. The *Choroides* of a pale violet, and brownish colour.

But we shall now come, to what seems most *peculiar* to this Animal; and as I know of, to be met with, in none besides; and is mentioned by all not without great admiration, who have wrote of this strange Hog; viz. The

*Glan.*

*Glandulous* body on the back. Had I not had the first notice of it from them; 'tis a thing so uncommon, that in all likelyhood it had passed inobserved by me, as it might have done too; had only a single *Author* asserted the *Umbilicus* or Navel to be placed there. But finding so universal a consent, I thought, that tho' they might be mistaken in their conjectures about the uses; yet there must be something that must offer the occasion. Having therefore at last found it out, and well observed it; I shall here give the description of it, as I viewed it; then deliver the *opinions* of others, what they conjectured it might be; and lastly offer my own thoughts concerning it. Which having done, and taking a short survey of the *Skeleton*, we shall conclude.

In my description of this *part*, I shall have frequent recourse to the *figures* I have caused to be made of it. Which being so accurate, and to the life; will easily discover to the Phantasia what it is; better than it can be drawn or described by words. In *figure 1.* by the letter (*a*) you have the place pointed to; where 'twas seated on the *back* *viz.* just on the ridge of it, over the hinder legs, but so covered by the long *bristles* there; that it was not to be observed, but by opening of them, with the hand; and and then you shall find a small space there almost bare; only beset with fewer, shorter and finer hairs; and in the middle of it, the *protuberant orifice* of the gland; by which it discharges it self of the liquor, which is separated by it within. This *orifice*, or *feramen*, which is exactly represented in it's natural bigness, and form in *Tab. 1. figure 3.* had it's *lips* a little reflected, and protuberant above the surface of the skin. It would easily admit of a large probe; which I could turn into several parts of the *Gland*. Upon a gentle pressure with my finger, I could observe a small quantity of a white yellowish *juice*, and some part of it of a little darker Colour; which yielded a very pleasant, and agreeable *scent*; and was judged by my self, and several others, who smelt it; to be much like that of *Musk*, or *Civet*. The *Gland* it  
self

self was seated between the skin and some part of the *panniculus Carnosus*. For in the middle of that part, or surface, which respected the back, 'twas bare; and not covered with that Muscle; and only the edges of it inclosed within it, so that in taking off the skin, the Gland too, as I have observed, could not easily escape, but go with it; however this *Muscle* may be assisting to it by its contractions, in pressing out of its liquor: as the *Sphincter Muscle* is to those *Scent Bags*, placed at the Extream of the *Rectum* of other Animals, as I have formerly hinted. The *Gland* was exactly of the dimensions as represented in *Tab. 1. figure 4.* 'Twas *Conglomerated* or made up of several minute, and small white glandules. It had no considerable *Cystis*, or Cavity within; but like the *Pancreas*, or *Salivatory* glands, it had abundance of secretory *Ductus's*; which terminating at last in one, discharged it's separated juice by that common *orifice* in *Figure 3. Tab. 1.*

This *orifice* having something of a resemblance of a *Navel*, has imposed upon almost *all* (who have but thus superficially viewed it without examining any thing further) to beleive it, an *Umbilicus*: and those who have deviated from this sentiment; have been as unhappy, in delivering altogether as absurd, and extravagant Conjectures about it. To name them, (which is the *second* particular which I promised) will be a sufficient confutation. Which on this account I do only, to intimate how little we ought to rest satisfied with the *Natural History* of Animals, at present we have given us. Not but those who have done so much; justly deserve their due commendations. But it would be a great reflection, that having their helps, and far greater advantages, should we not improve their observations.

*F. Gregorius*, ( who had so great an opportunity of acquainting himself with the truth of it, being so long in the Country ) tells us, *Umbilicus exit per spinam circa Clunes.* *Hieron Benzonus* saith, that in a port in *Panama*, the Spaniards had given them by the Natives, bread, fish,  
fruits,



fruits, and swines flesh. *Apri autem isti Indici, seu agrestes fues; Umbilicum in dorso gerunt.* In the notes to this Chapter, the same is confirmed of the wild hogs in New Spain. And Gomara writes the same, of those in Brasile. Oviedus tells us of those in Terra firma, that *Umbilicum in medio dorso gerunt.* Josephus a Costa affirms much the same, *Saynos animalia sunt Apriformia Umbilicum in dorso gerentes.* Jo. Faber concludes from these, and all the accounts he could meet with, in the writers of the Natural History of the West Indies, as a most undoubted truth; *Sayno esse Aprum, cui Umbilicus non in ventre sed in dorso prominet.* And altho' in some other circumstances, their testimonies disagree; yet he saith, *in hoc omnia conveniunt, Umbilicum circa dorfi Spinam existere.*

Indeed he is very liberal; and gives him, (if I may so call it) a long Navel-string too. It may be, being imposed on, by the picture of *Nardus Ant. Recchus*; where there is something very prominent; and as I believe, was designed only, to point to the place; where this supposed Navel was seated; rather than to represent any thing natural in it. But in the description, his words are these, *sed quod maximopere admireris, ac præter naturæ seriem contigisse dicere queas, nec ullis alijs in bestijs animadvertas, est; quod Animal hoc prominentiam quandam in dorso sortitum fuerit, eminentem apprimè & detruncati formæ intestini conspicuam: Et hanc in dextra quidem sui parte, prope spinam dorfi sitam, clunes sc. versus, perpendiculariter Genitalis Masculini potius quam umbilici regioni, in ventre adesse porcis soliti, respondentem.* In his Scholia on this, he spends some pages in reasoning on this so odd a Phenomenom. But being so much mistaken in the <sup>7</sup> of the question; we shall not trace him farther: but see what others have thought of it.

And our next instance shall be, the opinion of *Falco-burgius*, a Physitian at *Leyden*; who dissected one brought

† vid. Jo. Fabri Exposition. in Animal. Novæ Hisp. p. 637.

from *Brasile*. And from an *Anatomist*, we might expect something more accurate. Indeed he denies it to be a *Navel*; but will have it to be a *breast*, or *Mamma*. I will give his account of it, as I meet with it in <sup>v</sup> *Bartholine*; who has taken it out of *Margravius* (which at present I have not by me) *in dorso* (says he) *externi mediæ tate, sive super spinam dorso prope vertebrae Lumbares, mamma est, cujus circumferentiam aureus ducatus metiebatur, quam porcellis lactandis destinata esse, ex glandulis substratis judicabat; in eas enim venæ variæ, eæque satis magnæ inferuntur. Papillarum in summe nullum usum credebat; nulla enim glandula subjicitur, nec vasa sanguifera comparent pro lacte generando sufficientia.* Indeed *Jo. de Laet* in his annotations on that Chapter in <sup>w</sup> *Margravius*, tells us, he was fully informed by those that lived in *Brasile*; that the young *pigs* there, did suck the *Teats* under the *belly*; and not that fancied one on the *back*; He will rather have it therefore, an *Umbilicus*, as all the *Natives* take it to be.

But the third opinion is that of <sup>x</sup> *Jo. Leri*, and *Thevetus*, who make it a *Spiraculum*, by which it *breaths*. *Habet* (saith he) *a natura foramen in dorso, quemadmodum in capite suæ marinæ habere dixi, quo spiritum emittit, admittitque.* <sup>y</sup> *Gul. Piso* with a short *Censure* on it, denies that any of these offices ought to be given to this *part*; and is more inclinable to the opinion of <sup>z</sup> *Hernandez*; who having dissected it, assures us; tis only *glandulosa quædam, & mollis pinguedo*. The *Colour*, I believe, made him call it *pinguedo*; tho' really it's substance is wholly *glandulous*.

In it (*Hernandez* saith) *se recipit humor quidam aqueus, qui digitis expressus fluit*. But I wonder, that having seen, and dissected them he takes no notice of the scent it yeilds.

To interpose therefore my own *Conjecture* concerning

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<sup>v</sup> Tho. Bartholin. cent. 2. Hist. Med. 66. w Margravius. lib. 7. Chap. 7. <sup>x</sup> Jo. Leri in Navigat. in Brasil. c. 9. <sup>y</sup> G. Piso de India utriusque re. Nat. & Med. l. 3. pag. 97. <sup>z</sup> Franc. Hernandez. Hist. Quadruped. Novæ Hisp. Traët. 1. c. 2. p. 8.

it; (which is the third thing I promised) there is nothing I can parallel this *gland* with more, than those *scent-bags*, or *scent-glands*, I have formerly mentioned to be in other Animals. For tho' the whole body may be perspirable; and so diffuse a smell; yet that peculiar *fetor*, which is observed in all *strong-scented* Animals; I have hitherto constantly found, more remarkably collected into one part; the particles, which cause it, being separated from the Mass of blood by peculiar *glands*; which either quickly discharge it wholly out of the body, as in some; or transmit the separated juice into *bags*, or *bladders*, where it remains some longer time, as in many other Animals.

This I first took <sup>a</sup>notice of, in *Polecats*; that just at the extrem of the *Rectum*, were placed two *bags*, filled with a crasse, and whitish liquor; whose *stink* was so very great, that I could not well endure the room, till I had removed them; and then the whole body seemed very inoffensive. The same I have observed in abundance of other Animals; as in all the *Polecat-kind*, in our common *Cats*; In a *Lyon*; in *Dogs*; In a *Fox*, &c. Those *bags* in the *Civet-Cat*, or *Hyana odorifera* are nothing but the same. As are likewise those of a *Musk-quash* mentioned by *Josselin* in his *history* of the *Rarities* of *New-England*, For they are not the *Testicles* of that Animal; as that *Letter* from *Dublin* in the *Philosophic-Transactions* N<sup>o</sup>. 127. pag. 653. does intimate, for having seen the *Skins* here in *Town*; and those *Musk Cods*; I find them to be only the *Scent-bags*. So the *Castoreum* we have in our *Shops*, is not the *Stones* of a *Beaver*; as formerly reputed; but of the same nature altogether with our *Scent-bags*.

I should be too prolix, should I enlarge upon this subject here, it shall suffice to say, that in most *Species* of Animals there may be observed, something the same, or

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<sup>a</sup> Vid. Dr. Plot's Nat. History of Oxon Shire. Cap. 9. p. 395.

or analogous to it, which give them, their peculiar *fætors*, or smells. Thus I have observed in *Reptiles*, as the <sup>b</sup> *Rattlesnake*, in *Vipers*, in our common *Snake*, &c. two *long bags* in the *Tayle*; which empty their *fatid liquor*, near the verge of the *Rectum*. But in all *Animals*, I find not these *bags* or *glands* seated here; but in some, in different parts of the body. In *Fowl*, and *Birds* in the *rumps* (as I have formerly mentioned) you will meet with two *glands*; which have their pipes or *secretory ductus* arising on the top of it, above the surface of the *Skin*; which discharges a *fætid liquor*. I find these *Glands* the largest in *Geese*, and the *Duck* kind, which use the water; and any one at the table, by tasting may perceive in a *Duck*, how strong *scented* they be. In *Turky's*, tis less glandulous; but they have a larger *Cystis* within. In the *Ostridge* indeed, I did not observe it on the *Rump*; but something higher on the *back*; where it made two bunchings out; and under the *Skin* I found a *Cystis fill'd* with a concreted yellowish juice, this something approached near the place, where was seated the *Gland* in our *Mexico Hog*, which I call the *Scent-gland*, and it yielding so grateful a *perfume* (for so it was esteemed by my self, and several others, who smelt it) from it, I have named it, the *Mexico Musk Hog*.

This difference is remarkable; whereas our *Musk Hog* has it's *Scent Gland* seated on the *back*, and it has been by most hitherto mistaken for a *Navel*: So the *Gazella* or *Musk Deer* has his *Musk-bag* on the *belly* near the *Umbilicus*. This being so largely described by *Lucas Schroekius* in his *Historia Moschi* not long since published, I shall refer to him, for a further account of it.

But it may be expected perhaps I should give some farther reasons for the *name* I have bestowed on our *Hog*: and the rather too, since no *Author* has call'd it a *perfume*, but branded it as the greatest *Stink*; As is already ob-

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<sup>b</sup> Vid. Philosoph. Transact. No. 144 p. 38.

served by that great *Caution* they give, of cutting it out, least it spoils all the other flesh, *Jo. Faber* labours much to give an account, how this horrid *fætor* should happen. And having fallen into one error, in supposing it a *Navel*; that leads, and præcipitates him into others. And makes him fancy sometimes it may be from the *Urine*; whose *Virulent Steams* may come here, by the *Urachus*. Other times he knows not, but that an *Intestine* likewise may be fastened there: but is most of all inclinable to think, 'tis from the *Urinaculum* as he calls it. Thus he observes what an horrid *Stink* the *Urine* of *Cats* will make, where it lights. But here I must remark that in rendring their *Urine*, at the same time, they may empty their *Scent-bags* seated at the *Rectum*, which mixing with it, in a great measure, may give it it's *strong fætor*. So the same of *Rats*, and *Mice*, of a *Fox* when hunted, &c. And I am apt to think 'twas by removing these *Scent-bags* rather, then taking out the *Kidneys*; that they made the *Sarigoy* edible, which otherwise stank so much, that the *Barbarous Natives* refused them, as out of *Lerius*, *Jo. Faber* takes notice. This *Stink* therefore or *Smell* in our *Tajacu*, come not from any other parts; but is naturally separated here. As is the *Musk*, the *Civet*, the *Castor*, the smell of a *Fox*, of the *Pole-Cat*, &c. in their proper *Scent-Glands*, and *Scent-bags*. Nor am I any thing concerned, that others say it *Stinks*, when I would make it a *perfume*; Or do I, question, but that their *Sense*, and *Noses* were as good as mine: Since I know, that the best *perfumes* sometimes make the greatest *Stinks*. *Civet*, nay *Musk* it self when fresh, and green, and in large quantities, are no ways agreeable, but very offensive to the smell; as many have observed, And what is more too, such is *Ambergrease* at the first, as *Gul. Pifo* does assure us. *Quod equidem mirum* (saith he) *cum omnis, ante insolationem, molle tantum gluten sit Ambra; ingratoque adeo odore nares fe-*

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\* *G. Pifode Indiæ utriusque re Nat. & Med. li. 1. p. 17.*

*riens, ut ab inexpertis plane respuat.* Our *Tajacu*, therefore when young, and when but a small quantity of this liquor is separated by this *Gland*; may afford but little, or no *Scent*. So *Foxes* till they are well grown, do not much *Stink*; but afterwards, when in great plenty this juice is voyded; by it's copiosness, and being thin, and fluid, and so more vapourable; it might strike our Organs with such brisk, and nimble strokes; as to create a pain; whereas a more leasurely appulse of it's particles from a lesser; and concreted body, may give a pleasure. As the fierce rayes of a scorching fire, does excite a dolorous sense; whenas it is delighted, and refreshed by the gentler beams of a moderate Sun.

Our *Tajacu*, therefore no doubt, when this gland does very liberally discharge it's liquor, may be thought to *stink*; and yet this *stink* in time, may become a *perfume*. Thus that fætid liquor in the *Scent-bags* of a *Weasel*; having formerly put it on a paper, and kept it a little while; afforded me a pleasant smell. Why therefore we perceived no stink at first, upon the dissection of this *Gland*; but rather a sweet, and pleasant smell, (if it is otherwise in the *Countries* where they breed) this may be the reason; be cause it had been dead some days, before I examined this part. And then I found but a small quantity of an incassated liquor there. Tho' I must acknowledge that I was informed that when it was alive; it was observed by the family, where 'twas kept; that wherever it went, it left a good *perfume* behind it. This I am sure of, that when 'twas dead, and observed by me, and several others; it yielded a *fragrant* one, which I think is sufficient to justify, or at least to excuse the *Name* I have given it.

And now to give a short account of the *Skeleton* and so to end; we observed that the *Cranium*, seemed entire, without *futures*. From the Nose, to the end of the Pole  $8\frac{1}{2}$  Inches. Here the *Cranium* grew very narrow; and then did spread it self again triangularwise, and behind made a large hollow where it respected the back; and where

where were inserted strong *Muscles*, and the *ligament* from the back, I formerly mentioned; by which means the *head* is kept so straight up; that when alive, he seemed to have but a very short if any *Neck* at all. The *Forus auditorius* or passage to the *Eare* was something remarkable; being placed near the *Pole*, and is represented by letter (*b*) in the *Skeleton*.

In the upper *Jaw* before were four *Teeth* or *Incisores*. A little farther was placed a large flat *Tusk*, sharp-edged; and standing outwards; and beyond that, of each side, six double *Teeth* or *Molares*. In the *Baby Roussa* there are but five; and abating the largeness of the *Tusk*, in the lower *Jaw*; and those *Horns* (as<sup>d</sup> Dr. *Grew* asserts them to be; who calls this Animal a *Horned Hog*) in the upper; in almost all other respects, the bones of the *head* here, were like those of that Animal.

The lower *Jaw* was  $6\frac{1}{2}$  Inches long;  $1\frac{1}{2}$  broad at the first double *Tooth*, of which there were six of each side. The *bone* of the lower *Jaw* here, from the *Dentes Molares*, to the *Incisores*; seemed spongy and *carious*; and the *Tusks* in this *Jaw*, were rotted out; as were one, or two of the *Incisores*; which in all were about four.

There were seven *Vertebrae* of the *Neck*; which measured in length  $4\frac{1}{2}$  Inches. The first or *Atlas*, had two broad transverse *processes*, but no *spine*. The second had a broad large *spine*. The third, fourth, fifth, had no *spines*; the sixth, and seventh, had large acute ones. There were nineteen *Vertebrae* of the *back*; the *spines* of the first, second, and third, were about three Inches long; but they gradually decreased, as they approached the *Tayle*. The first *Vertebra* of the *Os Coccygis*, was two Inches long. but I thought, that first it might have been several; tho' now 'twas but one bone. There were about six *Vertebrae* more; which ran no farther then the extent of the *Os Ischij*.

<sup>d</sup> *Museum Regal. Societat.* p. 27.

There were fourteen *Ribs* of each side, The *Os Sterni* jutted out about an Inch, beyond the setting on of the first *Ribs*,

The *Scapula* was five Inches long: The *Os femoris* of the fore foot,  $5\frac{1}{2}$  Inches long. The *Os Tibiæ* of the fore foot, about the same length in the whole: but from the juncture with the *Os femoris*, to the *Os Metatarfi* twas but four Inches. For from the juncture with the *Thigh-bone*, it jutted out further as in the Fig. The bones of the *Tarsus* were five: of the *Metatarsus* three, about two Inches long. The bones of the *Digiti* nine, there being three, to each *Claw*; and three *Claws* on each fore *foot*.

The *Os femoris* of the hinder foot, was almost six Inches long; and near it's juncture with the *Os Tibiæ* it had a small bone, like the *Patella* in the knee of a Man. In the leg here were two bones: the *Focile majus*, and *minus* five Inches, and half long. But this part in the fore leg was only a single bone; tho' in a *Dog*, a *Munky* and some other Animals there are two bones in the *fore-leg* likewise. The *Os Calcis* was almost two Inches long; and there were four other bones of the *Tarsus* or instep.

The *Metatarsus* or foot was composed of four bones; but the two inwardmost much the largest; being  $2\frac{1}{4}$  long, there were four *digiti*; in each three bones; whereof the last was covered with a *Nail*.



## The Explanation of the Figures.

## Tab. I.

*Fig. 1.* Represents the natural shape of this *Mexico Hog*: and the line marked (*a*) points to the *Scent Gland*, on the hinder part of the back.

*Fig. 2.* Gives a view of the *Skeleton*.

- a* The fore Teeth or *Incisores*.
- b* The Tusk.
- c c* The Grinders, or *Molares*.
- d* The Lower Jaw.
- e* That part of the Lower Jaw, which was carious.
- f* The *Cranium*.
- g* The *Orbit* of the Eye.
- h* The *Porus Auditorius*, or passage to the Ear.
- i* The traingular Expansion of the *Cranium* backwards.
- k* The *Vertebrae* of the Neck.
- ll* The *Vertebrae* of the Back and Loyns.
- m* The *Vertebrae* of the *Os Coccygis*.
- n n* The Ribs.
- o* The protuberant bone of the *Sternum*.
- p* The *Scapula* or shoulder blade.
- q* The *Os Ischij*.
- rr* The *Os Femoris* or Thigh bones.
- f* The *Patella* of the hinder legs.
- t* The *Tibia* of the fore leg.
- v* A large protuberancy of the *Tibiae*.
- w* The *Tibia* or *Fossile majus* of the hinder leg.
- x* The *Fibula* or *Fossile minus* of the hinder leg.
- y y* The *Tarsus* or Instep on both legs.
- z* The *Calx* or heel in the hinder leg.
- aaa* The bones of the *Metatarsus* or Foot.
- ccc* The *Digiti* or Toes.
- γγγ* The Nails.

*Fig. 3.* Shews the Orifice of the *Scent Gland*, as it naturally appeared on the outside of the Skin of the back; which from some small resemblance it had, imposed on all almost hitherto, to beleive it an *Umbilicus*, or Navel a little space round this Orifice was almost bare of *Bristles*.

*Fig. 4.* Exactly represents, in it's natural dimensions, the *Scent Gland*  
 E c c it

it self ; which was *Conglomerated*, or made up of abundance of lesser glandules.

**Fig. 5.** In this Scheme are delineated most of the *Viscera* in the belly ; being taken out of the body. Where

*A* The *Oesophagus* or Gullet.

*B* The first *Ventricle* or Stomack.

*C* The second *Ventricle* or Stomack.

*d d* The *Cornua* or horns of the second Stomack.

*E* The third Stomack.

*f* The *Pylorus*.

*g g g* The *Intestina tenuia*, or small guts.

*H H H* The *Colon*.

*i* The *Cecum*.

*k* The *Rectum*.

*l* The *Mesentery*.

*mm* The *Meseraick Vessels*.

*n* The *Pancreas*.

*o* The *Spleen*.

*P* The *Liver*.

*q* The *Ductus* of the Gall from the Liver to the *Duodenum*.

*Tab. 2.*

**Fig. 1.** Represents the *Stomack* opened.

*A* The *Oesophagus* or *gula*.

*b* The entrance of the *Gula*, or gullet into the first Stomack.

*C C* The inside of the first Stomack, which was invested with a strong thick white *pellicle* or membrane.

*D D* The second Stomack,

*E E* The third Stomack in which were remarkable several *Plicae* or folds.

*f* The *Pylorus*.

**Fig. 2,** Represents the outside of the three *Stomacks* more in their natural Situation.

*A* The *Gula*.

*B* The first Stomack.

*C* The second Stomack.

*D* The third Stomack.

*E* The *Pylorus*.

*fff* The blood Vessels.

*Fig. 3* Represents the *Genital* parts, and the bladder.

*A* The bladder of *Urine*.

*B* The neck of the Bladder.

*C C* The Ureters.

*D D* The *Testes*, or Stones.

*e e* The *Vasa deferentia*.

*ff* The *Vesiculae seminales*, which here were glandulous.

*g* The *Caput Gallinaginis*, where the *Vesiculae seminales*, and *Vasa deferentia* empty themselves into the *Urethra*.

*h h* Two glandulous bodies, which possibly may be reckoned the *Prostata*.

*i* The orifices by which these glandulous bodies empty themselves into the *Urethra*.

*K* The *Urethra* opened.

*L* The *Penis*.

*M M* Two Muscles belonging to the *Penis*.

*N N* Other Muscles assisting to the same.

*Fig. 4.* Shews the heart, and the *Aneurismata* of the *Arteria Aorta*, or great Artery.

*A* The heart.

*b b* The ascending branches of the great Artery.

*c* The descending Trunk of the great Artery.

*D* The first *Aneurisma*, or distention of the great Artery opened to shew its several cells within.

*e* A straightning of the Artery again.

*f* The second *Aneurisma* opened likewise.

*g* The third or smallest *Aneurisma*.

*h h* The *Iliac* branches of the great Artery.

Fig. 4.

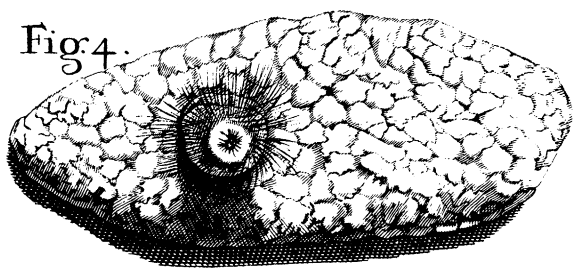
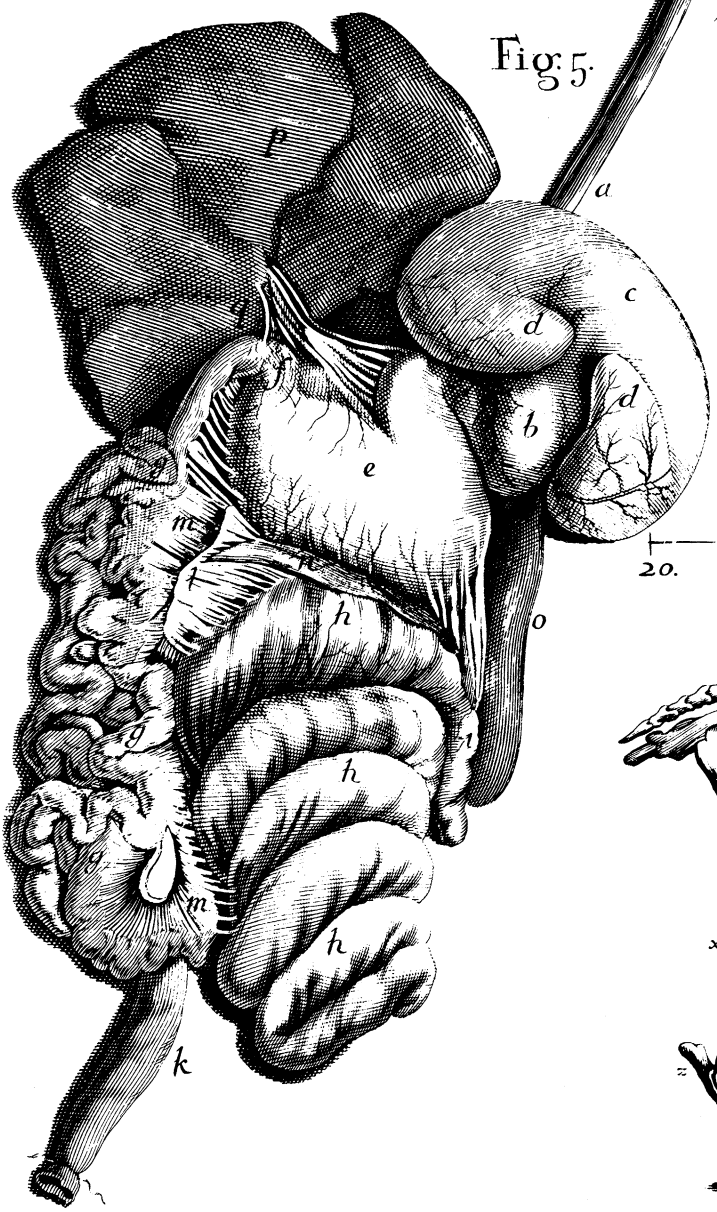


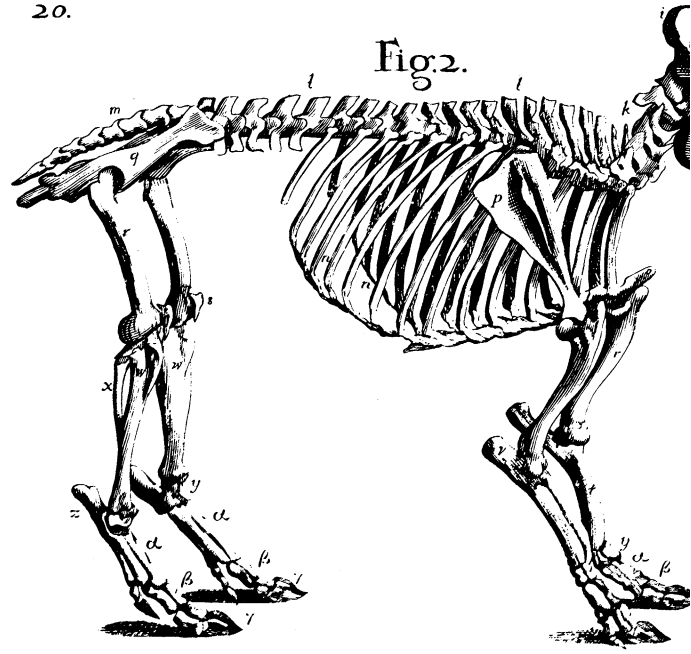
Fig. 5.



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Fig. 2.



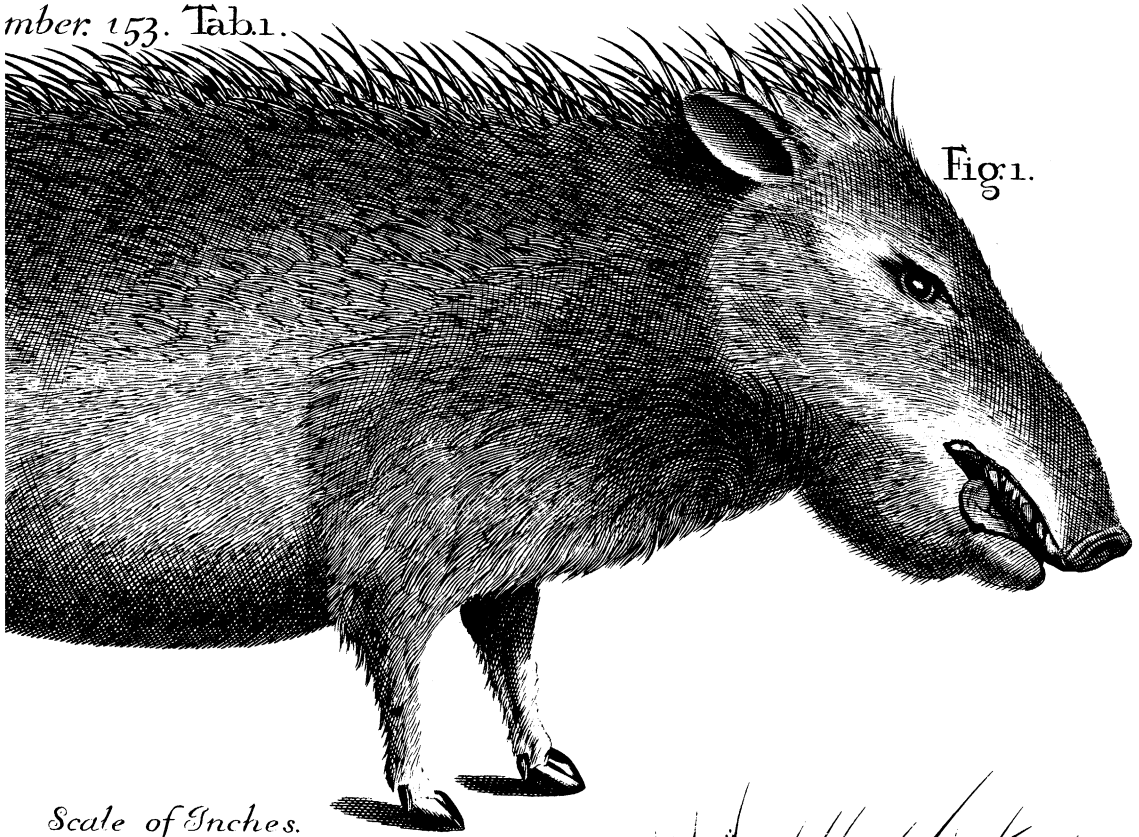


Fig:1.

Scale of Inches.

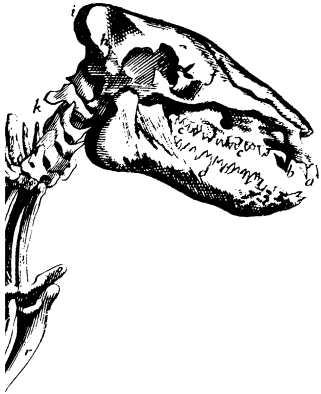
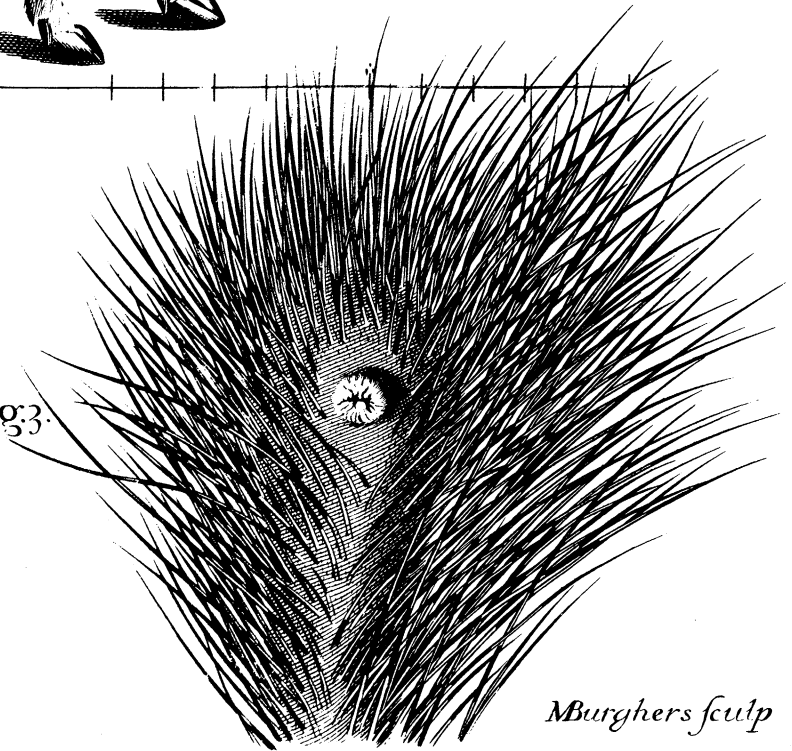


Fig:3.



MBurghers sculp



Fig. 1.

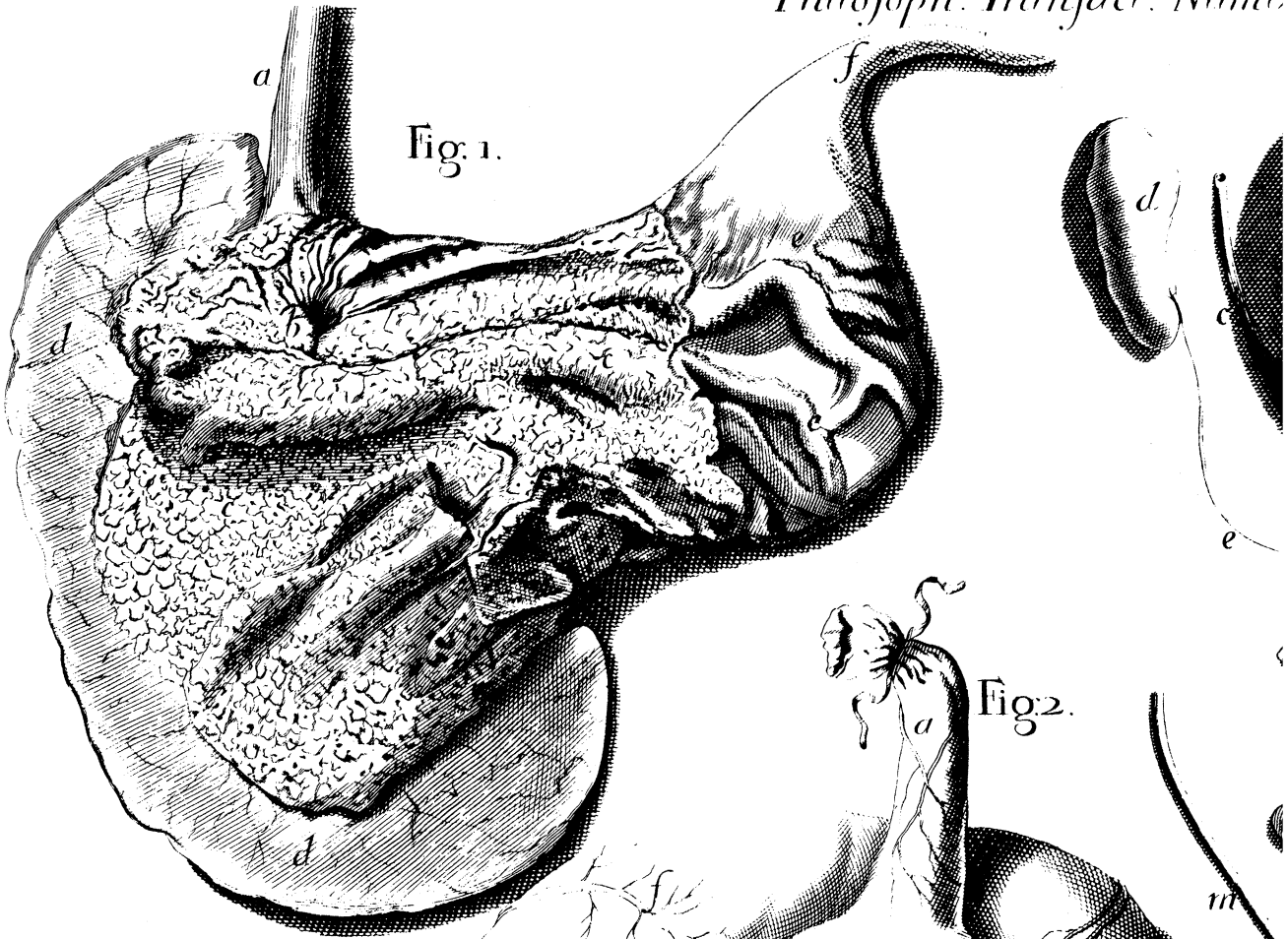
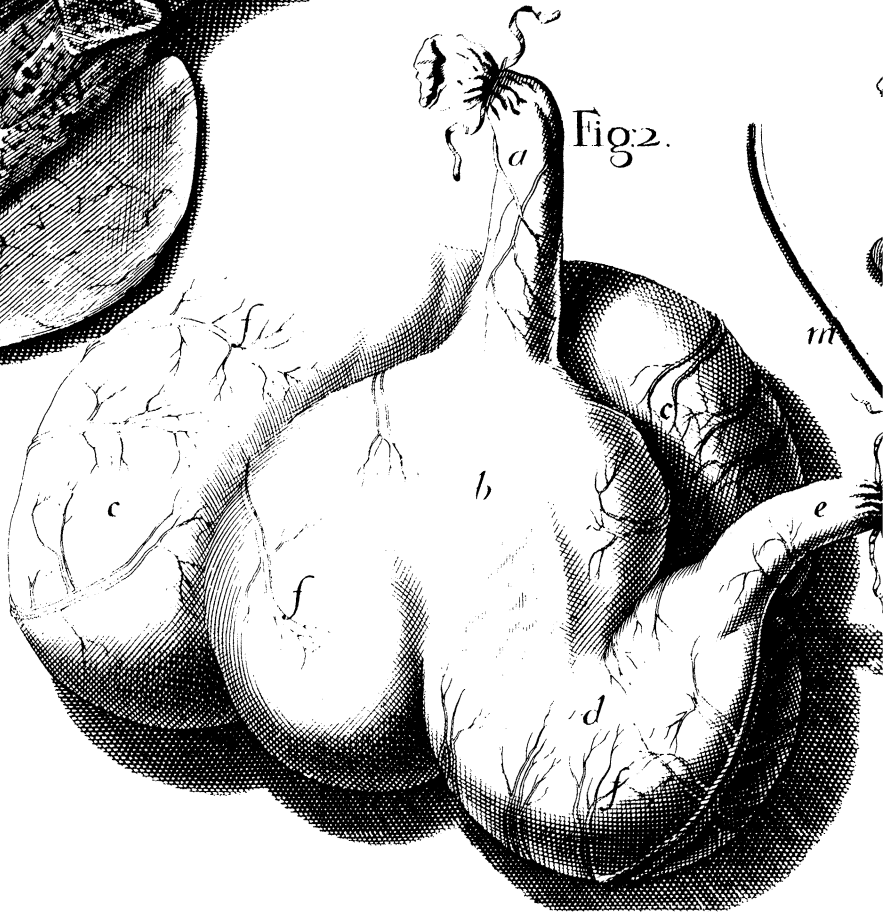
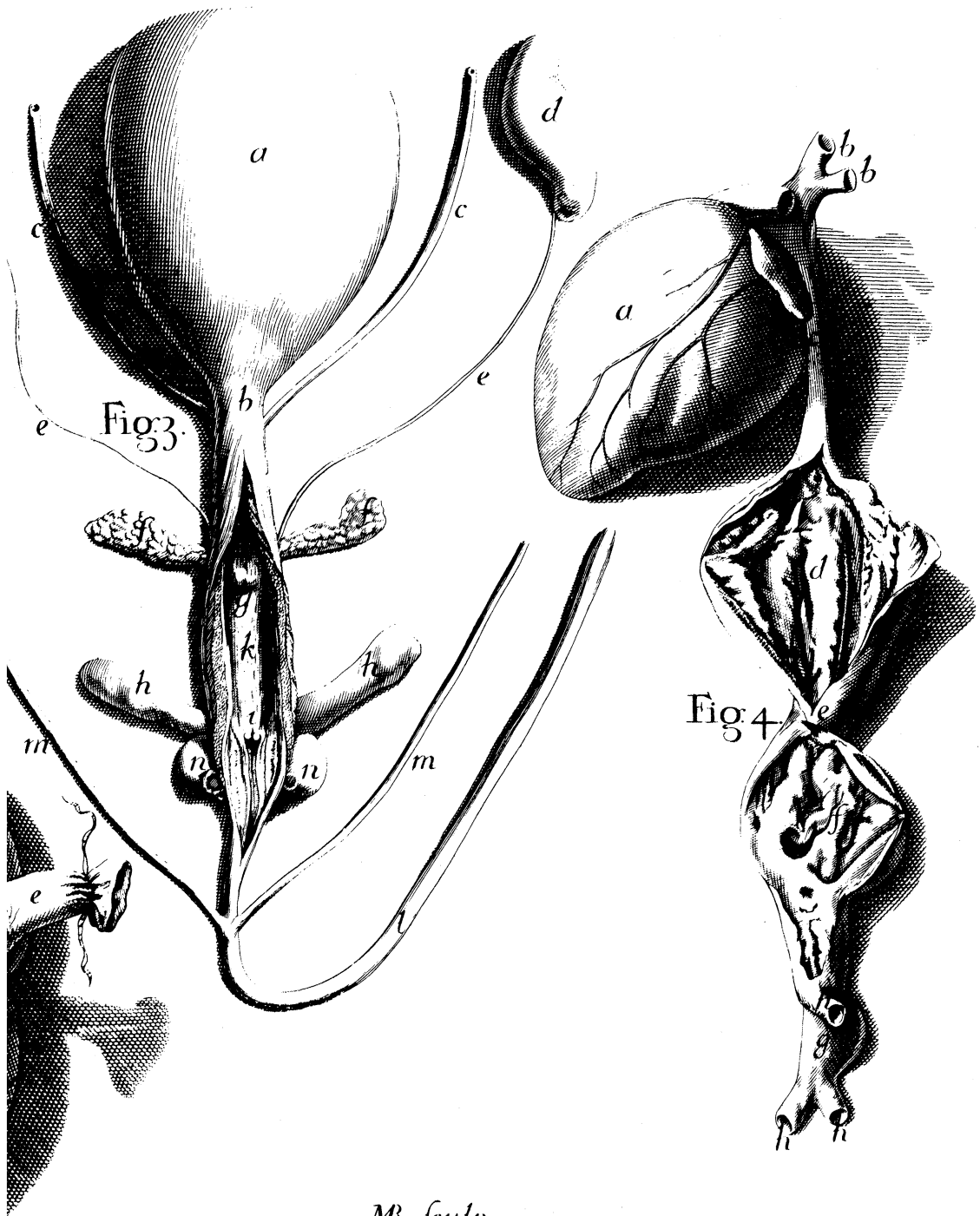


Fig. 2.





MB. sculp.



Fig. 4.

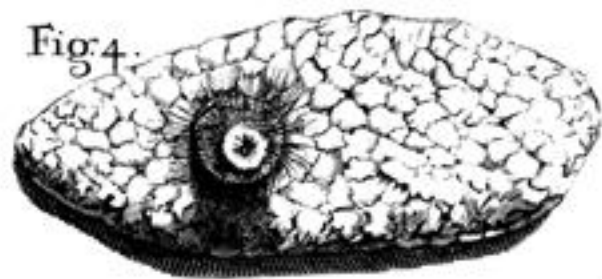


Fig. 1.

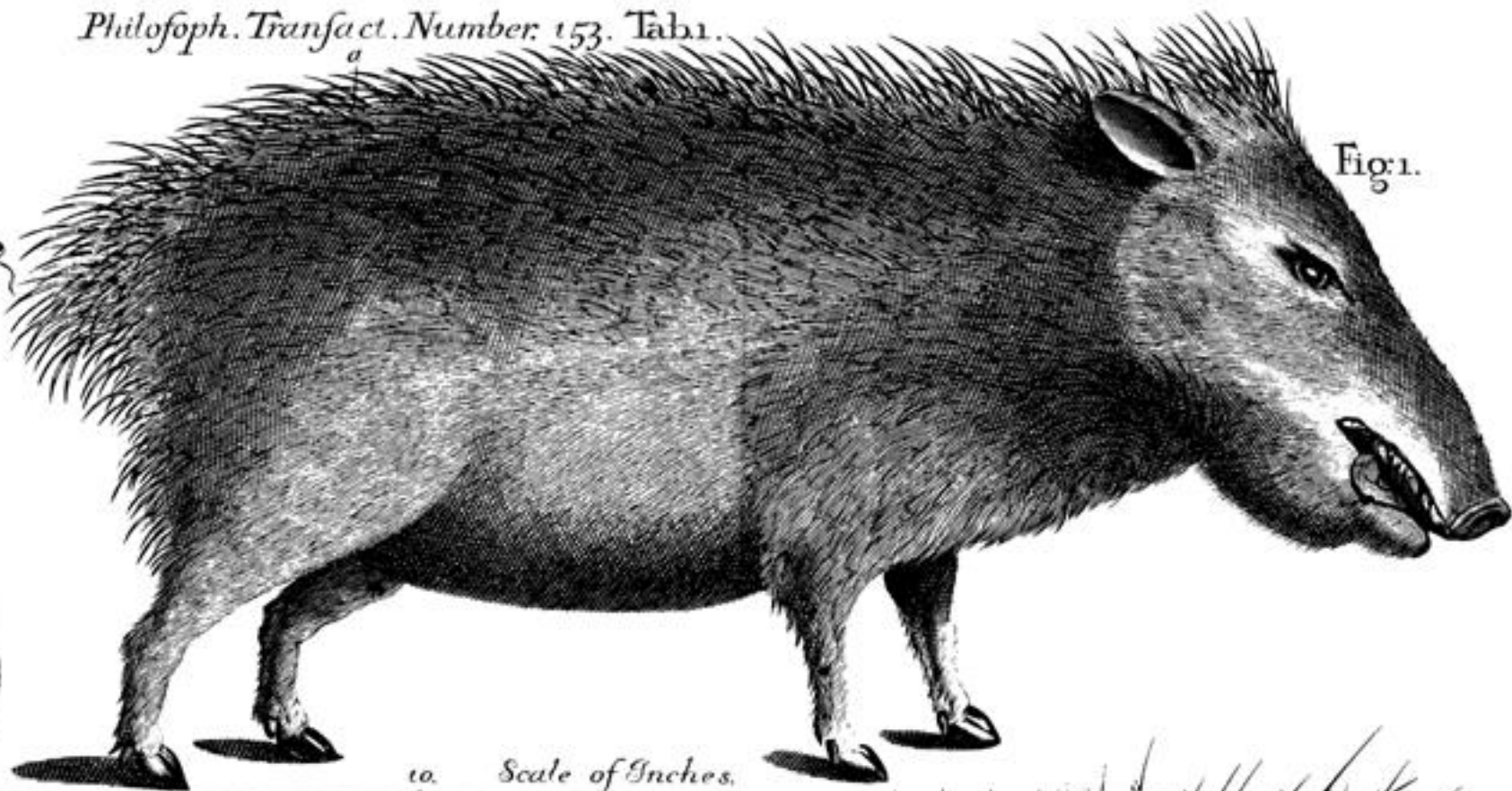


Fig. 5.



Fig. 2.

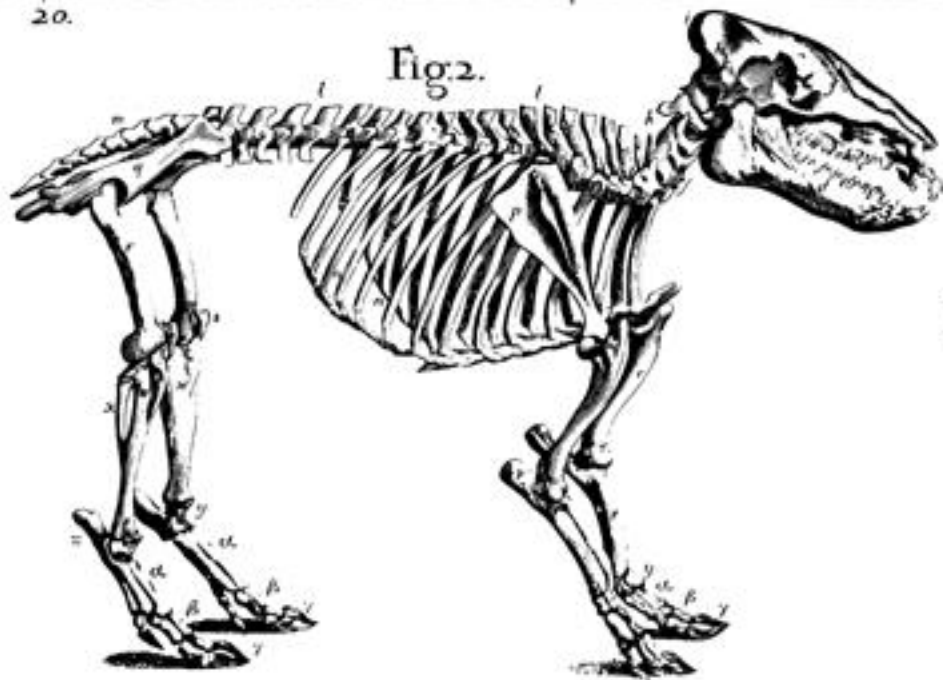
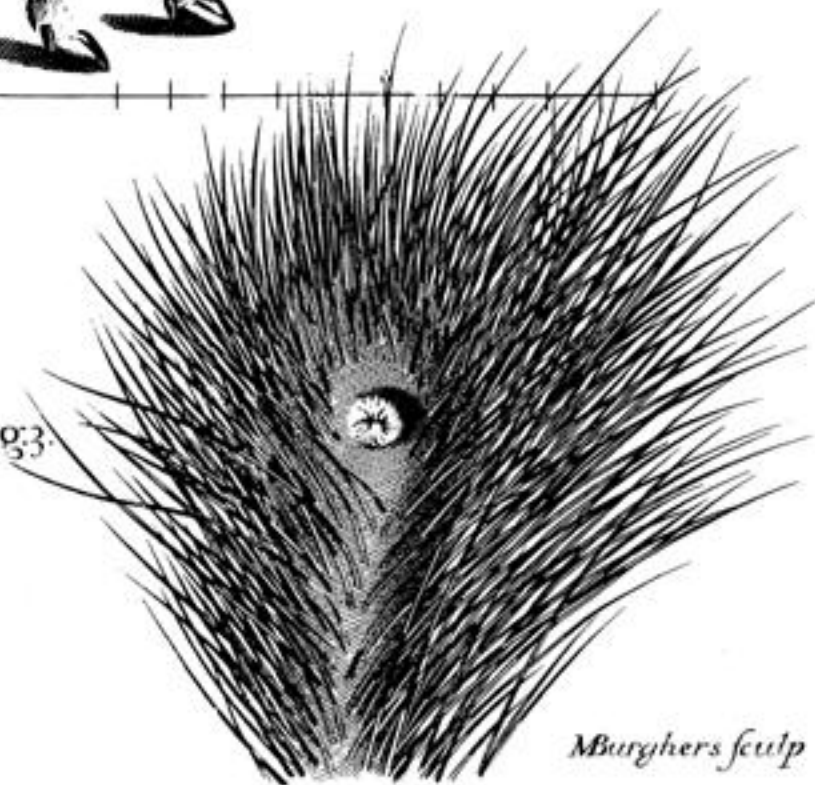


Fig. 3.



Mburghers sculp



