

II. *An Account of the external Maxillar, and other Salivary Glands: Also of the Insertions of all the Lymphaticks (as well above as below the Subclavians) into the Veins; which Glands and Insertions have not hitherto been mention'd, or not truly described by any Authors. By Richard Hale, M. D. Reg. Soc. & Coll. Med. Lond. Soc.*

THE external Maxillar Glands in Brutes are of the Conglomerate kind. They lie externally, laterally (lengthways) on the lower Jaw, partly under the *Depressor Labiorum*, and partly under the *Buccinator*. A strong Membrane intervenes between these Glands and the Jaw on one side, and between them and the Buccal Glands on the other side. They are more or less red (like the *Pancreas*) according to the quantity of Blood that remains in them, otherwise their Substance is white.

These Glands receive Arteries from the external Carotids, Veins from the external Jugulars, and Nerves from the third Branch of the *Par Quintum*.

The Number of excretory Ducts from these Glands, is not always the same, in the same species of Animals. In Cows generally fourteen are discovered by the Probe. Their Orifices are valvular, about four times less than their Ducts. Every Duct is about half an Inch from the next. Those in the middle of the Glands are largest, because the Glands are there broadest and thickest. The Ducts don't communicate with one another, nor with the Buccal. Every Duct is made of lesser Ducts united, which rise from the Lobules (thro' the whole substance of the

B Glands)

Glands) which constitute each distinct Lobe, and has the same structure as the Pancreatick Duct. Each Lobe is depressed on its sides, where it is joined to other Lobes ; and between the Lobes many Buccal Glands are interspersed.

In Calves seldom more than six or seven Ducts admit any Probe ; when the Animal grows older, the Ducts appear more plain and open.

In Sheep six excretory Ducts are always found in each external Maxillar Gland.

In Dogs and Cats, &c. these Ducts are fewer, in proportion to the smallness of the Glands. 'Tis observable that these Ducts in Dogs open obliquely towards the Mouth, whereby the *Saliva* may be better mixt with the Food in Mastication ; which might be swallowed unmixt from another structure of Ducts, in these Animals that swallow greedily.

Dr. *Wharton* * first mentions the external Maxillar Glands. What he says of them, is applicable only to their appearance in Men, in which Subjects they are of the Conglobate kind, and very small, unless in Scrophulous and Venereal Cases. 'Tis plain that he had not seen them in Brutes ; for in his Figures (which were drawn from Brutes) no notice is taken of these Glands. He describes them as very small, and calls them Emunctories of the Nerves, which was the Notion (in his time) concerning the use of the Conglobate Glands ; and the *Saliva* was said † *è Nerroso Genere profundi*.

* *Steno* justly blames *Blasius* for ascribing to the external Maxillars an Excretory Duct opening into the Mouth, like the common one from the Parotid Gland. Yet *Steno* (otherwise very accurate) does not truly describe these Glands, nor distinguish them from the Buccal, tho' they

* *Cap. 21.*

† *Cap. 21. pag. 134.*

* *Obs. Anat. p. 14.*

are as distinct from the Buccal, as the Sublinguals are from the internal Maxillars. *Steno* divides his Buccal into 3 Parts. The large Ducts in a Line rise from the external Maxillars; and how distinct these Glands are from the Buccal appears plainly in Fig. 17th, &c. *Steno's* 2d part of the Buccal, * *intra quæ*, & *in mediâ parte*, are mark'd *e e*, in Fig. 14. *quæ alias*, &c. higher are the same *e e*, among the *Papillæ*. The third Part *quæ à superiore descendunt*, are *a b c d*.

The external Maxillars differ from the Buccal, in bigness, figure, structure, particular number of Ducts, colour, &c. The Buccal, Labial, internal Maxillar, and sublingual Glands, are of a yellow Colour; besides the Buccal are separated from the external Maxillars by a strong Membrane. Indeed many of the Excretory Ducts of the Buccal Glands open near the Ducts of the Maxillars (from whence *Steno* confounded these Glands) but they do so likewise round his own Ducts from the Parotids; and some Ducts from like Glands open near the Sublinguals, as also about *Nuck's* Ducts, in which places the Buccal Ducts are most numerous.

In short, there is a very great Number of Excretory Ducts dispersed all over the Membrane, that invests the Mouth, *Fauces*, &c. which rise from Glands that lie under this internal Membrane. These Glands are more numerous in some Parts than others, and receive different Names, according to the Part they belong to; as Labial, Buccal, Palatine, &c. But these are small Glandules with one Excretory Duct, and tho' they separate Saliva like the large Conglomerate Glands, Parotids, Maxillars, &c. yet they differ from these in Construction, one common Excretory Duct, &c. Whereas the external Maxillars differ from all the other Glands of the Mouth, *viz.*

by many ways from the Buccal, besides their Colour ; in which particular, they are also distinguished from the internal Maxillar and Sublingual Glands ; they differ also from these as well as from the Parotids, in having a great number of common Excretory Ducts. This number of Excretory Ducts was not observed by *Steno*, nor did he know that these Ducts in the same Line, were the Excretory Ducts of large Conglomerate Glands (like the Parotids) distinct from the Buccal.

Bartholine * mentions the external Maxillar Glands, but does not describe them. *Nuck* † only gives them a Place in his Catalogue of Glands, but takes no farther Notice of them, tho' he writes a * Book chiefly about a new Salival Duct rising from a Gland, that is found in no Animal besides a Dog.

Mr. *Comper* had never seen these external Maxillar Glands, as appears by a Letter of his (now by me) written above Twenty Years ago, in answer to one I sent him upon the first discovery of these Glands. The external Maxillars in Men (of the Conglobate kind) are marked *g*, in the first Figure of his *Nyotomia Reformata*.

The Ducts of the external Maxillar Glands are opposite to the Orifices of *Steno's* Ducts ; from which Glands and Ducts, as also from the Buccal, Labial, and Gingival Glands, the Saliva flows from all parts of the Mouth without the Teeth. From *Wharton's* and the Sublingual Ducts, from the Tonsils, *Fauces*, *Fretum Stenonis*, Gingival, Lingual and Palatine Glands, the Saliva is derived, from the upper and lower, former and hinder parts of the Mouth within the Teeth.

What has been said of these Salivary Glands, &c. will be best understood by the following Figures, which were

* *Pag.* 542.

* *Sialog.* p. 15. 158.

† *Adenol.* p. 5. n. II.

drawn for me in *October*, 1697. at *Trin. Coll. Oxon.* by Mr. *Burghers*, and have been lately compared with the Parts themselves in Cows, Calves, &c. These Figures are part of many more taken from Preparations at the same time, which were figured in the same Order as drawn. This is the Reason that the Cuts are marked in this manner, and it can't be of use to alter these Marks and Numbers.

The Insertions of all the Lymphatick Vessels into the Veins can be discovered but in few Subjects, and no Figure has yet been given of them.

These Figures shew the Course of the *Lympha* both below and above the Subclavians in Men, and Axillars in Dogs. The *Lympha* below the *Receptaculum Chyli* is conveyed from all the inferiour Parts by a great number of small Lymphatick Vessels, which uniting with others obliquely above the Valves, become bigger in proportion, till at length they constitute two large Trunks near the Emulgents, which are the *Pedunculi* or Beginnings of the *Receptaculum Chyli*. The *Lympha* from the Parts above the Subclavians, is derived in like manner from lesser Lymphaticks, to the common Ducts that are here delineated.

I know *Pecquet* has given a Cut of the Thoracick Duct in a Dog; which Duct is double from the Receptacle, and is inserted by four Branches into each Axillar. I believe with * *Bartholine*, (who has borrowed this Figure from *Pecquet*) that such an Insertion is a *Lusus Naturæ*. For tho' the Thoracick Duct may be double, and is sometimes divided into two Parts near the Subclavians, yet generally it is single, the *Lympha* from all parts on both sides the Body being carried by proper Lymphæducts into one common Thoracick Duct, that conveys this Liquor, together with the Chyle from the Lacteals, into the left

* *Barth. p. 616, 620.*

Subclavian Vein, by one, three, or more Branches. For there is as great a variety in the number of these Branches, as in the places of their Insertion.

Mr. *Coxper* injected the Thoracick Duct in a Humane Subject, and has given a Figure of that Preparation in his Book of Anatomy. But this Figure is imperfect, and the Insertion of the Thoracick Duct so ill drawn, that little can be learnt by it. However, no Anatomist has given any Cut, that demonstrates the Insertions of the Lymphaticks from both Arms and both sides of the Head, &c above the Subclavian Veins, which appear so plain in these Figures, that no Description can make them plainer.

Explanation of the Figures.

Fig. 12. Demonstrates the Passages, or Vessels, by which the Chyle and *Lympha* pass into the Veins of a Dog.

12, 12 Those Lymphaticks that bring *Lympha* from the Thighs and lower Parts.

13, 13 Are lateral Lymphaticks arising from the Groin, Testicles, and neighbouring Parts.

14 The Receptacle of the Chyle.

15 An Indenture in the Receptacle, thro' which passes one Tendon of the Diaphragm.

16 Lymphaticks from a neighbouring Gland.

17 Some Lymphaticks from the Diaphragm.

18 An Artery that serves the Loins, and runs through a Division of the Receptacle.

19 The *Pancreas Asellit.*

20 The *Vasa Lactea 2 di Generis.*

21 The beginning of the *Ductus Thoracicus.*

22 Some Divarications of the *Ductus.*

* Barth. p. 620.

- 23 The Continuation of the *Ductus*, and its progress.
- 24 The *Aorta Descendens*. N B. 18, 24. by their Pulsation (and the Tendon at 15) much promote the Ascend of the Chyle and *Lympha*.
- 25 A common Divarication of the Duct.
- 26 A Lymphatick from some neighbouring Gland.
- 27 A double Lymphatick from the secondary Gland 42, in *Fig. 13*.
- 28 That part of the *Ductus Thoracicus* where both its Branches, and the Lymphaticks from the left side of the Head and left Fore-Leg meet.
- 29 The Lymphaticks from the left side of the Head and left Fore-Leg united; they lie on the inside of the Vein.
- 30 A Lymphatick with a Pin in it from a neighbouring Gland, perhaps the *Thymus*.
- 31 A Lymphatick from the Neck, &c. It is divided and enters the Jugular by two distinct Branches under the *Sacculus* 43.
- 32 The Lymphatick from the right side of the Head.
- 33 The Lymphatick from the right Fore-Leg.
- 34 The large *Sacculus*, or Receptacle of the *Lympha*, on the right side, that receives all the *Lympha* on that side, and conveys it into the Jugular.
- 35 The *Cava Descendens*.
- 36 The *Vena Mammaria*, which is sometimes single.
- 37 The *Vena Subclavia*.
- 38 The *Vena Vertebralis*.
- 39 The Axillars.
- 40 The Jugulars.
- 41 The right internal Jugular not injected.
- 42 A small secondary Lymphatick Gland on the back part of the top of the *Thorax*.
- 43 The *Sacculus*, that receives all the Chyle and *Lympha* from the whole Body (except 30, 31, 32, 33, 34.) and

and discharges it into the Vein: at least we know of no other Lymphaticks that any where else enter the Veins.

44 A Lymphatick, (or Membrane, for 'twas not injected) that joins 29 to the largest Branch of the *Ductus Thoracicus*.

Fig. 13. Is the upper part of *Fig. 12.* revers'd, the Duct, &c. being turned up, that the Insertion, both *Sacculi*, &c. may be better discovered.

This is to be explained by the preceding, and has only from 42 to 44 more Figures than the upper part of *Fig. 12.* has; all which are already taken notice of.

N. B. In this Subject the Chyle and *Lympha* are emptied into the Jugulars, and not into the Axillars; they are sometimes emptied partly into the Jugular, and partly into the Axillar, or Subclavian. In Men generally into the Subclavian.

Fig. 14. Represents part of the Left Cheek of an Ox, separated from the lower Jaw-bone, with the external Maxillar Glands, its Ducts, &c.

1, 2, 3, &c. to 14. Bristles inserted into the Ducts of the external Maxillary Gland *l l l*. These Ducts open sloping into the Mouth, for the better mixture of the *Saliva* with the Food.

15 The Duct 3 injected with Wax, to discover its division and bigness, in respect of the Orifice.

16 A Lobulus of the Maxillar Gland. Its excretory Duct is filled with Wax, and ends at 15.

17 The Duct 1 laid bare and open'd, to shew its large Cavity, &c.

A A, Part of the Muscles and Fat, &c. belonging to the lower Jaw.

B B, Part of the internal Membrane that invests the Mouth.

a b c d, Bristles in those Ducts of the Buccal Glands, *n n*, that I could pass any into.

e e e, Those

eee, Those Orifices of the Buccal Glandules, that were too little to admit Bristles.

kkk, The *Papilla* on the inside of the Mouth.

lll, The Lobes that constitute the external Maxillary Gland.

mmm, The Orifices of the Labial Glandules *pp*, that were too small for passing Bristles.

nnn, Buccal Glandules interspersed between the Lobules of the Maxillary Gland.

nnn near *rrr*, Part of the Buccal Glandules, where they appear thickest, and are rais'd to discover the Ducts *rrr*, running under them.

ppp, The Labial Glandules like the Buccal. Mr. *Cowper* in *Fig. 4.* letters them H, H.

rrr, The Ducts mark'd 6, to 14. as they appear under the Glandules *nn*.

N. B. The same Numbers and Letters express the same Things in the following Figures.

Fig. 15. Exhibits part of the left Jaw-bone and Cheek of a Sheep, where the Bristles 1, 2, 3, &c. shew the constant number of excretory Ducts from the external Maxillary Gland in these Animals.

Fig. 16. Shews part of the right Cheek of a large Dog, taken from the lower Jaw-bone.

f, The Orifice of *Steno's* Salival Duct.

g, The Orifice of *Nuck's* Duct, which rises as a *Papilla* on the Membrane B B.

h, *Nuck's* new Duct, not found in Men, Oxen, or Sheep, but in Dogs, their Orbit not being entirely bony.

i, *Nuck's* Gland.

ooo, The Orifices of some excretory Ducts, belonging to the external Maxillary Gland, that were too strait for the admission of Bristles.

q q, The Teeth. In this Subject they are the Teeth of the upper Jaw; near the second of which, the Orifice of *Nuck's Duct* appears.

Fig. 17. Demonstrates the back part (next the Cutis) of the external Maxillar Gland of the same Dog, as 'tis beset with the Buccal Glandules.

Fig. 18. Explains the external Maxillar Gland in the right Cheek of a Calf. In this Subject I could only probe two Ducts, 3, &c. would not admit Bristles.

III. *De Peste Constantinopoli grassante. Auctore nupero V. Cl. Emanuele Timone, M. D. Hoc scriptum ab Auctore Clarissimo, qui Constantinopoli per multos annos Medicinam fecerat, Excellentissimo Ablegato Britannico, Roberto Sutton, Eq. Aurato, traditum, ejusdem Equitis permissu, cum Societate Regia communicavit R. Hale, M. D.*

Pestem Constantinopoli ex *Ægypto* communicatam tum historiis, tum quotidianâ observatione constat. Nidum tamen in hac urbe sibi fecit, & quamvis nunquam fere veteris Pestis desint seminia, novus etiam subinde fomes advehitur. Ab hyemali intenso frigore satis bene sopitur; emicant tamen hinc inde scintillæ aliquot hyeme & vere: æstate incrementum sumit; autumnali tempore summo flagrat incendio. Venti Aquilonares statis temporibus æstate flantes (Etesiæ scil. hujus loci) quamvis frigidiusculi sint, veneni tamen pestilentialis dilatationi haud obsistunt. Australes satis calidi, si constanter flent, æstivo tempore Pestem supprimunt. Quoad symptomata Pestis Constantinopolitana adamussim respondet pesti Noviomagensi

Fig: 14.

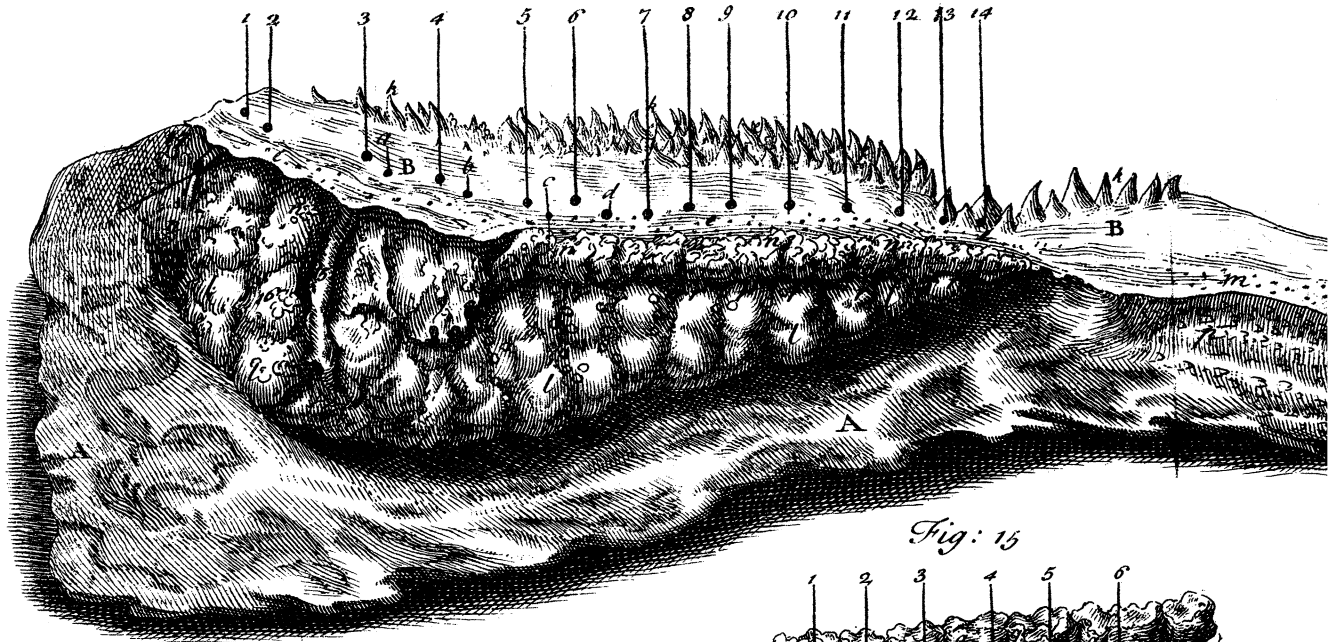


Fig: 15

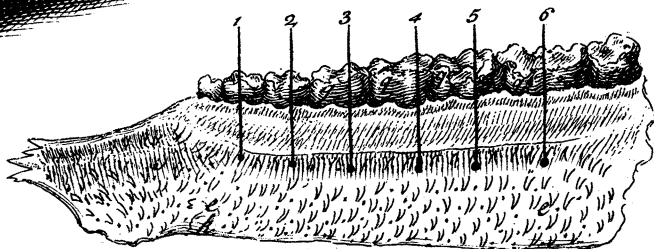


Fig: 16



Fig: 17

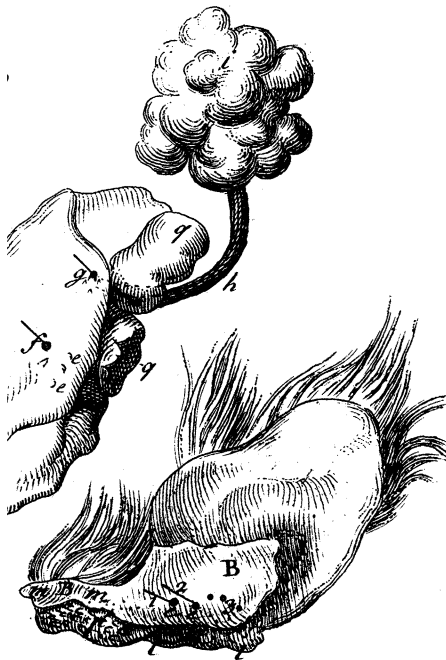
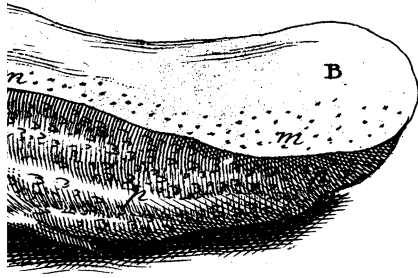


Fig: 18.

Dublin
Thursday Jan. 12. 1736.
40 minutes after 11 at night

Fig: 12.

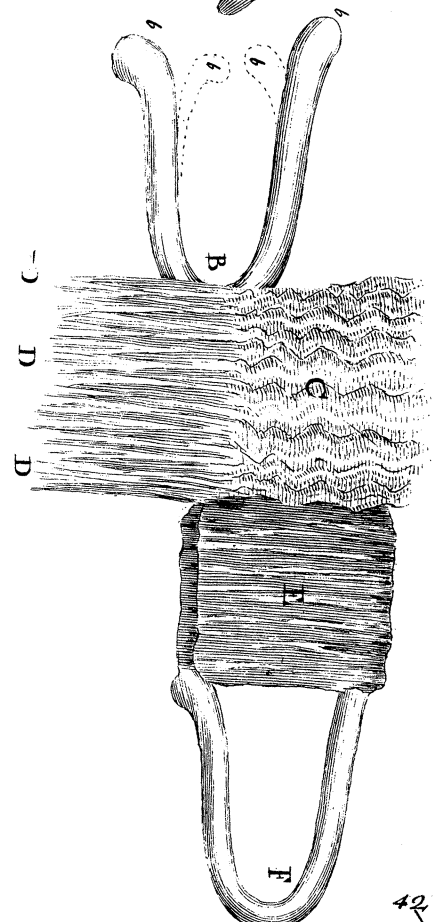
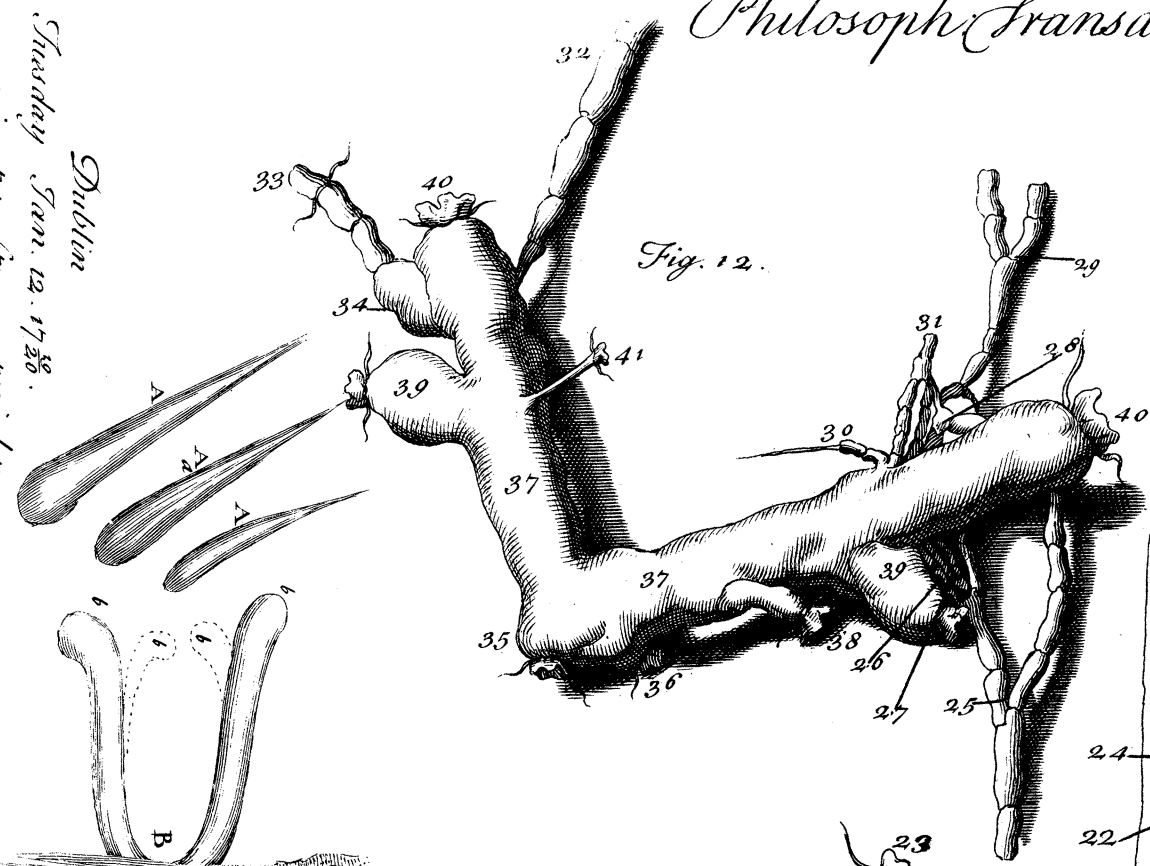


Fig: 14

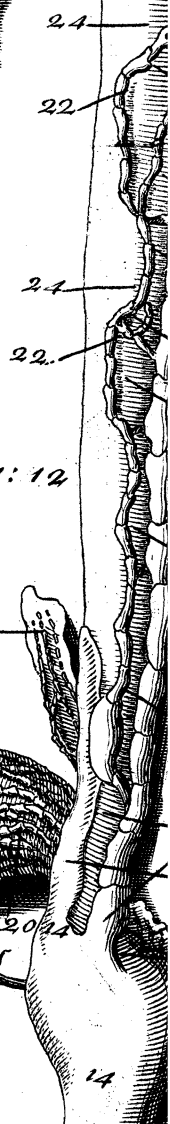
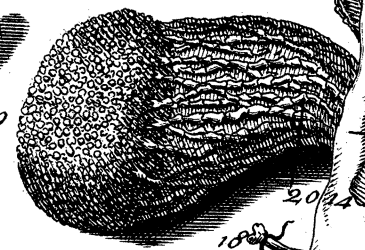
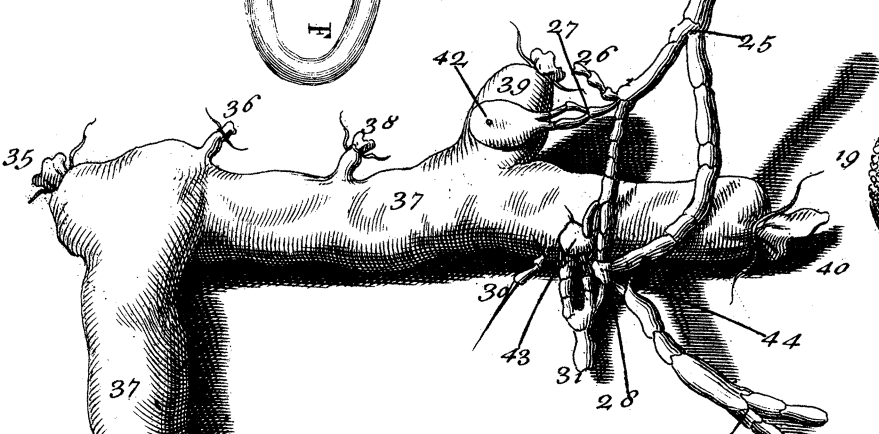
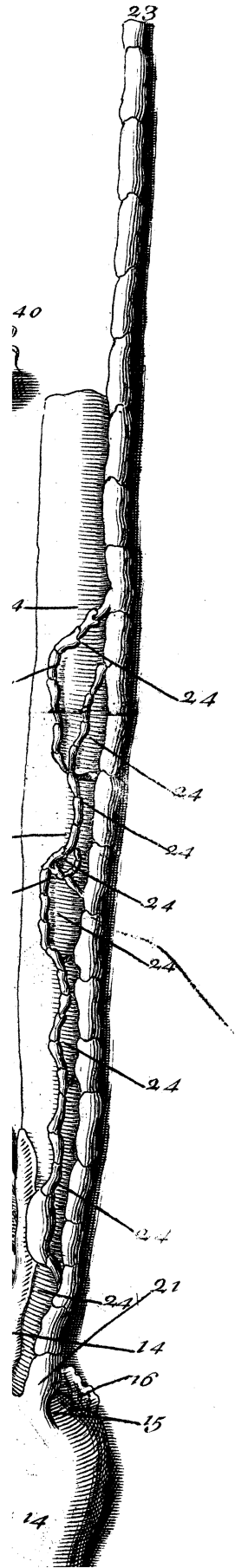
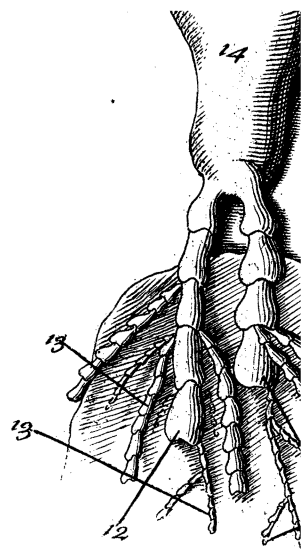
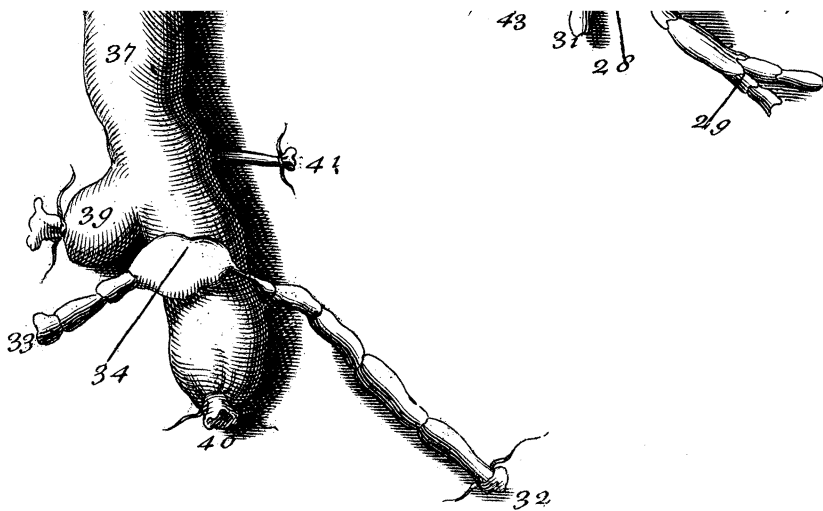


Fig: 13

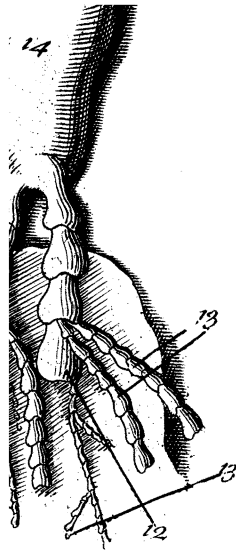


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Fig: 14.

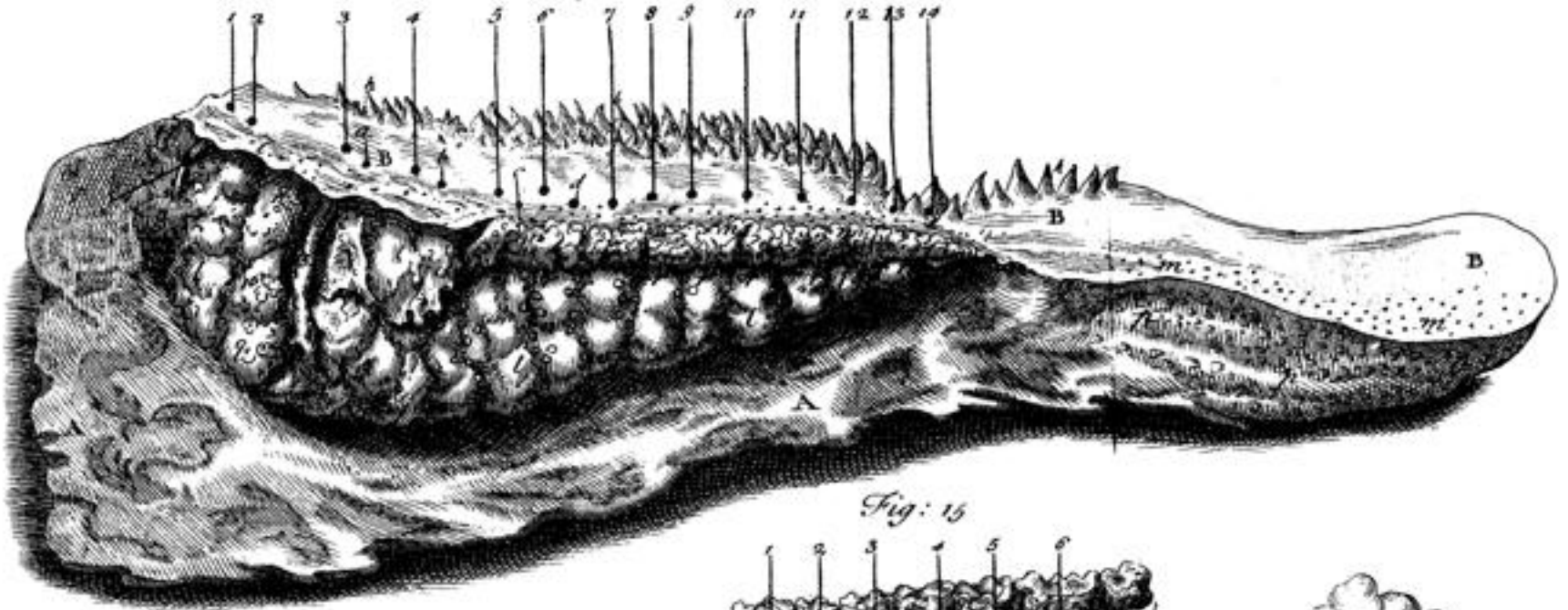


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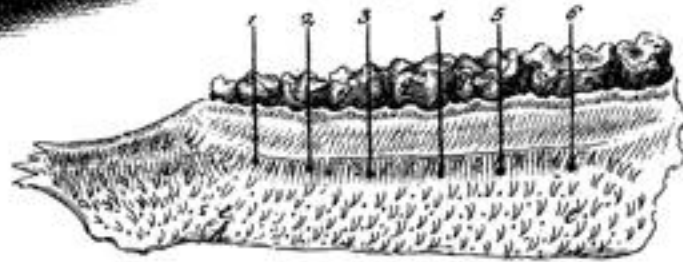


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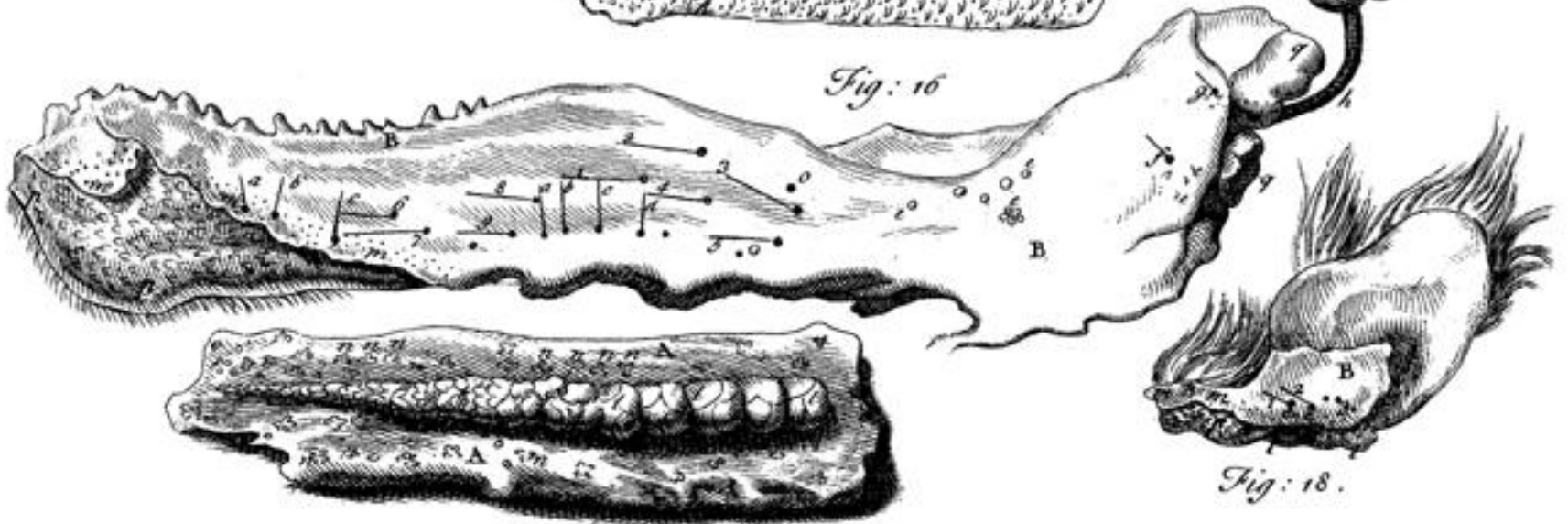


Fig: 17

Fig: 18.

Dublin
Tuesday Jan. 12. 1788.
40 minutes after 11 at night

Fig. 12.

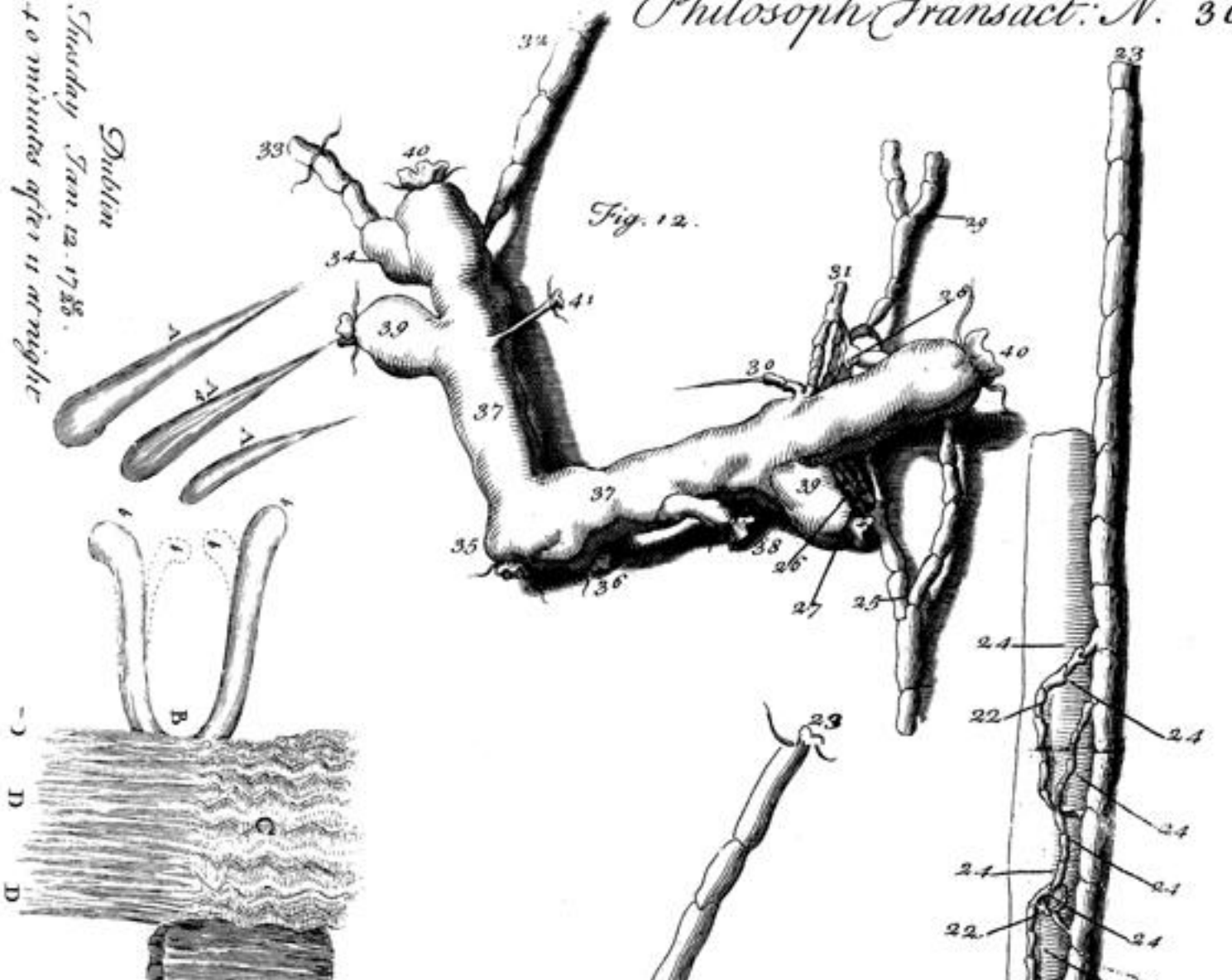


Fig: 12

Fig: 13

