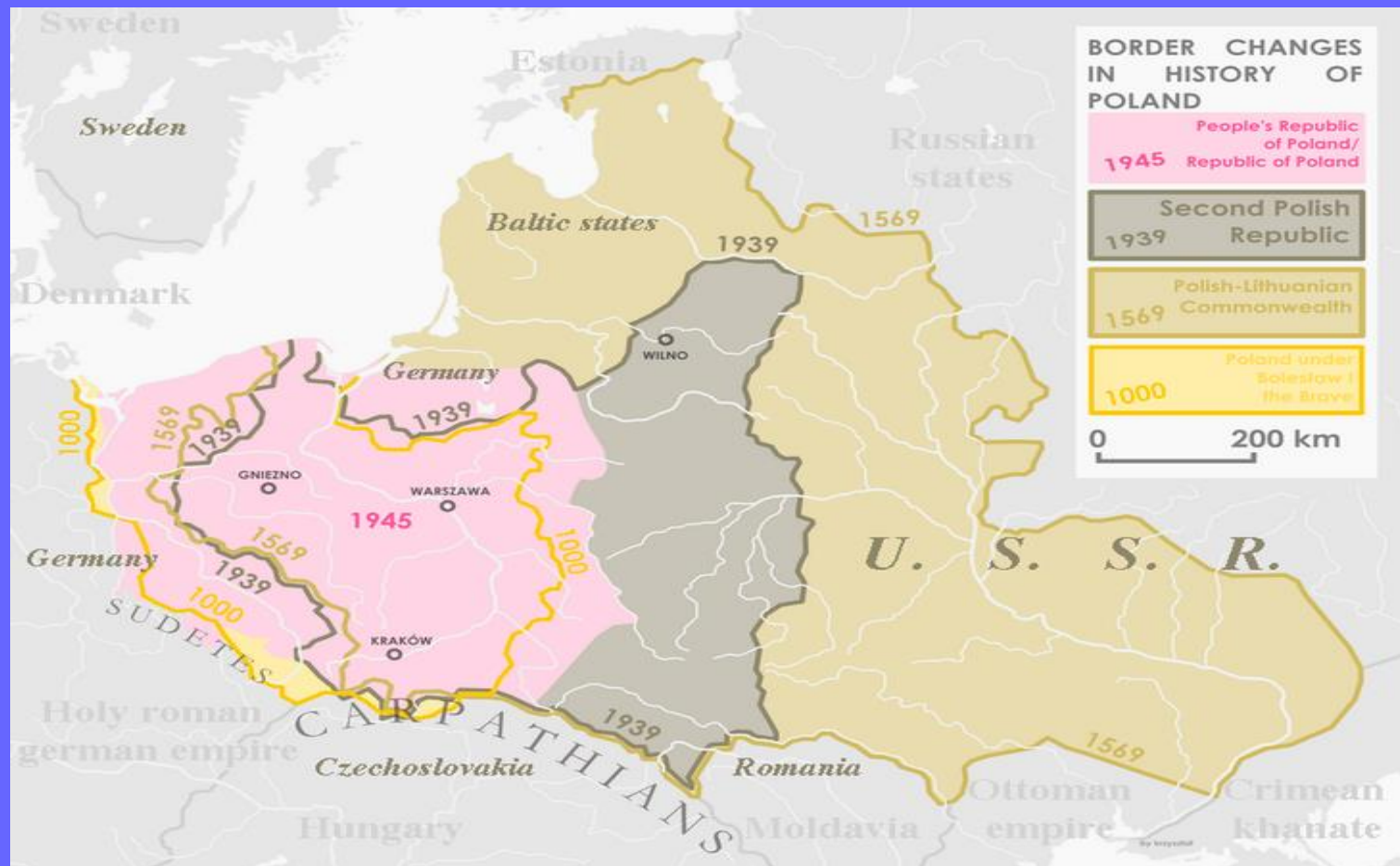




**wellcome
collection**

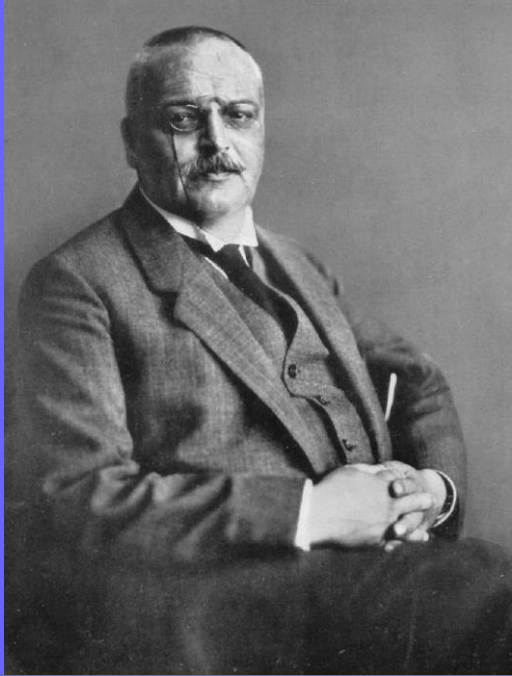
Anatomy: people, books, places

William Schupbach



Attribution: Krzysztoflew

Anatomists



Anatomy : a very old word

Ana | tome Greek noun

Up | cutting English equivalent

Ana | tomia Greek abstract noun

Dis | sectio Latin abstract noun

In | cisio Latin equivalent

What's the most important
thing to know about the history
of anatomy?

ARISTOTLE'S CATEGORIES

Aristotle (Aristoteles), Greek philosopher
384-322 BC

ARISTOTLE'S CATEGORIES

1. SUBSTANCE e.g. man, horse
2. QUANTITY e.g. four foot, five foot
3. QUALIFICATION e.g. white, grammatical
4. RELATIVITY e.g. larger, double, half
5. LOCATION e.g. in the in the market place
6. TIME e.g. yesterday, last year
7. BEING-IN-A-POSITION e.g. is sitting
8. HAVING, OR STATE e.g. has shoes on
9. DOING, OR ACTION e.g. cutting, burning
10. BEING-AFFECTED e.g. being cut, being

GALEN (c. 130-200 AD)



De usu partium

= On the usefulness of the parts of the body

Shorter mediaeval version:

De iuvamentis membrorum

= On the advantages of the members

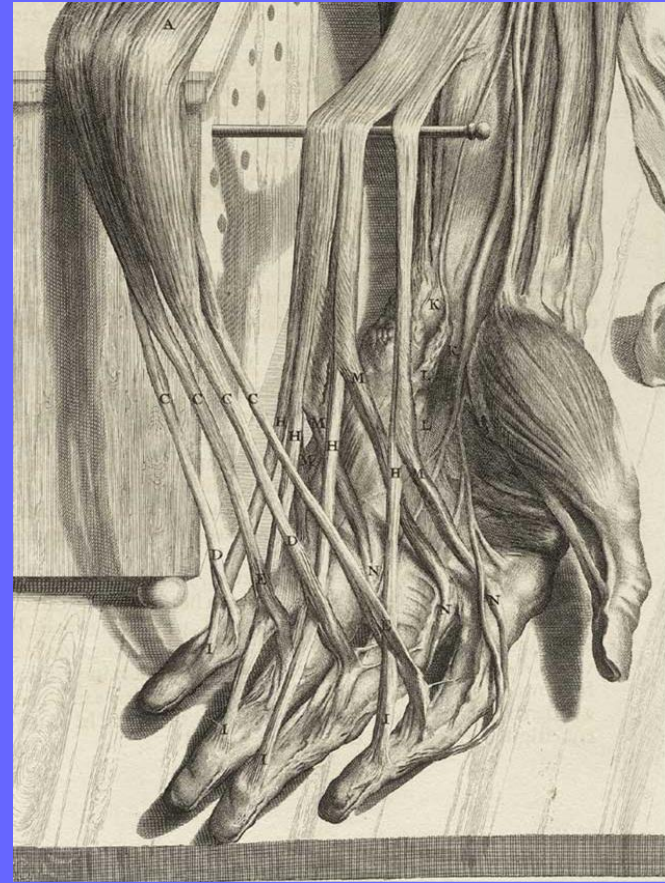
est anterioribus. Si vero & communem eorum regionem examinet
aliquis, eam siccitatem exaruerans quæritur cerebrum ventriculorum, hæc
quoque minor est ventriculus parencephalidis. Chorioniformis autem
meninx, quæ subcingere ventriculos & desuper dicebatur, videntur
ad hanc peruenit concavitatem, quæ est in forniciformi. Quæ enim
sunt post hæc, corpora circa porum, duriora iam consistencia sunt, &
ut egerat cingulo. Similiter autem & quæ circa totum posteriores
ventriculorum. Distinctum enim fuit & antea quoddam parencephalus tota
multum exaruit duritie à cerebri. Itaque non possum non admirari
Præceptoræ & Philotriani sectatorum non dogmatum absurditatem
solum, sed & ignorantiam eorum, quæ in anatomis apparent. Super-
augmentum enim aliquod & germen dorsalis medullæ existimant
esse cerebrum, & propter hoc longis flexibus & spiris ipsum compo-
ni & consistere aiunt, rem mirandam, quum posterius cerebrum, quod
tamen dorsali constituitur, minime hac tali, hoc est flexuosa compo-
sitione participet, cunctissimam vero ipsam compositionem & plu-
rimam ostendat antè. Maius adhuc horum virorum est erratum,
qui non cognoscunt solis partibus cerebri, quæ sunt ad basim, conti-
nuam esse dorsalem, quæ sola ipsius particule non insoluita sunt.
Dura enim eorum sunt, à se ipsi habent securâ sedis firmitudinem,
nequaquam subili meninge, quæ illas & tegit & firmet, egerens. Ita
igitur hos viros si diis placet, optimos, quidam criminati veritatem,
dogmata, insitio à se posita volunt sequi, deformari & infamari neces-
sarium est. Sed etiam quicumque à cranio figurari & formam accipere
cerebrum volunt, non videntur scire à dura meninge cerebrum distare,
& ab eadem cranion contingi, cui tamen connata non est. Sed neque
etiam intelligere videntur oportere illam prius figurari, quod
ipsum cranion est tale. Quoniam autem hæc sermonis venimus,
non est prætermittenda intacta ac non perfructata parencephalidis
forma. Non enim ex meandris flexuosis & magnis meninge subili
insolutis sicut cerebrum, sed ex multis quidem & his valde parvis cor-
poribus, non tamen simili illis modo constat. Postquam enim per to-
tum cerebri corpus, & non in ventriculis eius solis, sicut in alijs de-
monstrati est, insulæ continentur animalis spiritus existimare opor-
tet etiam in parencephalide, quæ futura erat principium nervi in
corpus vniuersum dispergendis plurimum huius spiritus contineri,
& medias inter hæc & cerebrum regiones illas, quæ partes eius con-
nectunt, vias esse spiritus. Præstitatis autem, quod cerebro consistit
magis varie ipsa in æque, ita enim ipsam nominat bene enunciat,

multipliciter implexam esse hanc ipsam dicens in hominibus ma-
gis quam in alijs animalibus, & cum ea cerebrum. Quod autem est
eis ipsi homini intelligere adeo, non similiter recte mihi videtur cog-
noscere, quum demum etiam alij multipliciter complexum suffi-
cienter cerebrum habentis quos doceret, quantum ad morum rati-
ditatem attinet, omnium simplex, & minime varium habere ce-
rebrum. Melius autem æstimaretur eucrasia & temperiem substantiæ
corporis intelligentis (quodcumque hoc fuerit) prudentia singui,
non varietatem compositionis. Neque enim multitudinem spiritus ani-
malis oportet, ut puto, magis quam qualitati certitudinem & perse-
verantiam intellectus acceptam referre & attribueret. Sed nisi quoque
nisi quis velut freno aliquo sermonem reducat & colubeat, maiora
quam secundum propositum dogmata attingens, effusis & clausis
vitiis incedet, quamvis omnino de substantia animæ non potest ali-
quid non dicere, qui constructione corporis ipsam continentis enar-
rat. Sed sicut de hac dicere illi est impossibile, ita cito ad rem insul-
tam reuerti, ubi non est necessarium tardare, possibile est. Rursus igitur
ad partes, quæ sunt post medium ventriculorum sese referat ora-
tio. Corpus superiacens ad principium porum illum ventriculorum cum
posteriore cerebro copulantis, quod corpus ab anatomis vocatur
conarium, scrutemur, cuius utilitatis gratia factum est. Est autem hoc
corpus substantia quidem adnata & glandula, figura autem adeo per-
quam simile. Unde & ei [nomen] impositum est. Utilitatem au-
tem eius eandem esse putat quidam, & ipsius ad ventrem pylori.
Illum enim adnatum quoque aiunt esse & prohibere de ventre ad
subile intestinum transillum nutrimentum antequam percoquat-
ur. Hunc enim adnatum conarium stantem in principio porum im-
mittentis spiritum ex medio ventriculo in pylorū, hoc est
cerebelli ventriculū, custodem quendam, & velut dispensatorem
esse quantitatis nutritionis. Ego autem quid sentire oporteat de pyloro
vtrius, antea dixi. Hunc vero adnatum cuncto perscrutemur, & replentem
magnæ arteriæ diuisionem, qua omnes fere plexus chorio similes
equi sunt secundum anteriorem ventriculorum, consistunt, in eundem
viam cum alijs adnatis diuisas venas firmatibus, puto esse factum.
Siquidem & positio ipsa per omnia videtur eandem huiusmodi ade-
næ substantiam & altitudinem in illis partibus veras firmantibus
ubi primum ipsa diuiditur. Reliqua vero eorum pars, pro portione
distantiæ vasorum ex diuisione producturam adaugetur, & eandem
procedit, quousque vasa hæc sublimia feruntur. Postquam autem primi

Conarium quod unicum
est habet

Conarium factum fuit
ad diuisionem arteriarum
et venarum

merum ipsorum omnem & positionem, cum summa arte preparauit, iam mihi demonstratum est, ita ut nihil quod ad eos pertineat, super sit. Sed tempus est nos transire ad sermonem de ossibus, a summa manu incipientes, quoniam & permulta sunt ossa in ipsa. Monstratum itaque est ante, quod oportebat esse tria in vnoquoque digito, talem habentia formam, & positionem, & magnitudinem, qualis nunc est. Cur autem natura ex octo quidem ossibus carpum, ex quatuor vero metacarpium fecit, multiformibus figura, & cur per duos quidem ordines carpus compositus est, per vnum autem, metacarpium, adhuc autem de figura ipsorum, & duritie, & positione nondum quidem dictum est ante. Incipienda igitur est iam narratio ab eorum multitudine. Absurdus enim nobis videbitur creator, ex vno quidem osse crus, & brachium, maxima membrorum operatus: ex octo autem carpum, ita paruam particulam, vel ex quatuor metacarpium. In digitis enim, diuersitas figurarum, quae sunt in motibus, demonstrat utilitatem eorum multitudinis, in carpo vero & metacarpio nihil tale apparet. Atqui obistendum enim est contrario sermoni, ut ait Hippocrates. Primum ponitur artificiose, ut nulla omittatur perfectionis excellentia. Principio enim nullum octo carpi osseum, alicui est simile specie, vel magnitudine aequale, tamen in tantam compositionis harmoniam accedunt, ut difficillimus inuentu sit eorum numerus. Nisi enim diligenter abraueris ligamenta, & denudaueris membranas cooperientes, vnum esse tibi omnia videbuntur. Sed hoc, scilicet ex ita multis & multiformibus compositum carpum, intus quidem concuum, quantum manui conuenit fieri, conuexum autem foris, quantum & hoc conducit, quomodo non simul quidem artem mirabilem, simul autem & providentiam indicat? Hoc autem, scilicet conuexitatem habuisse superioribus suis partibus vlnae proximis, talem & ita magnam, qualis



Galenus, De usu partium
corporis humani

Bidloo 1699

GALEN (c. 130-200 AD)

De anatomicis administrandis

= On the handling of anatomical matters

A running commentary on dissection

Not known in the Middle Ages ;

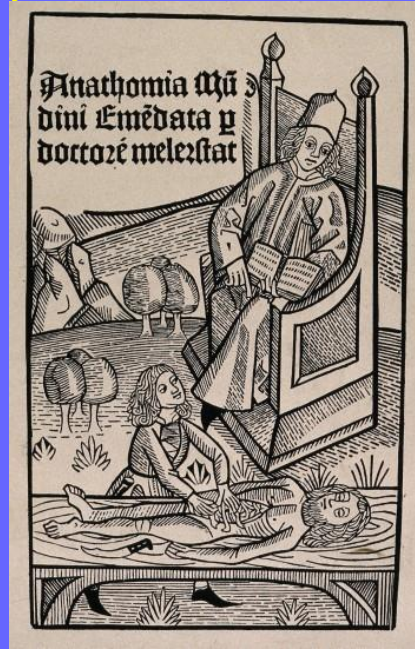
returns with a vengeance in 1531

Mundinus (Mondino de Liuzzi, died 1326; of Bologna)

wrote

Anathomia

“for my pupils in
medicine”



DE ANATOMIA CORDIS.

TEXTVS MVNDINI.

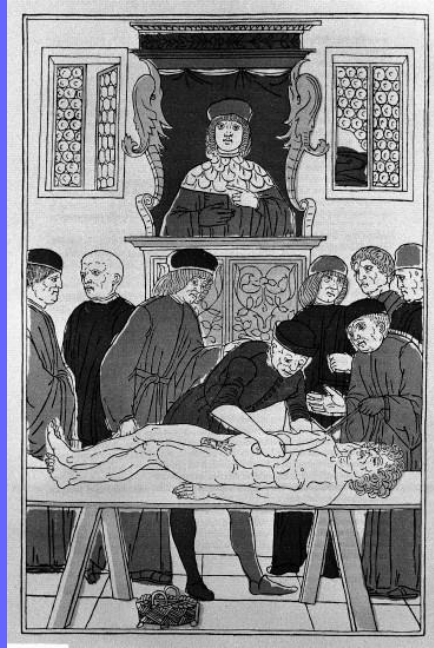
E Leuatis panniculis apparebit tibi pulmo, in cuius medio existit cor uelatum pennulis pulmonis, ut ab ipso, aere attracto refrigeretur, et tēperetur calor et spiritus qui in eo generatur, cuius cordis primo apparet situs et locus, quia est in medio anterioris et posterioris, dextri et sinistri, quantum ad cuspidem eius declinans uersus sinistrum, quātū uero ad radicem eius uersus dextrū, ut possit bene insuflare calorem et spiritum uersus dextrā partem, quæ calidior esse debet sinistra. Est etiam in medio superioris et inferioris amotis extremis, et sic fuit locatum, quia est sicut princeps et prima radix omnium membrorum.

¶ Quæ sit colligantia eius consequētur apparebit sicut apparebit quantitas eius, quia non nimis magnū neq; paruum, maius tamen est in homine quam in aliquo alio animali eiusdē quātitatis, q̃a plus habet de calore in quanto.

in quanto.

¶ Apparebit etiam figura, quia est figuræ pinealis uel
piramidalis, quia huiusmodi figuræ debet esse omne,
quod est excellētis caliditatis, quia propria figura primi
calidi est figura piramidalis, debes etiam uidere nume-
rum partiū eius, et ex hoc tibi apparebit quæ sit sub-
stantia eius, et complexio, et iuuamentum. Numerus
uero partium eius est, quia partium eius quædam sunt

Mundinus (Mondino de Liuzzi, died 1326; of Bologna)



Lecturing on Mundinus, 1495



Commentators on Mundinus

1521: Berengario da Carpi

1470-1550, also of Bologna

Matthaeus Curtius

(Matteo Corti) 1475-1542

A philologist: “What do words mean?”

e.g.

Homocamerous v. Anhomocamerous

Commentators on Mundinus

Matthaeus Curtius

(Matteo Corti) **1475-1542**

A philologist: “What do words mean?”

Homoeomerous v. Anhomoeomerous

Matthaeus Curtius
(Matteo Corti) 1475-1542

Question: what is the "vermis"?

vermis

Chapter 3

[Muscles moving the Thorax]

When you have cut away this muscle also from the clavicle, ⁴⁹¹ take care of one lying close to the first rib [*sternocostalis*]. For when the thorax is presently laid bare, as you pull up [the clavicle] toward its head, you will also draw up the first rib. You should separate the clavicle not only from the sternum, as I have just explained, but also from the acromion, by severing the ligaments attaching it to the spine of the scapula.

You need not seek a third bone in an ape besides the two processes (PERATA = AKRŌMION with KORAKOEIDĒS) already mentioned. For Hippocrates does not say that [a third bone] exists in any other animal but man,¹⁰⁸ and he adds: 'In this respect, man's nature is different from the other animals.' If you cut away the scapula here, you may bend it back again towards the sternum, cutting away the membranes binding it to the neighbouring parts.

Now you will see the muscle of the first rib [*subclavius*]. Cut it away, as I have said, from the clavicle, and either remove the bone completely or bend it back towards the breast and let it lie. If you do this, cut the vessels and nerves at the armpit ⁴⁹² along with the fascia.

بسم الله الرحمن الرحيم وسبح
كتاب جالينوس في عمل التشريح المفاصل الاولى من كتاب
جالينوس في عمل التشريح ترجم حنين بن اسحق قال
قد كنت في المرة الاولى من صعودي الى مدينة روم وضعت
كتابا في عمل التشريح وذلك في ابدا اسلك اوطونوس
هذا الذي هو ملكنا في ايامنا هذه وانا واضع في ذلك الان
ايضا كتابا آخر لسبيين احدهما هو الاول ان تيبوس المظفر
الذي كان والي على الروم عندما اراد ان يخرج من مدينة
رومية الى مدينة التي يقال لها بطولوماس سألني ان اذو
كتابا في عمل التشريح فوضعت له الكتاب الذي كنت كتبته
اولا وذلك انه كان رجلا يحب عمل التشريح حبا شديدا لم يتفد
في محبة اياه احدا فظف اعطيت ثواسوس هذا عند خروجه
الى مدينة كتابا في عمل التشريح فيه مفاصل وكذا اخره
انه كان قد نظر قدامي من امور التشريح الى اشياء كثيرة جدا
في وقت يسير وكان لا يامن ان ينطقت مني في وقت ما ويني
ما به منها فاحتاج الى تذكره ليكون معه وكان ثواسوس هذا
نوفى وليس يحضر في انا نسختيك المفاصلين لادها الاضد

ثواسوس

كثرة

GALEN

On Anatomical Procedures

TRANSLATION WITH INTRODUCTION AND NOTES BY

CHARLES SINGER



GALEN AND THE PHILOLOGISTS



Matthaeus Curtius (Matteo Corti) 1475-1542

Classic row about words and things with
Andreas Vesalius, 1540

Corti: "We must distinguish between the glottis
and the epiglottis. "

Vesalius: "What does it matter what they are
called, they might as well be called Matthew,
Mark, Luke, or John for all the difference it

Andreas Vesalius

1514-1564, from Brussels

In Padua, he wrote

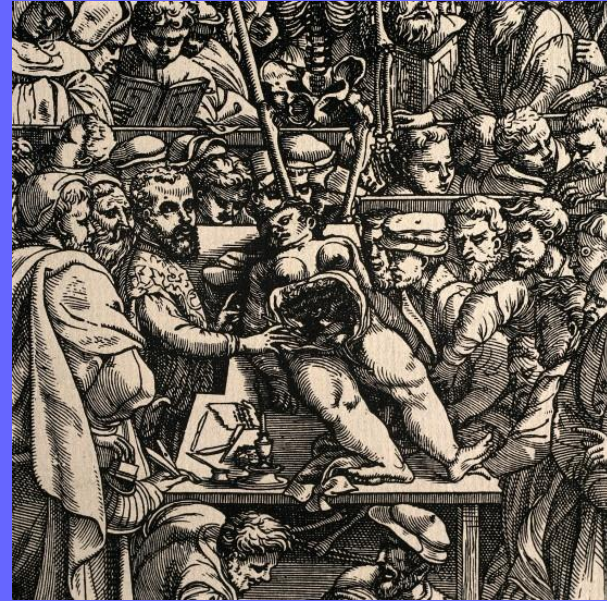
De humani corporis fabrica

(“On the fabric of the human body”)

Book 1542, second edition 1555

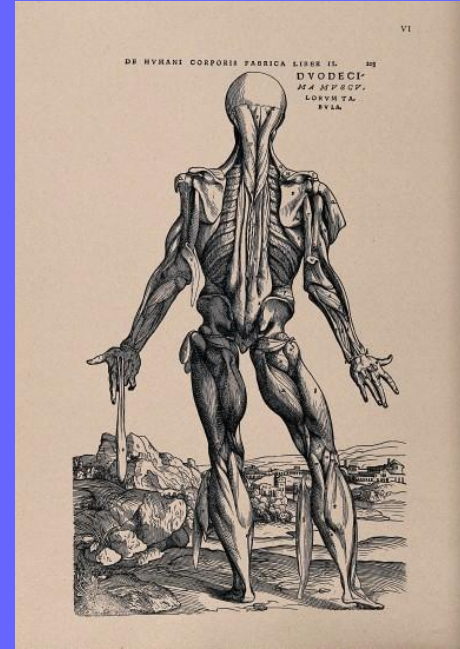
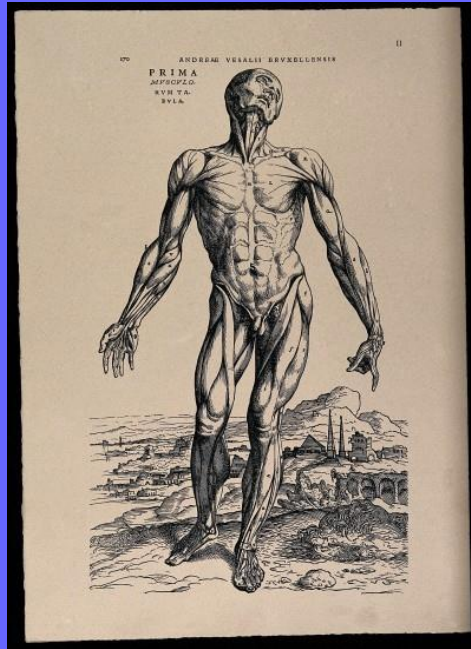
Andreas Vesalius

1514-1564, from Brussels



Andreas Vesalius

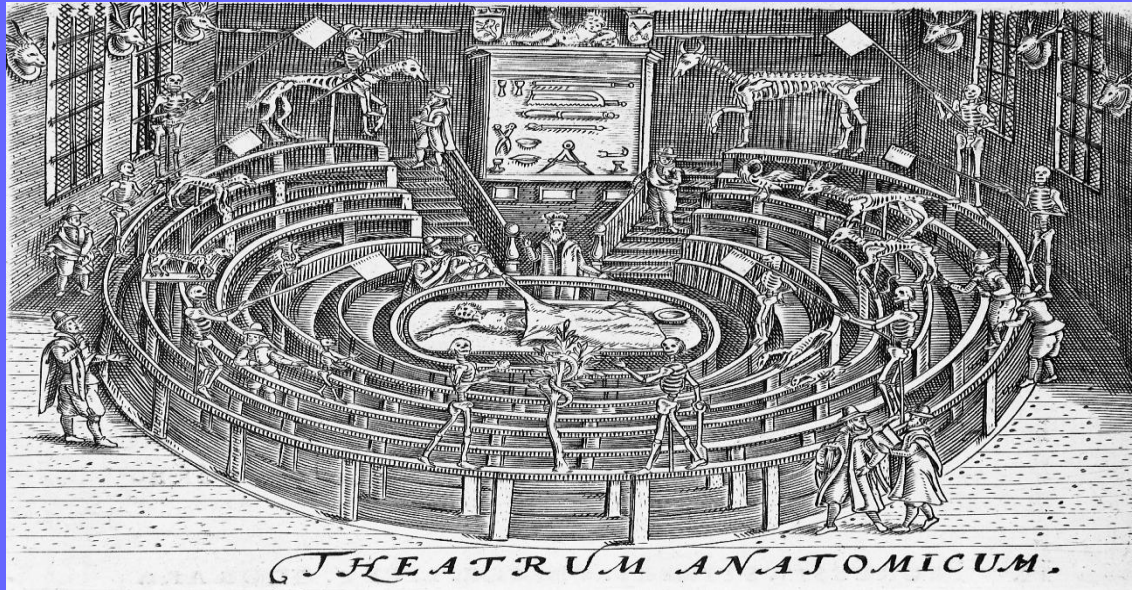
1514-1564, from Brussels



Vesalius and the philologists



Leiden University



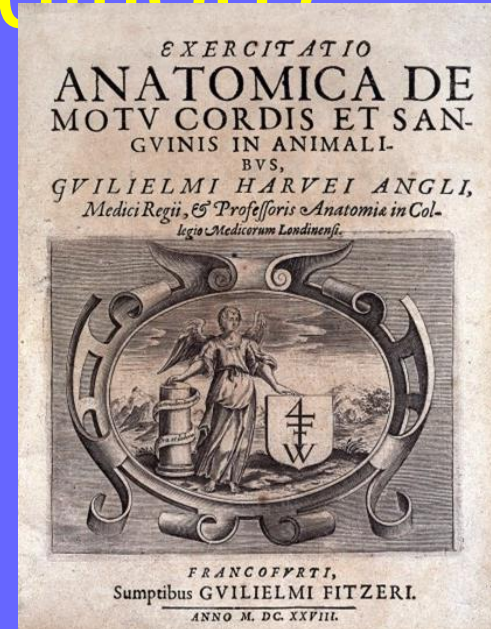
- Founded 1575
- Pieter Paaw was the first professor of anatomy and botany (1576-1617) and built the anatomy theatre

William Harvey (1578-1657): the culmination of the Aristotelian tradition?

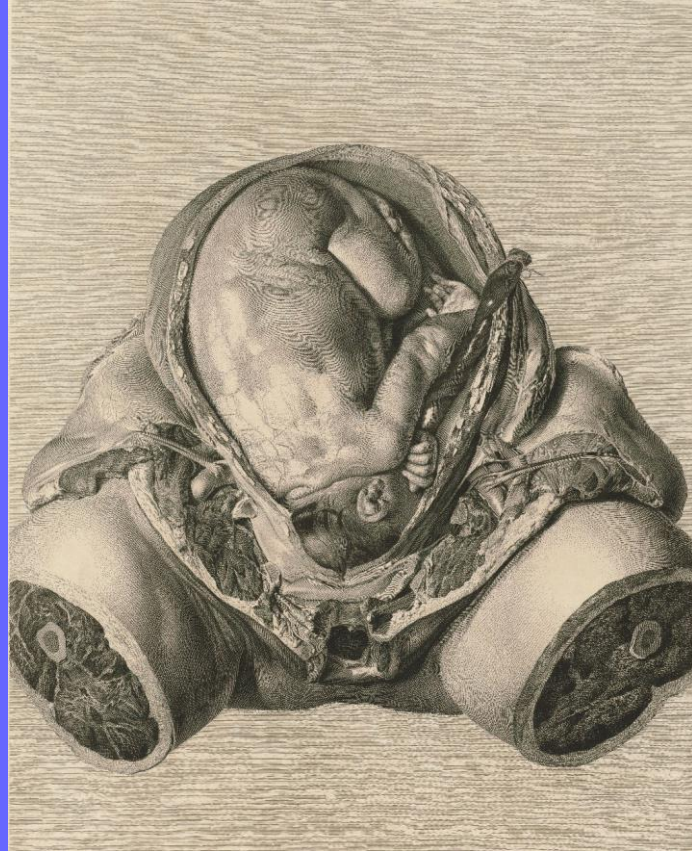
Author of

Exercitatio anatomica de
motu cordis et sanguinis
in animalibus 1628

=Anatomical dissertation
on the movement of the
heart and blood in



Aristotelian category: TIME



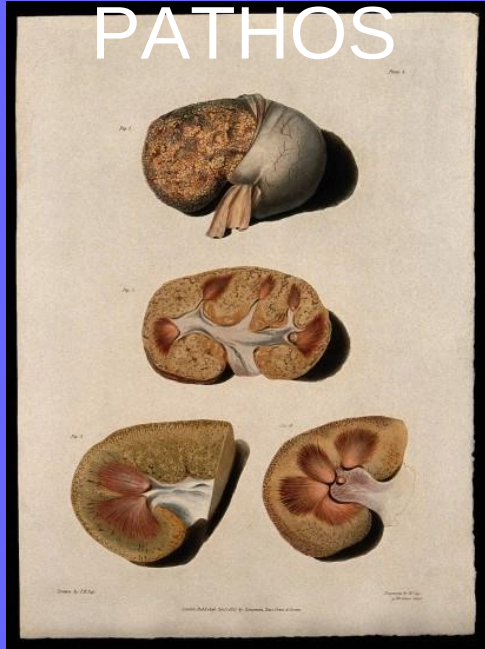
William Hunter (1718-1783)

*Anatomia uteri
humani gravidi*

Birmingham 1774

Applying anatomy

Aristotelian
category: Being
affected or
PATHOS



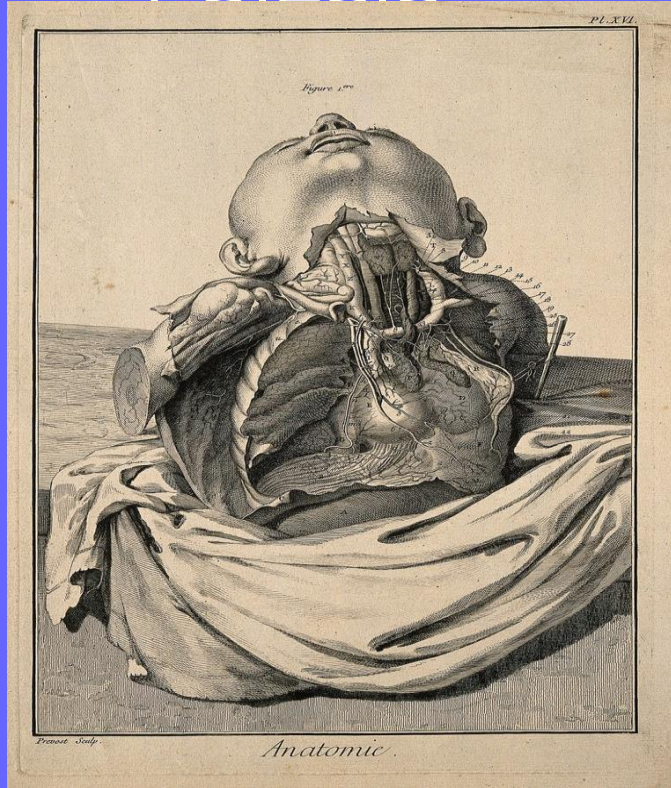
Richard Bright
(1789-1858)

*Reports of
medical cases ...
by a reference to
morbid anatomy*

London

1827, 1821

Aristotelian
category: Action or
POIESIS



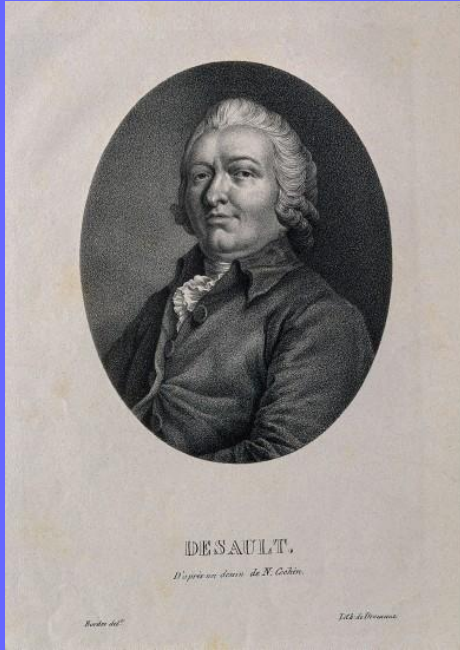
Albrecht von
Haller

(1708–1777)

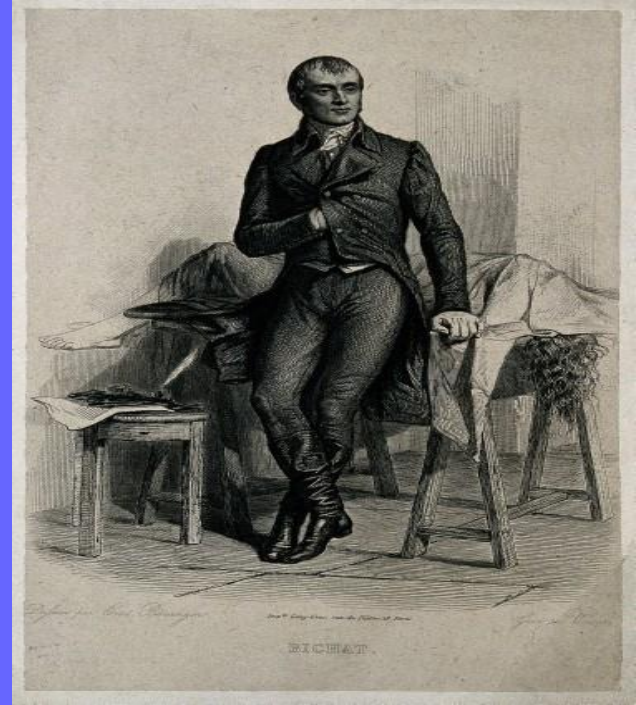
Icones
anatomicae

Göttingen

Desault and Bichat



Pierre-Joseph Desault
1738-1795



Xavier Bichat
1771-1802.

Bichat's "tissus"

21 types of tissue

Cellular	Bone
Nervous	Marrow
Arterial	Cartilage
Venous	Fibrous
Exhalant	Muscular
Absorbent	etc. Mucous

- Is there an “Old anatomy” (up to 1800) and a “New anatomy” (post-1800)?
- “New anatomy”: physics and chemistry; experimental physiology; comparative anatomy; clinical anatomy and pathology; death of “the soul”
- Or is there just a single great and broad
“Anatomical Tradition”?

Questions?

William Schupbach

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