Naming the Body: A Translation with Commentary and Interpretive Essays of Three Anatomical Works Attributed to Rufus of Ephesus

by

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Introduction

It is an obvious problem in ancient medicine that the surviving record from imperial physicians is patchy. We have a large corpus by Galen; some material from Soranus; and bits and pieces that have been transmitted in the later compilations. In this light, Rufus of Ephesus (fl. late 1st century CE) provides another, often overlooked, source. Though he has the misfortune of being cast in the shadows of both Galen and Soranus, the other Ephesian doctor, Rufus was a prolific teacher, anatomist, pharmacologist, and physician in his own right. He had Galen’s respect, and his popularity extended well into the Middle Ages. ¹ Rufus’ own medical contributions are many and wide-ranging: He is credited with discovering optic nerve fibers on the ventral surface of the brain as well as previously unknown blood vessels in the uterus. He is also particularly detailed in describing the muscles of the leg, including the gastrocnemius, soleus, and psoas. His writings span general anatomy; anatomical nomenclature; regimen; conditions of the blood and pulse; diseases of the bladder and kidney; satyriasis and gonorrhea; joints; acute and chronic diseases; fevers; gynecology; ulcers and tumors; urine; pharmacology; and melancholy. This project will focus specifically on Rufus’ anatomical works, providing translations and commentaries of the texts as well as interpretive essays on the material.

¹ For Galen’s comments on Rufus, see Galen V.105 and XVI.636.
Rufus’ longest anatomical work, and the one on which I shall primarily concentrate is his *Names of the Parts of the Body* (*Onom.*). However, for the sake of completeness, I have also included translations of the other anatomical treatises attributed to him, *On the Anatomy of the Parts of the Body* (*Anat.*) and *On the Names of the Bones of Man* (*Ost.*). The latter two are largely derivative of the *Onom*, and it is unclear whether Rufus himself authored them. Daremberg includes both these in his addition, though he lists them simply as “attributed to Rufus.” Ruelle, in his introduction to the Daremberg edition, says the *Anat.*, at the very least, may have undergone some reworking in the Byzantine period.⁴

Nonetheless, there are reasons for viewing Rufus’ works on nomenclature as interconnected. The opening of *Anat.* refers back to another work, one about the external parts. And similarly, *Ost.* refers to a work about the internal parts, though of course, these cross-references could easily have been added to make the works seem genuine. And beyond that, it is patently not the cases that *Ost.* deals solely with external parts nor that *Anat.* deals exclusively with internal ones. But thematically, these works are, generally, in agreement. Both discuss in detail the ocular membranes (*Onom.* 154.1 and *Anat.* 176.9) and the spermatic vessels (*Onom.* 1558.15 and *Anat.* 176.9). The differences between the blood vessels in these works are few and minor.

Despite being topically anatomical, these texts reveal much about Rufus’ cultural biases; social limitations; and views about humanness, writ large. And these matters are the subject of the essays which follow my textual translations. Rufus’ overarching project in his anatomical works is actually two-fold: he aims to (1) pinpoint the parts of the human body and (2) provide names for these parts. Of course, Rufus cannot discuss the

⁴ Ruelle (1879), xxviii.
parts of the human body without first establishing what constitutes a human. And in the first essay, I explore his definition of humanness. The short explanation is that for Rufus, what is human is what is like him: male, Greek, free-born, healthy, mature but not old, and distinct from other animal species. Nonetheless, limitations of Rufus’ setting, particularly prohibitions against human dissection prevent him from analyzing models that fit his ideal. To showcase the external parts of the body, Rufus must use a slave. And for the internal parts, he must use a monkey cadaver. Yet I argue that these limitations, however frustrating for Rufus, highlight his distinctions between the ideal and the imperfect human.

The second essay continues this discussion of Rufus’ cultural, national, and speciesist prejudices, but investigates them on the linguistic level. That is to say, the words that Rufus selects to label the body ought to be Attic Greek. Non-Greek words, on the other hand, are to be avoided. In this section, I also discuss Rufus’ extensive use of metaphors. When faced with a body part that is as-yet unnamed, Rufus tends to re-use the name of another part. The human body -- particularly its most “human” parts -- gets multiply mapped onto itself, underscoring its fundamentality.

The final essay looks at the performative aspects of Rufus’ presentation. Rufus’ *Onom.* is delivered before an audience, in a lecture format. He uses props and points to his models using deictic forms. In many ways, then, Rufus prefigures Galen and should count as an early participant in the Second Sophistic movement. That said, I argue that Rufus is reserved in his showmanship. He is not aggressively polemical, and he never develops a strong authorial presence. Moreover, Rufus separates himself from the iatrosophists in lacking an obvious Roman connection. There is no evidence that he ever
travelled to Rome or sought imperial patronage. The sophistic elements that come to the fore in his texts seem to be less a pointed effort and more a natural result of the format of his presentation. Nonetheless, his performance still offers information about methods of presenting medical knowledge.

Scholarship

In terms of the scholarship on Rufus, in 1879, Ruelle and Daremberg edited Rufus’ extant Greek works and well as the Latin version of his Joints and Diseases. And in 1930, Ilberg wrote a monograph on Rufus, focusing on his fragments in Oribasius. There is little in this monograph on Rufus’ fragments in Aetius and none on his fragments in Paul. On the Arabic side, in the 1970s, Ullmann and Sezgin catalogued a large number of Arabic medical texts. And both Sezgin’s Geschichte des Arabischen Schriftums and Ullmann’s Die Medizin im Islam compare Rufus’ Greek and Arabic fragments. And beyond that, we also have Geoffrey Lloyd’s more general text Science, Folklore, and Ideology, which offers an overview of Rufus’ works. Rufus’ anatomical texts say little about the physician’s interactions with his patients. So for this, we need to turn to Rufus’ Medical Questions, edited by Hans Gärtner in the C.M.G. text. In this work Rufus details hindrances to communication with patients: delirium, weakness, old age, youth, and language barriers. There is nothing in any of Rufus’ works on the use of pulse diagnosis.
Establishing Rufus’ dates is an inexact process. According to John Tzetzes, Rufus practiced during the time of Cleopatra, acting as her personal physician. Galen locates him, generally, among his modern predecessors. And in the Suda, Rufus is placed under Trajan (98-117). Leclerc thinks he belongs to the start of the 2nd century CE, as do Gurlt, Neuburger, and Diepgen. However, Haeser, Gossen, and Ullmann suggest he is not before the second half of the 1st century. William Greenhill, in his Dictionary of Greek and Roman Biography and Mythology, notes that Rufus quotes Zeuxis and Dioscorides and was, himself, quoted by Galen. In any event, Rufus wrote somewhere between the end of the 1st century CE or at the start of the 2nd. Rufus himself offers little by way of datable references. The only personal name is Potamius, the dedicatee of On Vomiting, but we know nothing about this individual.

As for Rufus’ name, Galen mentions an individual who might be different from Rufus of Ephesus. In volume XIII p. 1010, he speaks of a Menius Rufus. But in XIII, p.92 and XIV p. 119, we see simply “Rufus.” Likewise, in the Bibliotheca Graeca, Fabricius says that Menius Rufus is a different person from “Rufus.” Rufus himself never mentions his birth place or home town, though ancient sources place him in Ephesus. Rufus’ works betray a strong interest in Egypt, especially its geography, ethnology, anatomical and pathological terms. He names a pediatric disease as an “Egyptian ulcer, for instance”

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3 Chil. VI. Hist.44.300.
4 Galen. V.105 and XVII B.956.
6 Haeser (1878), 336; Gossen (PW.A1, col.1208); Ullmann (1921), 7.
7 Greenhill (1880), 668. See also Wellmann (1921), 4, who notes that Rufus quotes Dioscorides and is quoted by Archigenes.
And he notes that doctors in Egypt speak Greek badly, so he has at least some familiarity with Egyptian practices.

Von Staden gives two testimonia from Vindicianus saying that Rufus practiced in Alexandria; however, Von Staden suggests that Rufus only visited Egypt and never actually resides there.¹⁰ In terms of his patients, Rufus mentions individuals from Ephesus, Miletus, and Magnesia, though, of course, this should not imply that Rufus necessarily spent time in any of these places. Athenians held a high place in Rufus’ list of trustworthy physicians; and he cites them three times in his anatomical works.

Sources

In terms of the specific development of Greek anatomical terminology, relevant anatomical texts besides Rufus’ include those of the Hippocratic Corpus, Aristotle, and fragmentary remains of Herophilus and Erasistratus. In many ways, Rufus represents a synthesis of Hippocratic and Hellenistic traditions. So it will be useful to run through some of these early sources, as there was a strong belief among Greek and Roman doctors that the past history of medicine was of direct relevance.

The study of the medical thought of predecessors relied on a range of secondary literature – catalogues of names, doctrines, biographies, lexica, and commentaries; there were many genres of medico-historiographical writing. In the first place, are the Lives; but of these, we have quite little. In the Methodist school, biographies of Hippocrates survive in Byzantine compilations, including the Suda and Chiliades of John Tzetzes. And we also have letters supposedly composed by Hippocrates, Herophilus, and

¹⁰ Von Staden (1989), 189.
Specific literature on the various schools (Dogmatists, Empiricists, Herophileans, Erasistrateans, etc.) was a combination of biography and doxography. Early Greek medicine was believed to have divided into Coan, Cnidian, and Sicilian Schools. As for technai, we have, for example, Celsus’ *De Medicina*, which is only part of a work dealing with many of the sciences. *Quaestiones* and *Definitiones* provide synopses of the main topics of investigation. Here we have the Pseudo-Galenic *Definitiones Medicae*, the Pseudo-Soranic *Quaestiones Medicales*, and the *Medicinales Responsiones* of Caelius Aurelianus. Yet another category consists of medical literary history, lexicography, etymology, and commentaries. These started in the early Hellenistic period, especially among the Empiricists and Herophileans. Only fragments are extant, though we do have Erotian’s *Dictionary of Hippocratic Terms*. Lastly, we have encyclopedic writings. Key authors for this category include Pliny, Celsus, Oribasius, Aetius of Amida, and Paul of Aegina. For Celsus and Pliny, medicine was just one among the many sciences, and it constituted secondary literature. The earliest surviving attempt at a comprehensive history of medicine was Aulus Cornelius Celsus’ prooemium to his *De Medicina*. He explains that while post-Hippocratic physicians did make important advances, the Hippocratics were most worth remembering. The proem 12-75 of this work says that the youngest branch of medicine, regimen (treating diseases) must be dealt with first.

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11 WD Smith (1990), 1.
In terms of the specific medical writers cited by Rufus, Hippocrates and Herophilus are the most frequently noted. The complete list of authors and sections of the *Onom.* where Rufus cites them is as follows:

- Διονύσιος: 205
- Ἐπίχαρμος: 79
- Εὐδήμος: 143
- Εὐρυφῶν: 112
- Ζήνων: 228
- Ἡρόφυλος: 123, 150, 153, 155, 203
- Ἰπποκράτης: 33, 77, 88, 120, 155, 194, 195, 202
- Κλεῖταρχος: 192
- Πραξαγόρας: 199, 226
- Φιλιστίων: 201

Biographical information on these authors will be provided in the commentary which follows.

**Anatomical Texts before Rufus**

A quick glance at some early anatomical texts reveals that there was a rich tradition prior to Rufus. First we have the fragmentary *De Corporum Resectione,* which provides a cursory account of the trachea, lung, heart, liver, superior vena cava, kidneys, ureters, bladder, esophagus, diaphragm, stomach, and spleen.\(^{13}\) Of particular interest to Rufus’ texts, in this work, the spleen is described as having the same shape as the sole of

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\(^{13}\) Littre, VIII, 538-41.
the foot. Also in this text, the human heart is said to be rounder than that of other animals, something which Rufus, too, reports. A longer anatomical account is *De Corde*, which was written perhaps as late as the time of Erasistratus. In this work, the author describes the valves of the heart, though he wrongly suggests that swallowed fluid travels through the lungs. This idea finds support in Plato, but is refuted by Aristotle. And lastly, in *De Articulis*, we find the first discussion of individual muscles. Moreover, these muscles are described in a manner that suggests they had previously been named: “muscles called temporal” and “muscles called masseters.” Rufus adopts both of these terms.

Other major influences on Rufus were the Peripatetic authors, particularly Aristotle. As a dissector of animals, Aristotle could provide detailed comparative anatomy:

ʻΑγνωστα γάρ ἐστι μάλιστα τὰ τῶν ἄνθρωπων, ὡστε δεῖ πρὸς τὰ τῶν ἄλλων μόρια ζώων ἀνάγοντας σκοπεῖν, οἷς ἔχει παραπλησίαν τὴν φύσιν

Best known are man’s external parts, but it is just the opposite as far as the internal parts are concerned. For least known of all things is the structure of men’s bodies, so that it is necessary to consider the individual parts, comparing them to the parts of other animals which they resemble by nature. (HA. 494b22-4)

Rufus certainly drew from Aristotle’s discussion of the blood vessels. Aristotle, however, had a self-professed difficulty in tracing the course of blood vessels; in living creatures, these vessels are hidden within the body, and in dead creatures, the vessels would have collapsed. He did, however, note that strangulation, rather than throat-cutting, would better preserve the integrity of the vessels.

For Aristotle, the word “veins” implied our modern notion of both arteries and veins, though the aorta did receive its own name. He claimed that all vessels emerge from the

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14 Plato, Tim. 70.
16 Littre, IV, 140, 141.
heart, and that bones, like blood vessels, comprise a continuous system. As mentioned
above, Aristotle was a careful observer of animals, and much of his discussion of human
viscera is comparative in nature. He describes the four stomachs of ruminants,\textsuperscript{17} the
proventriculus of birds,\textsuperscript{18} and animals lacking gall bladders.\textsuperscript{19} I shall cover Aristotle’s
influence on Rufus, particularly his \textit{Historia Animalium}, in greater depth in my
discussion of definitions of humanness.

Turning to another influential Peripatetic anatomist, we have Diocles of Carystos, a
younger contemporary of Aristotle, belonging to the Dogmatic school. He was also
known as the “second Hippocrates,” and Wellmann (1901) has collected all of his
fragments. Diocles wrote the first manual of dissection, based primarily on animals, but
also he referenced human abortuses. According to Galen, he was the first to use the term
“horns” to describe the uterus.\textsuperscript{20} And Rufus adopts this term. Like many of his
predecessors, he did not distinguish between arteries and veins. This distinction was
made by Praxagoras of Cos, a pupil of Diocles and later head of the Dogmatic school.\textsuperscript{21}
Nonetheless, Praxagoras thought that only veins contain blood; arteries were exclusively
filled with pneuma. He also argued that as an artery divides, its lumen becomes smaller
and disappears entirely; in this way, arteries become nerves.\textsuperscript{22}

On the neurological front, he argued that the brain was an outgrowth of the spinal cord.\textsuperscript{23}

The Hippocratic tradition is one of the most fundamental to an understanding of
Rufus, and what particularly links Rufus’ works to the Hippocratic corpus is his

\textsuperscript{17} Aristotle, \textit{HA.} II. 17. 507a34.
\textsuperscript{19} Aristotle. \textit{HA.}II.15, 506a20-b24.
\textsuperscript{20} Galen, \textit{De Anat/Admin.} II.1).
\textsuperscript{21} For more on Praxagoras and the Dogmatic school, see Portal (1770), 44-5 and Hirsch (1886), IV, 623.
\textsuperscript{22} Galen, \textit{De Plac. Hipp. Et Plato,} I.6).
\textsuperscript{23} Ibid. 8-12.
invocation of the bodily humors. In De Vetere Medicine 22.1, the bodily humors are described in terms of taste: bitter, salty, astringent and acidic. The fullest Hippocratic treatments of these elements are in Humors I and the Nature of Man. In the former, the author explains that the humors appear more concentrated during certain season. In the fall, for instance, an individual is more likely to experience jaundice. Indeed, the author even suggests that it might be possible to forecast the weather from the prevalence of certain diseases. And in Nature of Man IV, the author explains that the body of man has blood, phlegm, yellow bile, and black bile. Viewed in combination, these constitute the nature of his body.

The Hippocratic term “chumoi” implies “juices,” especially those of plants. Together with the flavors, this explains, at least to some extent, the emphasis on eating in medical texts. Various tastes are ascribed to Democritus by Theophrastus: bitter (pikros), salty (halmuros), astringent (struphuos), and acidic (oxus). Plato’s Theaetetus likewise describes the humors as tastes. Rufus likewise defines blood as a chumos.

Phlegm is white, thick, and salty. Bile is of four types: yellow, green/yellow, green, and black. He calls them “perissoma” along with saliva, mucus, sweat, urine, gas, ear wax, menses, milk, and sperm. Pseudo-Aristotle does not include saliva and ear wax but does include blood and feces.

Besides taste, Epidemics I.2.696 uses colors to describe the humors, a phenomenon we find, too, in Rufus. It should be noted that Aristotle’s discussion of the humors diverges somewhat. In his corpus, the principle word for humor is hugrun
(“fluid”), and it has little in common with the Hippocratic texts. In the History of Animals, for example, these fluids are specified as blood, ichor, lard, marrow, semen, gall, milk, and urine. But phlegm and bile were not included.

As mentioned above, it is a commonplace in Hippocratic texts that the humors are produced from food. This connection holds true in Rufus’ works as well. Cheese induces phlegm in adults, and milk produces it in babies, for instance. One should vomit to rid oneself of phlegm if sour milk has been imbibed, and thyme can be used to get rid of excess bile. Humoral imbalances result from ingesting (too much) improper food, but they can also be systemic and endemic. If humors are present when they should not, the attending physician should suspect epilepsy, indigestion, or other ailments.

In terms of disease, Rufus’ treatment of imbalanced humors is also based heavily on the Hippocratic tradition. In Affectations I, the author argues that all diseases are caused by a build-up of bile or phlegm, specifically when these elements get too dry, wet, hot, or cold. And in Diseases I.2, we find the same point. The presence of blood, black bile, yellow bile, and phlegm vary according to the seasons. Blood predominates in the spring; black bile, in the fall; yellow bile, in the summer; and phlegm, in the winter. For this reason, not only should prognosis involve examination of the face, eyes, stool, urine, and vomit, but it should also involve inquiry into the patient’s diet and environment.

However, Rufus stresses that humoral treatment must depend on an individual’s unique biological make-up. For example, he notes that because some patients have stomachs which are inclined more upwards, physicians should avoid giving them

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31 Ibid.4.38.
purgatives.\textsuperscript{32} And similarly, if the orifice of the colon is small, physicians should be careful in giving purgatives.\textsuperscript{33} And in Aetius of Amida XVI.50, which is attributed to Rufus, suggests that amenorrhea when caused by an imperforated membrane at the neck of the uterus responds worse to purgatives than amenorrhea caused by environmental factors. Put simply, there are external and internal causes of disease: When a large number of people share the same disease at the same time, there is, most likely, an external cause. But if an individual has unique symptoms, his illness results from his individual regimen – namely, his diet and exercise.

There are, of course, humoral alternatives. Athenaeus, the reputed founder of Pneumatism, favored a mix of Stoicism and Hippocratism. Followers included Claudius Agathinus and Archigenes of Apamea. In particular, the pneumatists rejected the atomism of Asclepiades in favor of hot, cold, wet, and dry elements held together by pneuma. Here there are parallels between the macrocosm of the universe and the microcosm of the body. Just as the body cannot survive without pneuma, such is the case with the universe writ large.

The Hippocratic and earlier traditions are also important for what they say about pneuma and respiration, and these accounts need to be examined before turning to Rufus. According to Athenaeus and the Stoic school, disease derives from a \textit{duscrasis}, which harms the pneuma. And even before the pneumatics, pneuma was discussed as a cause of disease in the Hippocratic \textit{Breaths}. The author defines air outside the body as \textit{aer} and within the body as \textit{phusa} (3). So before turning to Rufus, it is worth taking a closer look at the Hippocratic and earlier traditions.

\textsuperscript{32} Ibid.7.26.
\textsuperscript{33} Ibid.7.28.
In his “Air, Pneuma, and Thivel describes three stages in ancient thinking about respiration: the archaic, the Empodoclean, and the Aristotelian (including Diogenes of Apollonia, Philistion, Anaxagoras, Democritus, and Diocles), all three of which are present within the Hippocratic corpus. Thivel explains that in the first period, air is considered a material substance, and if it seeps into the body, disease will result. In the second period, air and blood become a source of life. And in the third period, the lungs become the organ of respiration; here, air is not needed for breath; rather, it functions as a coolant for the heat of the heart.

Thivel explains that in the archaic period, an object has to be visible to be considered real. “Avapneo” in Homer did not involve the lungs, but was instead a pause in motion.34 The materiality of air is described in several treatises within the Hippocratic corpus and in “Cnidian” works. On Diseases II.33 explains that a patient with a nasal polyp expels air, though this does not engage the lungs. Similarly, the condition of orthopnoea necessitates a seated position for breathing, but, again, does not involve the lungs. The lungs are spongy in texture and absorb water, not air.35 For if they were to take in liquid, they could not, at the same time, take in air. Indeed, the etymology of plemon (the ancient term for “lung”) is related to the Indo-European root *plew-, “to float.”36 On Diseases II.59 describes a condition whereby if we have too much air in the body, the lung collapses along the sides, and the doctor must drive the excess air out of the lungs with a bladder. Likewise, On Ancient Medicine.22 suggests that if air enters the body, pockets can form in the lungs, spleen, and breast. In Thivel’s second period, during the

34 See, for example, Iliad XI.382, XI.800, XV.235, and XVI.301.
35 See Plutarch’s Symp.7.1: we “moisten our lungs with wine.”
36 Thivel,239.
5th century BCE, two discoveries were notable: (1) that air was invisible and (2) that the heart had a central place in the network of blood vessels.

Empedocles notes that the surface of the skin contains millions of pores which are in contact with the blood vessels. In this way, external air could enter the body through these holes and would mix with the blood and humors. Life is a mixture of air and blood. However, the lungs were not involved, and breathing took place within the whole body. The verbs anapneo and ekpneo were commonplace, but involved the body, writ large. Lastly, Thivel’s third period, in the middle of the 4th century, proposed that the lungs were like bellows and played a key role in respiration. Aristotle’s On Respiration is an important influence here. On Nutriment 29 suggests that the lungs attract a nutriment (air) which is opposed to the food in the body. And in section 48, the author notes that there exists “throbbing of the vessels and breathing of the lung, for air is also a nutriment.” On the Nature of Bones 13 explains that the lung “receives a little blood but much breath and is spongy.”

Turning next to Rufus, in his Onom. 222-3, he defines phusa as a perissoma and surplus of pneuma. However, he also says that physicians define pneuma as that which we breathe (288). He notes that some think breath goes from the nostrils to the brain (136) – “some” here referring to Coan doctors. According to Rufus, there is air in both cavities of the heart, though one has more (pneumatike); the other, the haimatike has more blood (Anat. 32). This air goes through the arteries from the heart to the rest of the body. When the heart takes in air from the lungs, it contracts so as to fill the arteries. In phrenitis, air moves constantly because of the sleeplessness of the patient, so the pulse

37 DK 31 B 100.
38 Wellman (1901), 77 says the Coan school differs from the Sicilian in saying that pneuma arrives first to the head and then the rest of the body, while in the Sicilian school the heart is primary.
becomes short. In fevers, the diastole is longer than the systole because of the passage of air. In women with angina, increased breathing indicates improvement of the condition. The head naturally receives vapors because it has wide channels. In melancholy, the stomach becomes dry because air goes from the hypochondrium instead of to the stomach.

As a brief addendum to the humoral and Hippocratic origins of disease as they manifest themselves in Rufus, it is worth mentioning another element, water. According to Rufus, water is the cause of lithiasis (marsh water)\(^39\) And in his *On Diseases of the Kidneys and Bladder*, heat acting on a cold bladder will dry up sediment and cause stones (117). Rufus further explains that men get urinary diseases more than women, since women have a shorter and wider urethra (8-10).\(^40\)

But perhaps the greatest impact of Hippocratic (and humoral) medicine on Rufus appears not in his works on anatomical nomenclature, but in his discussion of mental illness, particularly melancholy. For this, Peter Pormann’s edition is a useful source. Rufus’ treatise suggests that the root of psychiatric illness is also humoral in origin, as it is caused by an excess of black, or melancholic, bile. Rufus urges that there are somatic symptoms of melancholy: an affected individual cannot open his eyes, he has thick lips, and his skin assumes a flushed appearance.\(^41\) Though Rufus argues that the cause of melancholy is humoral, he also notes that too much of certain sorts of mental activity can contribute. In particular, he warns against performing too many geometrical calculations.

In terms of the specifics, Rufus focuses on the hypochondriac type of melancholy, whose origin is in the region below the rib cartilage (F4, F5, F6, F7), though in F11, he

\(^40\) Cf. Soranus I.5 where women’s bladders are described as larger and as having straighter necks.
\(^41\) Quaest. Med. 4.
mentions a type where the brain is affected. In Galen, we find three types of melancholy: (1) hypochondriac, (2) encephalic, and (3) systemic.\textsuperscript{42} Helmut Flasher argues that Galen’s categories derive from Rufus.\textsuperscript{43}

Melancholy results though imbalances in one’s diet and humors (F11.22) or, occasionally, through too much thinking (FF 34-6). Indeed, in F68.3, Rufus specifically mentions too much contemplation of geometry. The illness starts in the hypochondria (6.1) and is caused by swelling of the portal veins of the liver (7.1). In 8.1, Rufus notes that the head is linked to the stomach. The esophagus originates in the head, and large nerves travel from the head to the esophagus and stomach. This is why a blow to the head can induce vomiting. As for symptoms, Rufus notes that the eyes of melancholics are rigid; their lips are thick; and they have a dark complexion (F14.2). Men tend to suffer more than women, and among men, boys and castrates are the least affected (F18.1). To alleviate symptom, sexual intercourse is encouraged (F58.1); as proof, Rufus explains that wild animals are calmer after mating (F59.3).

Central to an understanding of Rufus’ texts is a discussion of how they are informed by the Alexandrian tradition. The greatest Alexandrians were Herophilus, Erasistratus, and Eudemus, and all held clear sway over Rufus. What is particularly relevant to Rufus’ anatomical texts is his interest in the Alexandrian practice of performing dissections on humans. This tradition disappeared by the first century CE, with a change of intellectual and political climate in Rome, a fact which Rufus regrets. Galen says of Herophilus that “he was deeply learned in all other branches of the medical art, but he had also arrived at a most accurate knowledge of what is to be learned by dissection, and for the most part,

\textsuperscript{42} On the Affected Parts 3.9-10.  
\textsuperscript{43} Flasher (1966).
he gained his knowledge not from irrational animals, as most men do, but from human beings." According to Celsus, the Alexandrians even performed vivisection on humans:

Whether Herophilus performed vivisection is unclear, and Galen mentions him only as a dissector (T54, T67-70, T107). Celsus says Herophilus and Erasistratus both performed vivisection. Diodorus of Sicily, the first century BCE historian, in his account of Egyptian history says the paraschistes, the person who anatomizes corpses to prepare them for embalming, was vilified. Indeed, he often had to flee because Egyptians “assumed every person who applied force to a body of someone of the same race (homophylos) and wounded it was polluted.” It is worth noting, however, that in Herodotus’ account of embalming in Egypt (2.86), mummification was viewed as different from scientific dissection. For embalmers drained to brain through the nostrils, and parts were no longer recognized anatomically.

It is not to say that Alexandrian anatomy was based exclusively upon human dissection; comparative anatomy continued to play a large role. Indeed, at several locations, Herophilus compares human organs to those of animals. In fragment 60, for instance, Herophilus notes similarities between the hare and other animals. And we also have Galen’s statement in fragment 61 that Herophilus described the “testicles” (ovaries) in various female animals.

Turning specifically to Herophilus’ treatise on anatomy (T60-129), three fragments are preserved. They are particularly detailed about the brain and nerves.

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44 Galen. *De Uteri Dissectione*, cap.5. [Kuhn, II, 895].
46 Diod.Sic. 1.91.1-4.
Previously, which is to say, in the Hippocratic and Peripatetic traditions, neurology had not advanced that far. There was no real distinction between nerves, ligaments, and tendons; all were subsumed under the heading “sinews.” But with the Alexandrians, particularly Herophilus, came major neurological advances, many of which Rufus references. For a summary of Herophilus’ accomplishments, Dobson’s (1925) account is a rich source. But among these accomplishments, Herophilus made the brain, rather than the heart, the most important center of activity. He knew of the cerebrum, cerebellum, meninges, and ventricles (both torcular meninges and choroid plexuses). And further, he distinguished between motor and sensory nerves, detailed seven pairs of cranial nerves, calling their lumen “poroi.”

To be sure, the patho-physiological significance of the brain was recognized early in the fifth century BCE by Alcmeon of Croton (24A5 DK), where a connection of the brain and optic nerve was noted. This was reconfirmed by Democritus (68A105DK) and Diogenes of Apollonia (64A19DK). But Aristotle failed to recognize the physiological function of the brain; he thought of it as a refrigerator of sorts, which served to counteract the heat of the blood (De Sensu 5.444a8-15). He also argued that it helped induce sleep (De Somno 3.456b17-28). Herophilus was also the first to describe the calamus scriptorius (T79), so-called because it resembles a reed pen. In terms of the nerves, Galen says that Herophilus and Eudemus (T80) were the first after Hippocrates to record the array of cranial nerves. In particular, he explains that Herophilus noted more than seven pairs of cranial nerves: the optic, oculomotor, trigeminal, motor root of the trigeminal, facial, auditory, and hypoglossal (T82).

48 Ibid. VI.8.
Herophilus’ work on the eye is particularly detailed, and Rufus draws upon his terminology of the ocular membranes. Herophilus identified four membranes of the eye: the sclera-cornea, iris, retina, and choroid (T86-89), likening the retina to a cobweb and the choroid, to grape skin. Rufus uses these same terms. He additionally named the “styloid process” for its resemblance to a pen (T90) and the “pharoid process” for its resemblance to the lighthouse on the island of Pharos (T92). Herophilus likewise describes the human liver with great accuracy. Of course, inspection of livers for divination was popular in Greece, Babylonia, Assyria, and Rome. But in these instances, it was the liver of sacrificial animals that tended to be viewed.\textsuperscript{49} While the author of the Hippocratic \textit{Nature of Bones} correctly says that the human liver has five lobes, he was relying on non-human specimens to make this claim.

In terms of reproductive anatomy, Herophilus identified ampullae of two vasa deferentia. And he called “varix-like” or “varicose assistants” (T101-103) what assists in transporting and producing seed.\textsuperscript{50} He denies that women have these varicose assistants (T105), but he nonetheless describes ovaries as “twins” (\textit{didumoi}, T109), the traditional word for “testicles” and explains that they “differ only a little from the ‘testicles’ of the male” (T109). And along the same lines, he refers to the Fallopian tubes as “spermatic ducts,” stating that they arise “from each testicle (sc. ovary) into the fleshy neck of the bladder just like the male duct” (T109). Throughout Greek medical texts, there has been a quarrel about whether the head or heart is the center. In early theories, the head reigned supreme; but in the fourth century, the heart was favored. Aristotle says that three

\textsuperscript{49} Stengel (1920), 6 and Mani (1959), 14-17.
\textsuperscript{50} Cf. Galen, \textit{De Semine} IV.582K.
scientists – Polybius Syennius, and Diogenes of Apollonia – argued that blood vessels emerged from the head.\footnote{Arist.\textit{HA}.3.2b24.}

Lastly, it is worth mention Erasistratus, Herophilus’ younger contemporary. He is often referred to as the founder of physiology, and his discoveries likely influenced Rufus’ work. Erasistratus considered the heart to be the source of both veins and arteries.\footnote{Galen. \textit{De Plac. Hipp, and Plato}. VI.6.} Moreover, he added to the existing knowledge of cranial nerves, noting that they travel to the eyes, ears, nostrils, and tongue.\footnote{Ibid. VII.3.} He also described the use of the epiglottis.\footnote{Aul. Gell. \textit{NA}.XVII.xi.1-5.} And lastly, it is worth mentioning Eudemus, another Alexandrian contemporary of Herophilus. Not much is known about him other than that Galen calls him a competent anatomist,\footnote{Galen. \textit{Hippocratis de Natura Hominis liber at Galeni in eum commentarius}, II.6.} and says he wrote correctly about nerves.\footnote{Galen. \textit{De Locus Affectis}. III.14.}

Early in the 3\textsuperscript{rd} century BCE, there was much debate between the so-called Rationalists and Empiricists about the nature of medical knowledge. Also involved in this debate, which continued from the 1\textsuperscript{st} century CE onwards, were the Methodists, who tried to find a position that avoided the problems and criticisms of the other two. Rationalists followed dogmatic philosophy, especially stoicism, while both the Empiricists and the Methodists followed philosophical skepticism. As background to this debate, in the 5\textsuperscript{th} century, most doctors felt they needed some sort of overarching theory to govern their practices. But the question was whether they should adopt a philosophical theory of nature, in general, and humans, in particular or whether they needed their own specific medical theories. The Hippocratic \textit{Nature of Man} is opposed to the former, suggesting
that global philosophical theories were not specific enough to cover physiological needs. In the 4\textsuperscript{th} and 3\textsuperscript{rd} centuries BCE, there were huge improvements to medical theory, especially under Diocles, Praxagoras, Herophilus, and Erasistratus. Diocles in particular warned against accounts being too theoretical.\footnote{Galen. Kühn VI, p.455.} Nonetheless, there was some sense that the principles of human health could be grasped by reason.

Despite these initial rumblings, the debate between the various schools really took flight in the beginning of the 3\textsuperscript{rd} century CE. In the Empiricist school, doctors explained that knowledge depends on experience, not the theoretical study of entities like pores, atoms, and essences. Empiricists criticized other doctors for trusting too much in reason and aptly called them “Rationalists.” Yet Rationalists countered that experience alone does not constitute the art of medicine. Erasistratus and Herophilus argued against the position that medicine is a matter of experience.\footnote{Galen.\textit{De Sect.ingred.} SM III, p.9, 15. See also Pliny, \textit{HN}. 29,5,6.}

Plato and Aristotle rejected the idea that any art or science could be a matter of mere experience. For them, it needs to be based on general knowledge, which is a matter of reason. Experience gives only facts, not explanations, and it leaves doctors ill-prepared to handle unusual cases. Reason, on the other hand, should at least offer physicians the possibility of grappling with them. Asclepiades attacked the Empiricist position, and in his view, diseases were not due to the humors, but to a disruption of the flow of atoms through pores. The Methodists, the third party in this debate, generalized Asclepiades’ view to say that diseases are due to the constriction and dilation of pores. Whereas Asclepiades said these were hidden states, the Methodists argued they would be visible to a trained doctor. In this way, the Methodists agreed with the Empiricists that (traces of)
diseases should be observable. Yet they argued that experience itself cannot guarantee repeatability.

So where does Rufus fit into this debate? Because he divulges so little about his own life, and because he is not particularly polemical, Rufus is difficult to pigeon-hole into any school. It is clear that he was learned, thorough in his research, and concise in his presentation. But Rufus does not join a side – at least, not in any sort of emphatic way. While Methodism was successful in Rome, Rufus never discusses the guidelines of Methodism. Nor does he detail Empiricist enquiry. He seems to favor Hippocratic medicine and his works are, at times, tinged with Aristotelian elements, but he is in no way a major player in this debate.
Chapter 1

Greek Text of Rufus’ *On the Names of the Parts of the Body*


[6] Βούλει οὖν καὶ τὰ ἰατρικὰ ἀπὸ τῶν ὀνομάτων ἀρξάμενος μανθάνειν, καὶ πρῶτον μὲν ὁ τι χρῆ καλεῖν ἐκαστὸν τοῦ σώματος μόριον, ἐπειτὰ τὰ ἄλλα ὅσα ἄν ἔπηται τῷ λόγῳ, ἢ δοκεῖ σοι ἢκανόν εἶναι δεικνύντα δηλοῦν ὅσπερ κοφὸν ὁ τι χρῆζεις διδάξαι; [7.] Ἐμοὶ μὲν οὐ δοκεῖ ἐκεῖνο ἀμείνον· οὐκ εὐμαθὲς δὲ καὶ ρᾷ στὸν οὔτω καὶ μανθάνειν αὐτῶν, καὶ ἔτερον διδάσκειν. [8.] Καὶ τοῦτο μοι δοκεῖ οὕτως. [9.] Ακούων δὴ καὶ ἀποβλέπων εἰς τὸν παῖδα τοῦτον διαμνημονεύσεις τὰ ἐπιφανῆ πρῶτον· εἶτα ὡς χρῆ καλεῖν τὰ ἐνδον, δοκεῖν τι, ὅ μάλιστα ἄνθρωπῳ ἐοίκε, διελόντες, διδάσκειν σε πειρασόμεθα οὐδὲν γὰρ ἐμποδοῦν, εἰ
μὴ καὶ παντάπασιν ἑοίκασιν, τὸ γοῦν κεφάλαιον ἐκάστου διδάξαι. [10.] Πάλαι δὲ
σώματος, κεφαλή, καὶ αὐχήν, καὶ θώραξ, καὶ χείρες, καὶ σκέλη· θώρακα γὰρ οὐ μόνον τὰ
ἀπὸ τῶν κλειδῶν μέχρι τῶν ύποχωνδρίων καλοῦμεν, ἀλλὰ καὶ τὸ σώματι ἀπὸ κλειδῶν
μέχρι τῶν αἰδοίων. [12] Κεφαλὴ δὲ καὶ τὸ τετραχωμένον καλεῖται κατὰ ἑαυτὸ, καὶ σὺν
τῷ προσώπῳ. [13] Τὸ δὲ τετραχωμένον τὸ μὲν ἐμπροσθεν, βρέγμα· τὸ δὲ ὀπίσθεν, ἱνόν·
tὰ δὲ ἐκατέρωθεν τὸ μὲν ἐμπροσθεν, βρέγμα· τὸ δὲ ὀπίσθεν, ἱνόν· τὰ δὲ ἐκατέρωθεν τοῦ
βρέγματος, κόρσαι και κρόταφοι· τὸ δὲ ἐν μέσῳ κατὰ ὁ δὴ μάλιστα εἰλοῦνται αἱ τρίχες,
kορυφῆ· τὸ δὲ ὑπὸ τῷ βρέγματι, μέτωπον. [14] Αἱ δὲ παρὰ τοὺς κροτάφους τῶν τριχῶν
ἐκφύσεις, ιουλοὶ· χάιται δὲ, αἱ ὀπίσθεν κατὰ τὸ ἱνόν ἀφειμέναι τρίχες. [15] Αἱ δὲ ἐσχάται
tοῦ μετώπου τριτίδες, ἐπισκύνιον, ὄπερ ἐπάγομεν τοῖς ὀφθαλμοῖς ἡ πρὸς ἑαυτοὺς τὶ
φροντίζωμεν ἢ αἰδόμεθα. [16] Ἀλλοι δὲ τὸ ὑπὸ τὰς ὀφρύας σαρκώδες, ἐπισκύνιον
ὄνομάζομεν. [18] Ὄφρυες δὲ τὰ τετραχωμένα τοῦ μετώπου πέρατα, ὅν τὸ μεταξὺ
μεσόφρυνον.

[19] Ὁπὸ δὲ ταῖς ὀφρύσι, βλέφαρα, τὸ μὲν ἄνωθεν, τὸ δὲ κάτωθεν. Τοῦτον δὲ αἱ μὲν
ἐκπερφυκοῦσι τρίχες, ταρσοῦ, καὶ βλεφαρίδες. [20] Τὰ δὲ ψαύοντα ἀλλήλων πέρατα ἐν τῷ
καθεύδειν ἡμᾶς· στεφάναι, καὶ χῇ λαῖ. Τοῦ δὲ ἀνο βλεφάρον τὸ ἐπιπολῆς, κύλον. [21] Τὰ
dὲ κούλα πέρατα τοῦ τῇ ἀνο καὶ τοῦ κάτω βλεφάρου, κανθοῖ· [22] ὁ μὲν μείζον, ὁ πρὸς
tὴν ῥίνα, ὁ δὲ ἐλάσσων, ὁ πρὸς τῷ κροτάφῳ. [23] Ὄφθαλμοῦ δὲ, τὸ μὲν ἐν μέσῳ
βλεπόμενον, ὄψις και κόρη. [24] Καὶ γλήνην τὸ εἰδώλον τὸ ἐν τῇ ὄψι φαινόμενον
καλοῦσιν.

[43] Τὸν δὲ ὠτον, ἀκοὴ μὲν, ὁ πόρος διὰ οὗ ἀκούομεν· λοβὸς δὲ, τὸ ἐκκρεμὲς, ὀπέρ καὶ μόνον Ἀριστοτέλης φησὶ τοῦ ὠτὸς ὀνομάζεσθαι, τὰ δὲ ἄλλα ἀνώνυμα εἶναι. [44] Οἱ δὲ ίατροὶ καὶ ταῦτα ἄνωμασαν, πετρύγιον μὲν τὸ ἀνωτάτῳ πλατὺ ἐπικλίνες· ἔλικα δὲ, τὸ ἐντεῦθεν συμπληροῦν τὴν περιφέρειαν τὸν ὠτον· ἀνθέλικα δὲ τὸ ἐν μέσῳ ὑπεραίρον τὴν κοιλότητα· κόγχην δὲ τὸ ἀπὸ τῆς ἀνθέλικος κοιλον· τὸ δὲ ἀπεναντίον τῆς κόγχης ἔξαρμα παρὰ τὸ πέρας τοῦ κροτάφου, τράγον· τὸ δὲ τῆς ἐλικος τέλος τὸ ὑπότραχυ, ἀντιλοβίδα.

[45] Πρόσωπον δὲ ὄνομασται πᾶν τὸ ἐμπροσθεν τῆς κεφαλῆς. [46] Μήλα δὲ τὰ ὑπὸ τοῖς όφθαλμοῖς ἔξαρματα τοῦ προσώπου, ἢ δὴ καὶ αἰδουμένων ἤμων ἐρυθραίνεται. [47] Απὸ δὲ τῶν μῆλων αἱ παρειά· καλοῦνται καὶ σιαγόνες, καὶ γνάθου· καὶ προσέτι γένους ἢ μὲν κάτω, ἢ δὲ ἁνω· καὶ τὸ ἀποξύ τῆς κάτω γνάθου, γένειον καὶ ἀνθερεόν. [48] Τὸ δὲ ὑπὸ τὴν κάτω γνάθον σαρκοδές, λευκανίαν· οἱ δὲ ἀνθερεόνα μὲν τοῦτο, λευκανιάν δὲ τὸ πρὸς τῇ κλειδὶ κοιλὸν ὀνομάζουσιν. [49] Τοῦ δὲ πώγωνος, ἢ μὲν ὑπὸ τοῖς κροτάφοις πρώτῃ βλάστησις, ιουλος· ἢ δὲ ἐπὶ τῷ ἁνω χείλει, προπωγάνιον· αὐξηθεῖσα δὲ αὐτὴ σὲ τρίχας, μύστακες· αἱ δὲ ἐπὶ ἄκρου γῶνιον· αὐξηθεῖσα δὲ αὐτῇ σὲ τρίχας, μύστακες· αἱ δὲ ἐπὶ ἄκρου τοῦ γενείου, πάπποι· αἱ δὲ κάτω τῆς γένους, ὑπήνη.

[50] Στόμα δὲ καὶ ἡ πρώτῃ τομῇ τῶν χειλῶν, καὶ ἡ ἐφεξῆς εὐρυχωρία μέχρι τῆς φάρυγγος. [51] Ἑν δὲ τῷ στόματι ἄλλα τέ ἐστι, καὶ οἱ ὠδόντες· ἐνοί δὲ κραντήρας ὀνομάζουσιν· τούτων δὲ τομεῖς μὲν τοὺς ἐμπροσθεν τέσσαρας, κυνόδοντας δὲ τοὺς ἐφεξῆς, ἐνα ἐκατέρωθεν· μύλους δὲ καὶ γομφίους τοὺς μετὰ τοὺς κυνόδοντας, πέντε

[58] Ὡπογλωσσίς δὲ, τὸ κάτωθεν· ἐπιγλωσσίς δὲ τὸ ἐνδον ἐπὶ τοῦ βρόγχου πῶμα τι γινόμενον, ὅταν καταπίνουμεν, ὑπὲρ τοῦ μηδὲν εἰς τὸν πλεύμονα ἐμπίπτειν· ἀναπνεύτων δὲ μετέωρον ἐστίν, ως μὴ κολύῃ τὸ ἀναπνεῦν. [59] Οὐρανὸς δὲ καὶ ὑπερφόρα τὸ περιφερές τῆς ἀνω γνάθου. [60] Κίων δὲ καὶ γαργαρεῖων ἢ ἐκ τῆς ὑπερφάς πρόσφυσις.

[61] Ἀριστοτέλης δὲ σταφυλοφόρον αὐτὸ καλεῖ, ὅτι φλεγμήναντος σταφυλῆ τι ὁμοιον ἀκαταπάνυται· σταφυλῆ γὰρ, οὐ τὸ μόριον, ἀλλὰ τὸ πάθημα χρῆ ὀνομάζειν. [62] Φάρυγξ δὲ ἢ φαρύγεθρον, ἢ πρὸς τῇ καταπόσει πᾶσα εὐρυχωρία. [63] Ταῦτα ἄρα καὶ Ὀμηρος ἐποίησεν·

...φάρυγος δ’ ἐξέσσυτο οίνος
ψωμοὶ τ’ ἀνδρόμεοι...

οὐ γὰρ δὴ ἐκ τοῦ βρόγχου καὶ τοῦ πλεύμονος ἐπανήμει ὁ Κύκλωψ τὸ σιτίον καὶ πόμα· τοῦτο γὰρ δεινῶς ἀμαθές καὶ ἀνόητον.
[64] Παρίσθμια δὲ καὶ ἀντιάδες καὶ μήλα, τὰ ἑκατέρωθεν τοῦ φαρυγέθρου σαρκώδη καὶ ἀδενοειδή. [65] Τέσσαρες δὲ εἰσιν αἱ ἀντιάδες, αἱ μὲν ἐνθὲν καὶ ἐνθὲν ἄκρου τοῦ βρόγχου· αἱ δὲ ἐφεξῆς καὶ κατωτέρω.

[66] Μετὰ δὲ τὴν κεφαλὴν, τράχηλος· τὸ δὲ αὐτὸ καὶ δειρὴ καὶ αὐχήν· ὑποδειρίς δὲ τὸ ἑκ τὸν πρόσθεν τελευταῖον τῆς δειρῆς. [67] Τραχήλου δὲ τὸ μὲν ἐμπροσθέν, βρόγχος καὶ τραχεία ἄρτηρια, διὰ τὸ ἀναπνεομένως καὶ ἡ ὑπεροχὴ τοῦ βρόγχου, λάρυγξ· τὸ δὲ ὑποσθέν αὐτοῦ, τένοντες. Τὸ δὲ πρὸς ταῖς κλεισίς κούλον [68] Ὄμηρος μὲν καλεῖ λευκανήν, οἱ δὲ ἰατροὶ ἀντικάρδιον καὶ σφαγήν. [69] Τὰ δὲ ἀπὸ τῶν τενοντων ἐπὶ τοὺς ὦμους καθήκοντα, ἐπωμίδες.

[70] Ὄμος δὲ, ἡ κεφαλὴ τοῦ βραχίονος, ἡ πρὸς τὴν ὦμοπλάτην, καὶ τὸ σύμπαν ἄκρωμον· κοτύλη δὲ ὦμου τὸ κούλον τῆς ὦμοπλάτης. [71] Ὀμοπλάται δὲ τὰ ἐγκείμενα τῷ νότῳ πλατέα ὀστά, ὧν αἱ διὰ μέσου ὑπεροχαί, ῥάχεις ὦμοπλατῶν. [72] Ακρώμιον δὲ ὁ σύνδεσμος τῆς κλειδός καὶ τῆς ὦμοπλάτης. [73] Εὐδημός δὲ ὀστάριον εἶναι φησι μικρὸν τὸ ἀκρώμιον. [74] Κλείδες δὲ τὰ ὑπὸ τὸ τραχήλῳ ὀστά· αὐτὰ πρὸς τὸ στήθος ἠθρομέναι εἰργοῦσι τοὺς ὦμους καὶ τὰς ὦμοπλάτας μὴ συμπίπτειν, ὀσπερ τοὺς ἄλλους ἥσιος· ἐκεῖνα γὰρ κλείδας οὐκ ἔχει· διὰ τούτο καὶ ἀνθρώπος πλατυστερνότατος.

[75] Μασχάλη δὲ ἐστι τὸ ὑπὸ τὸ ὦμο χούλον, εἰς ἣν τὰ πολλὰ ὀλισθαίνει ὁ ὦμος. [76] Μάλην δὲ σὺ ἐλληνικὸν ὄνομαζειν· τὸ δὲ φέρειν τι κρύπτοντα ἐν τῇ μασχάλῃ, ὑπὸ μάλης ἔχειν λέγεται.
[77] Βραχίον δὲ τὸ ἐφεξῆς τοῦ ὁμοῦ· τοῦτον δὲ ἢ μὲν πρὸς τῷ ὄμῳ περιφέρεια, κεφαλὴ βραχίονος, καὶ ἢ ἐς ὑπεροχή παρὰ τὸν ἄγκονα, ἢν δὴ φησὶν Ἰπποκράτης ἐνίους ἀμαθὸς νομίζειν ἀπόφυσιν εἶναι τοῦ πῆχεος, καὶ αὐτὴ κεφαλὴ βραχίονος. [78] Μετὰ δὲ τὸν βραχίονα, ἄγκων τὸ σύμπαν ἄρθρον, καὶ τὸ ὀξὺ ἐπὶ οὗ κλινόμενοι στηριζόμεθα. [79] Οἱ δὲ ὀλέκρανον καλοῦσιν· Δωριεῖς δὲ οἱ ἐν Σκελείᾳ κύβιτον· Ἑπίχαρμος δὲ καὶ τὸ παῖειν τῷ ἄγκωνι κυβιτίζειν ἔλεγεν. [80] Τὸν δὲ ὀστὸν τοῦ ἄγκωνος, τὸ μὲν ὑποτεταγμένον, πῆχυς, τὸ δὲ ἐπικείμενον, κερκίς· περαινεὶ δὲ ταῦτα πρὸς τὸν καρπὸν. [81] Τὸ δὲ ἐφεξῆς τοῦ καρποῦ πλατὺ καὶ συμφυὲς, μετακάρπιον, καὶ ταρσὸς· εἶτα δάκτυλοι.

[82] Χειρ δὲ τὸ ὅλον ἀπὸ τοῦ ὁμοῦ καὶ ὁ κρατοῦμεν. [83] Δακτύλων δὲ ὁ μὲν τις μέγας, ἀφεστηκὼς τῶν ἄλλων· ὁ δὲ λιχανός, ὁ πρῶτος τῶν τεσσάρων· ὁ δὲ μέσος, ὁ δὲ παρὰ μεσος, ὁ δὲ μικρός. [84] Τὰ δὲ ὅστα αὐτῶν, σκυταλίδες καὶ φάλαγγες· τὰ δὲ πρῶτα ἄρθρα προκόνδυλοι, τὰ δὲ ἐφεξῆς κόνδυλοι, τὰ δὲ τελευταῖα μετακόνδυλοι. [85] Αἶ δὲ τῶν ὄνυχων ἄρχαι, ῥιζωνύχια· τὰ δὲ ἐσωθὲν πέρατα τῶν δακτύλων, ῥάγες, καὶ κορυφαί.
[86] Στῆθος δὲ τὸ ὑπερέχον ἀπὸ τοῦ μεγάλου δακτύλου σαρκώδεις ὑπὸ τὸ κούλον τῆς χειρός. [87] Θέναρ δὲ τὸ μεταξὺ διάστημα τοῦ λιχανοῦ καὶ τοῦ μεγάλου δακτύλου σαρκώδεις, ὑπὸ ὃ δὲ τὸ κούλον τῆς χειρός· ὑπόθεναρ δὲ τὸ ὑπὸ τοῖς τέσσαρες δακτύλους. [88] Δοκεῖ δὲ μοι Ἰπποκράτης πᾶν τὸ πλατὺ τῆς χειρός θέναρ ὀνομάζειν.

[89] Ἀπὸ δὲ τῶν κλειδῶν στῆθος μὲν τὸ ἐμπροσθεν τὸ μέσον· εἰς δὲ ὁ [90.] δὲ ἐμβάλλουσιν αἱ πλευραί, στέρνον. Νῦτον δὲ τὸ ἐξόπισθεν ἀπὸ τοῦ αὐχενος μέχρι τοῦ μεταφρένου· μετάφρενον δὲ τὸ μεταξὺ τοῦ νότου καὶ ὁσφύος κατὰ τὴν τῶν φρενῶν πρόσφυσιν· ὁσφύς δὲ τὸ τελευταῖον τῆς ράχεως. [91] Αἶ δὲ ὑπὸ τῷ στῆθει σαρκώδεις
ὑπεροχαὶ, μαστοὶ, καὶ τιτθοὶ· μαστοῦ δὲ τὸ μὲν ἄκρον, θηλῇ. [92] Ἡ δὲ πρῶτη ἐν τῷ ἡβάσκειν αὔξησις, κύαμος· ὁ δὲ ὅλος ῥυγκος, ἁσκομα· [93] κυριώτερον δὲ ἐν γυναικί.

[94] Πλευρὸν δὲ καλεῖται πᾶν τὸ ὑπὸ τῇ μασχάλῃ· τὰ δὲ ὅστα, πλευραί· τὰ δὲ μεταξὺ αὐτῶν, μεσοπλεύρια. Νόθαι δὲ πλευραί, αἱ μὴ περαινοῦσαι πρὸς τὸ στέρνον. [95] Τὸ δὲ ὑπὸ τῷ στῆθει κούλον, στόμα κούλιας· οἱ δὲ προκάρδιον, οἱ δὲ καρδίαν ὁνομάζουσι, καὶ τοὺς πόνους τοὺς ἐνταθά, καρδιωγμοῦς καὶ καρδιαλγίας. [96] Χόνδροι δὲ τὰ πέρατα τῶν πλευρῶν τῶν νόθων· υποχόνδρια δὲ τὰ ὑπὸ τοῖς χόνδροις μυώδη.

[97] Κοιλία δὲ καὶ γαστῆρ, τὸ ἐφεξῆς· ἐπιγάστριον δὲ τὸ ἐπὶ τῆς γαστρὸς δέρμα. [98] Ὀμφαλὸς δὲ τὸ ἐν μέσῳ κούλον, ἡ ἀποτομὴ τῶν φλεβῶν, διὰ ὅν τὸ ἐμβρύον τρέφεται· τοῦτο δὲ τὸ ἐν μέσῳ, ἄκρωμφαλον. [99] Τὸ δὲ ὑποκείμενον τῷ ὀμφαλῷ δέρμα, γραία, ὃ ὅτι ρυτιδούμενον γῆρας σημαίνει. [100] Τὸ δὲ ὑπόκατο τοῦ ὀμφαλοῦ, ὑπογάστριον καὶ ήτρον· τὸ δὲ συνεχές τούτῳ μέχρι τῶν αἱ δοίῳς ἐπίσειον, καὶ ἡ βην, ἄλλοι δὲ ἐφήβαιον καλοῦσιν.

[101] Τὸν δὲ αἰδοὺν, τοῦ μὲν τοῦ ἀρρήνος ἢ μὲν ἀποκρεμῆς φύσις, καυλός, καὶ στήμα· τὸ δὲ μὴ ἐκκρεμές, ὑπόστημα, καὶ κύστεως τράχηλος· καὶ ἡ διὰ μέσου γραμμῆ, τραμῖς· οἱ δὲ ὄρφον ὅνομάζουσιν. [102] Τὸ δὲ πέρας τοῦ καυλοῦ, βάλανος, καὶ τὸ δέρμα τὸ περὶ αὐτῆ, πόσθη, καὶ τὸ ἐσχατὸν τῆς ποσθῆς, ἀκροπόσθιον. [103] Καὶ τὸ κοίλωμα διὰ οὗ τὸ σπέρμα καὶ τὸ ὄροφον ἀποκρίνεται, ὑφήθρα, καὶ πόρος ὑφητικός· ὑφητῆρα δὲ οὗ χρῆ καλεῖν· εἰσὶ γὰρ ὑφητῆρες ἄλλοι, διὰ ὅν τὸ ὄροφον ἀπὸ νεφρῶν εἰς κόστιν ἰσχύ.  

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Ὄσχεος δὲ ἦστιν ὑ ὁ ἄρχεις καλεῖν οὐδὲν διαφέρει.

Τὸν δὲ διδύμων τὸ μὲν ἐπάνω, κεφαλῆ, τὸ δὲ κάτω, πυθμῆν. [107] Καὶ τὸ χαλώμενον τοῦ ὅσχεον λακκόπεδον. [108] Ὡ δὲ ἀεὶ χαλαρὸν, λακκοσχέαν τοῦτον Ἀθηναίοι καλοῦσιν. Τὰ δὲ μεταξὺ ὅσχεον καὶ ύποστήματος καὶ μηρῶν, πλεύσεις.

Τῆς δὲ γυναικὸς τὸ αἴδοιον, κτεῖς μὲν τὸ τρίγωνον πέρας τοῦ ὑπογαστρίου· [110] ἄλλοι δὲ ἐπίσειον καλοῦσιν. Σχίσμα δὲ, ἡ τομή τοῦ αἴδοιον. [111] Τὸ δὲ μυὸδες ἐν μέσῳ σαρκίῳ, νῦμφη, καὶ μύρτων· οἱ δὲ υποδερμίδα, οἱ δὲ κλειτορίδα ὀνομάζουσι, καὶ τὸ ἀκολάστως τοῦτου ἀπεσθαὶ κλειτορίαζεν λέγουσιν. [112] Μυρτόχειλα δὲ τὰ ἑκατέρωθεν σαρκώδῃ· ταῦτα δὲ Εὐρυφόν καὶ κρημνοῦς καλεῖ· οἱ δὲ νῦν τὰ μὲν μυρτόχειλα, πετρυγώματα, τὸ δὲ μύρτων, νῦμφην.

Τῆς δὲ ῥάχεως τὰ ὀστᾶ σφόνδυλοι· Ὁμηρος δὲ καὶ ἀστραγάλους αὐτὰ καλεῖ· καὶ ἡ ἀπόφυσις τῶν σφονδύλων, ἀκανθά. [114] Τὸ δὲ τελευταῖον ὀστοῦν τῆς ὁσφύος, ἱερὸν ὀστῶν· οἱ δὲ υποσφόνδυλον καλοῦσιν· τὸ δὲ ἀκρον αὐτοῦ, κόκκυγα. [115] Τὰ δὲ ὑπὸ ταῖς πλευραῖς, λαπάραι καὶ κενέοις· ἐῖτα λαγόνων ὀστᾶ, καὶ τούτων αἱ κοιλότητες, κοτύλαι.

Πυγὴ δὲ τὰ μετὰ τὴν ὁσφύν σαρκώδη, καὶ ἐφέδρανα, ἐπὶ δὲ καθίζομεν· ἄλλοι δὲ γλουτοῦς καλοῦσιν· τὰ δὲ ὑπὸ τοὺς γλουτοῦς, ύπογλουτίδες. [117] Βουβδόνες δὲ τὰ ἐξηροεῖσθεν τῶν μηρῶν τὰ παρὰ τὴν ἡβην. [118] Ἰσχίον δὲ καὶ τὸ νεῦρον τὸ πρῶς τὴν κοτύλην, καὶ ὡλὸν τὸ ἄρθρον. [119] Τὸν δὲ μηρῶν τὰ ἔσω, παραμήρια· τὰ δὲ μεταξὺ τῶν μηρῶν, μεσομήρια. [120] Οἱ δὲ πρὸς τοὺς γόνασι μύες, ἐπιγουνίδες, καὶ τὸ ὀστοῦν τὸ ἐπὶ
τῷ γόνατι, ἐπιγνωστὶς. Ἡποκράτης δὲ ἐπιμυλίδα ὀνομάζει. Γόνυ δὲ ἐστὶ τὸ ἄρθρον τοῦ
μηροῦ τὸ πρὸς τὴν κνήμιν, [121] καὶ ἵνα τὸ ὀψιθεῖν, ἐν ὦ κάμπτομεν τὸ γόνυ. [122]
Γαστροκνήμια δὲ, ὃ μέγας μῆς ὁ ὀψιθεῖν τῆς κνήμις, ἀπὸ οὗ τὸ πλατὺ νεῦρον τὸ πρὸς τῇ
πτέρνῃ πέφυκεν.

[123] Τὸν δὲ ὅστὸν τὸ μὲν ἑσω, κνήμι, καὶ τοῦτο τὸ ὁμοιοθεῖν, ἀντικνήμιον· [τὸ δὲ
ἐξω, κερκίς·] Ἡρόφιλος δὲ καὶ τὴν κνήμιν κερκίδα ὀνομάζει. [124] Τὰ δὲ ἄκρα ἀμφοῖν
tοῦ ὅστοιν τὰ πρὸς τῷ ποδί, σφυρὰ καλεῖται, ἀστράγαλοι δὲ οὐκ ὀρθῶς· ἔχει μὲν γὰρ καὶ
ἀστράγαλον ὁ ποὺς τοῦ ἀνθρώπου ὑπὸ τῷ σφυρῷ, κἂν οὐκ ἐμφανῆ. [125] Πτέρνα δὲ τὸ
ὁμοιοθεῖν περιφερές τοῦ ποδοῦ· πεδίον δὲ καὶ ταρσός τὸ ἐμπροσθεῖν πλατὺ· στήθος δὲ τὸ
κάτωθεν μετὰ τὸ κούλον, ἀπὸ οὗ οἱ δάκτυλοι. [126] Καλεῖν δὲ τοῦτος ἀνάλογον τοὺς τῆς
χειρὸς δακτύλοις, καὶ τὰ ἄλλα κοινὰ πρὸς τοὺς τῶν χειρῶν δακτύλους οὐδὲν κωλύει.

[127] Τὰ μὲν οὖν ἐμφανῆ, ὃ παῖ, σὺν τοῖς ὑποκειμένοις ὅστοις οὗτος χρῆ καλεῖν τὰ δὲ
ἐνὸν τοὐτον τὸν πίθηκον ἀνατέμοντες, ὀνομάζειν πειρασόμεθα· ἐγγυτάτω γὰρ τὴν
φύσιν ἀνθρώπου καὶ τοῖς ὅστοις, καὶ τοῖς μυσὶ, καὶ τοῖς σπλάγχνοις, καὶ ταῖς ἀρτηρίαις,
kαὶ ταῖς φλεβῖς, καὶ τοῖς νεύροις· δεύτερα δὲ τὰ ἄλλα τὰ πολυσχίδη· τρίτα τὰ ἀμφότοντα
tὸν διχήλων· τὰ δὲ μὴ ἀμφότοντα καὶ μῶνυχα, προσωτάτω. [128] Εἰ δὲ τῇ ἡδῇ εἰρηται
μετὰ τῶν ἐμφανῶν, οὐδὲν δὲ ὑπὲρ τοῦτο δὲς λέγειν.

[129] Ὄρα δὴ τοίνυν τὸν ὑπὸ τῷ δέρματι τοῦ κρανίου χιτῶνα· οὕτως περικράνιος
καλεῖται· ὃν δὲ ἄν ἰδοὺς περὶ τοῖς ἄλλοις ὅστοις, περιόστεος καλεῖται. [130] Τὰς δὲ
συμβολὰς τῶν ὅστον τοῦ κρανίου, ῥαφὰς καλοῦσι· ἐοίκασι δὲ δυοῖν πριόνων συνθέσει·

[137] Τὰ δὲ πλησίον τῶν ὅτων ὅστα, διὰ στερεότητα λιθοεἰδῆ ὄνομασται. [138] Ἡστὶ δὲ ἐκατέρωθεν ἐν σκληρῶν καὶ ύπόλευκων, ὡς τὸν κεφαλῆς τοῦ μεγάλου τῆς χειρὸς δακτύλου, διὰ ὅτι αἱ ἀκοι ὑπάρχουσι. [139] Ἀλλοι δὲ τὰς πρὸς τῷ ἱνῷ καταφερεῖς ὑπεροχάς λιθοεἰδεῖς καλοῦσιν· ἄλλα οὐκ ὀρθῶς· ὑπόκενοι γὰρ καὶ στηραγωγοῦν, καὶ οὐ στερεαὶ κατὰ τούνομα. [140] Αἱ δὲ ἀπὸ τῶν ἄκουῦν τείνουσαι πρὸς τὰ μῆλα ἀποφύσεις, ἵππωματα.

[141] Καὶ οἱ μῦξες, οἱ μὲν ἐν ταῖς κοιλότητι τῶν κροτάφων, κροταφίται· [142] οἱ δὲ περὶ τὴν κάτω γνάθον, μασητήρες. Αὐταὶ δὲ αἱ λεπταὶ καὶ ὑπομῆκες καὶ κάτω πρὸς τὸ φαρύγαθον νεῦου σαὶ ἀποφύσεις, στηρειοεἰδεῖς καλοῦνται. [143] Ἐδήμος δὲ εἰκάζει μὲν αὐτὰς ἀλκτρυώνων πλήκτροις, ἀνωνύμους δὲ ἐδ.
[144] Τρήματα δὲ πολλὰ μὲν διατέρηται διὰ τοῦ κρανίου· πάντα δὲ οὐκ ὄνομασται χωρίς δυοῖν τυφλὰ δὲ ταῦτα καλοῦσιν· καὶ οἱ ιατροὶ διαφέρονται πρὸς ἄλληλους, ὀπότερα χρὴ καλεῖν τυφλὰ, ἢ γάρ τα πρῶτα τοῦ μεγίστου τρήματι τοῦ κρανίου, διὰ οὐ τὸ νωτιαῖος εἰς τοὺς σφονδύλους ἐμβάλλει, ἢ τὰ πρῶτα ταῖς ἀκοαῖς, καὶ μικρὸν ἐμπροσθεῖν παρὰ τὰ ἄρθρα τῆς γέννου. [145] Ἔστι δὲ οὔτε ἐκεῖνα, οὔτε ταῦτα οὕτω τυφλὰ, ὦστε μὴ διατετρήσθαι, τὰ μὲν εἰς τὸ μέγα κοίλωμα τοῦ νωτιαίου, τὰ δὲ ὑπὸ τὰ ἡθμοειδῆ, καὶ διὰ πάντων αὐτῶν νεῦρα διαπεφυκότα ὀρᾶται, ὑπὲρ ὅν ἐν ταῖς διαιρέσεσιν εἰρήσεται. [146] ἔοικασι δὲ τυφλὰ αὐτὰ ὄνομάζειν, ὅτι οὐκ εἰς εὐθὺ φαίνεται διατετρημένα.


[153] Τὸν δὲ τοῦ ὀφθαλμοῦ χιτῶνον, ὁ μὲν πρῶτος ἐν τοῖς ἐπιφανέσιν ὄνομασται κερατοειδῆς· οἱ δὲ ἄλλοι, ὁ μὲν δεύτερος, βαγοειδῆς, καὶ χοριοειδῆς· τὸ μὲν ὑποκείμενον
αὐτῷ τῷ κερατοειδὲ, ραγοειδῆς, ὅτι έοικε ραγί τῇ ἔξωθεν λειώτητι, καὶ τῇ ἔσωθεν
dασύτητι· τὸ δὲ ύποτῷ λευκῷ, χοροειδῆς, ὅτι καταφλεβὸν ἐστὶ τῷ περὶ τῷ ἐμβρύῳ
περικειμένῳ χοροειδεῖ ἐοικός· ὃ δὲ τρίτος περιέχει μὲν υαλοειδῆς ύγρόν· καλεῖται δὲ
ἀρχαῖον όνομα ἀραχνοειδῆς διὰ λεπτότητα· ἐπειδὴ δὲ Ἡρόφιλος εἰκάζει αὐτὸν
ἀμφιβλήστρῳ ἀνασπομένῳ, ἐνιοὶ καὶ ἀμφιβληστροειδῆς καλοῦσιν· ἄλλοι δὲ καὶ υαλοειδῆ
ἀπὸ τοῦ ύγροῦ· [154] ὃ δὲ τέταρτος περιέχει μὲν τὸ κρυσταλλοειδῆς ύγρόν, ἀνώνυμος δὲ
ὦν εὖ ἄρχης, ὕστερον φακοειδῆς μὲν διὰ τὸ σχῆμα, κρυσταλλοειδῆς δὲ διὰ τὸ ύγρὸν
ὅνομάσθη.

[155] Τὸν δὲ πρώτον τοῦ τραχήλου σφόνδυλον, Ἱπποκράτης ὄδόντα δοκεῖ μοι καλεῖν. Τὸ
dὲ ὑπὸ ταῖς ἀντιάσιν ὄστοιν, τὸ περιειληφός τὴν κεφαλὴν τοῦ βρόγχου, οἱ μὲν ύωειδὲς
dιὰ τὸ σχῆμα ὅνομάζουσιν, ὅτι έοικεν τῷ γράμματί· Ἡρόφιλος δὲ παραστάτην καλεῖ, ὅτι
παρέστηκε ταῖς ἀντιάσιν. [156] Ἡ δὲ τοῦ δευτέρου σφόνδυλου εἰς τὸ ἁνό καὶ ἔμπροσθεν
ἀπόφυσις, πυρηνοειδῆς καλεῖται.

[157] Ὡ δὲ τὰ σιτία καὶ τὰ ποτὰ εἰς τὴν κούλιαν κάτεισι, στόμαχος, καὶ οἰσοφάγος. [158]
Καὶ τὰ νεῦρα τὰ ἐκατέρωθεν αὐτοῦ, τόνοι· [159] καὶ τὰ ἄλλα αἰσθητικὰ καὶ ἱβόδη, τόνοι
ὡςαυτῶς. Τῆς δὲ τραχείας ἄρτηρίας ὃλος ὁ πόρος] καλεῖται βρόγχος· αἱ δὲ εἰς τὸν
πλεύμονα ἀποφύσεις, βρογχίαι, καὶ σῆραγγεῖς, καὶ ἀορταί.

[160] Ἡ δὲ ἄρχη τοῦ θερμοῦ, καὶ τοῦ ζῆν, καὶ τοῦ σφύζειν, καρδία· καὶ ταύτης τὸ μὲν
ἂνω, κεφαλὴ, τὸ δὲ ἁκρον καὶ ὀξὺ, πυθμήν, καὶ τὰ κοιλώματα, κοῦλια. [161] Ἡ μὲν
παχυτέρα καὶ ἐν ἀριστερᾷ, ἄρτηριώδης· ὃ δὲ λεπτότερα, καὶ ἐν δεξιᾷ, φλεβώδης· αὕτη δὲ
καὶ εὑρυκουλιωτέρα τῆς ἑτέρας. [162] Τὰ δὲ ἐκατέρωθεν τῆς κεφαλῆς ὅσπερ πτερύγια κούλα, καὶ μαλακὰ, καὶ κινητὰ, ἐν φί πᾶσα σφύζει ἡ καρδία, ὡτα καρδίας. [163] Ὁ δὲ περὶ τὴν καρδίαν χιτῶν περικάρδιος.


Ἡ δὲ παρὰ τὴν πρώτην τοῦ ἐντέρου ἐκφυσίν κειμένη σάρξ διαπίμελος καὶ ἀδενώδης, πάγκρεας.


Ἐκ δὲ τῶν ἀριστερῶν τῆς κοιλίας, σπλήν· καὶ τοῦ τοῦ παχὺ καὶ ἀνωτάτω, κεφαλή. [182] Πρὸς δὲ ταῖς ἐσχάταις πλευραῖς νεφροὶ δύο· καὶ ἀπὸ τοῦτον ὀὐρητήρες δύο, οἳ τινες εἰσβάλλουσιν εἰς τὴν κύστιν. [183] Ἐστὶ δὲ ἡ κύστις, εἰς ἣν τὸ οὖρον τὸ ἐκ τῶν νεφρῶν καὶ τῶν οὐρητήρων καταρρέει, καὶ ἀπὸ τῆς κύστεως ὁ τράχηλος, καὶ τὸ ὑπόστημα, καὶ ἡ τραμής, καὶ τὰ άλλα τὰ ἡδη εἰρημένα.

Τὰ δὲ σπερματικὰ ἀγγεία ἐστὶ μὲν τέσσαρα, δύο μὲν κιρσοειδῆ, δύο δὲ ἀδενοειδῆ· ἐκαλοῦντο δὲ καὶ γόνιμοι φλέβες. [185] Καὶ τῶν κιρσοειδῶν, τὰ πρὸς τοῖς διδύμοις, παραστάται· ἐνίοις δὲ καὶ πάντα παραστάτας καλεῖν διαφέρει οὐδέν.

Σκεπτέον δὲ καὶ εἰ τοῖς θήλεσι τὰ αὐτὰ πεποίηται, ὡσπερ καὶ τοῖς ἄρρεσιν· Ἡροφίλῳ μὲν γὰρ οὐ δοκεῖ τὸ θῆλυ κιρσοειδεῖς ἠχεῖν παραστάτας· ἐν δὲ προβάτου ύστερα εἴδομεν ἐκ τῶν διδύμων πεφυκότα τὰ ἀγγεία κεκυρωμένα ἐκατέρωθεν.
συνετέτρητο δὲ ταῦτα εἰς τὸ κούλωμα τῆς ύστερας, ἀπὸ ὅν υπόμυξον ὑγρὸν πιεζοῦντων ἀπεκρίνετο· καὶ ἦν πολλῆ δόκησις σπερματικὰ ταῦτα εἶναι, καὶ τοῦ γένους τῶν κιρσοειδῶν. [187] Τοῦτο μὲν δὴ οἶον ἔστιν, αἱ ἀνατομαῖ τάχα δείξουσιν.

Τοῦτο ἄρα ἦν καὶ τὸ ἐν ταῖς Κνίδιας γνώμαις γεγραμμένον· ἡν δὲ νεφρίτης ἐχή, σημεία τάδε· ἐὰν ύστερῃ παχύ, πυδδες, καὶ ὅποιον ἔχωσιν ἐς τε τὴν ὅσφυν καὶ τοὺς κενεώνας, καὶ τοὺς βουβώνας, καὶ τὸ ἐπίσειον, τοτὲ δὲ καὶ ἐς τὰς ἀλώπεκας. [191] Τὸ καὶ δήλων ὅτι χρήσιμον τὰ τοιαῦτα εἰδέναι εἰς διάγνωσιν τῶν οὕτως ὀνομασμένων. [192] Κλείταρχος δὲ τοὺς ἐξω κατὰ τῆς ῥάχεως μύας, ψόας, καὶ νευρομήτρας, καὶ ἀλώπεκας φησὶ καλεῖσθαι οὐκ ὀρθῶς.

[193] Τῆς δὲ γυναικὸς τὸ γεννητικὸν μόριον, μήτρα, καὶ ύστερα· Ἰπποκράτης δὲ καὶ δελφῦν, καὶ γονήν καλεῖ. [194] Καὶ αἱ ἐπὶ τὰ ἄνω ἐνθεν καὶ ἐνθεν ἐκφύσεις, κεραίαι, καὶ πλεκτάναι, καὶ τὰ ἀνέχοντα αὐτὴν ἀγγεία ἑκτὸς. [195] Καὶ τὸ μέσον καὶ ἀνωτάτω, πυθμήν· καὶ τὰ ἐκατέρωθεν, ὅμοι· καὶ τὸ ἄκρον, αὐχήν καὶ τράχηλος· τραχήλου δὲ τὸ στόμα, ὁ πρῶτος πόρος· Ἰπποκράτης δὲ καὶ ἀμφίδιον ὀνομάζει ἀπὸ τῶν κυκλοτερῶν σιδηρίων τῶν πρὸς τοὺς ἀρότροις.

[196] Εἶτα τὸ κούλωμα τὸ ἐφεξῆς, γυναικεῖος κόλπος, καὶ αἰδοῖον τὸ σύμπαν σὺν τοῖς ἐπιφανέσιν. [197] Περὶ δὲ τοὺς διδύμους εἰσὶ χιτώνες ἐλυτροεἰδεῖς καὶ δαρτοῖ, καὶ νεῦρον
εἰς τὸν δίδυμον καθήκον κοίλον, δ καὶ ἀορτήρ καὶ κρεμαστήρ καλεῖται, καὶ φλεβία διὰ ὅν τρέφονται οἱ δίδυμοι· καὶ ταῦτα τρέφοντα τὸν δίδυμον καλεῖται.


[204] Αἱ μὲν φλεβῖς ἐνταῦθα ἐρρωμέναι καὶ ἐγγυτάτω τὴν φύσιν ἀρτηριῶν· αἱ δὲ ἀρτηρίαι ἀσθενεῖς, καὶ ἐγγυτάτω τὴν φύσιν φλεβῶν. [205] Ἐπανθισμοῦς δὲ πρῶτος μὲν ὁ οἶδα ὄνομασε Διονύσιος ὁ τοῦ Ὀξυμάχουν καὶ φησιν ὁ Εὐθύμιος δέκα την φλέβα, ἐπανθισμὸν. [206] Ἐμοὶ δὲ δοκεῖ Διονύσιος ἐκοίκος μὲν τι φλεβὶ τὸν ἐπανθισμὸν ὄνομαζειν, οὐ μὴν αὐτόφλεβα, ἀλλὰ τι ἄλλο ἐπίκτητον ἀγγείον αἵματος. [207] Δηλοὶ δὲ
πολλάκις ἐν τῷ αὐτῷ φλέβα, καὶ ἐπανθισμόν, καὶ ἀρτηρίαν ὀνόμαζον· οὐ γὰρ ἂν, εἰπερ ταύτον ἢν φλεβῆ, οὕτως ὀνόμαζεν· εἰ γε μηδὲν ἔστιν ἔτερον παρὰ τὴν φλέβα ἐπανθισμός, ἄλλα ἑκεῖνος γε ὡστε, καὶ οὕτως ἐκάλει.

[208] Τὰς δὲ ἀρτηρίας τὸ ἀρχαιότατον φλέβας ὀνόμαζον· καὶ σφύζειν ὑπότε λέγοιεν τὰς φλέβας, ἀρτηρίας ἐβούλοντο καλεῖν· ἀρτηρίαν γὰρ τὸ σφύζειν ἔργον· ἔλεγον δὲ καὶ ἄορτὰς καὶ πνευματικὰ ἄγγεια, καὶ σήραγγας, καὶ κενώματα, καὶ νεῦρα. [209] Αορτὴν δὲ Ἀριστοτέλης ἐξαιρεῖται τὴν ἄρτηρας τὸ ἀρχαιότατον φλέβας, καὶ σφύζειν ὁ πότε λέγοιεν τὰς φλέβας, ἀρτηρίας ἐβούλοντο καλεῖν· ἄρτηριῶν γὰρ τὸ σφύζειν ἔργον· ἔργον· ἔλεγον δὲ καὶ παχεῖας καὶ πνευματικὰ ἄγγεια, καὶ σήραγγας, καὶ κενώματα· ὡστε καὶ ἁμαρτάνοις.


[216] Σὰρξ δὲ τὸ ἐν τοῖς σπλάγχνοις μεταξὺ τῶν ἀγγείων πεπηγῆς, ἁμα ύφη τις καὶ πλήρωμα τοῦ πλέγματος τῶν ἀγγείων, ὡς μὴ κενὰ τὰ μεταξὺ· καὶ ἢ τῶν μυῶν, ἵνωδης, καὶ στερέα· καὶ ἢ ἐπὶ τοῖς ἐλκεσι καὶ τοῖς κοιλώμασι τῶν ὀστῶν ἀρτι πηγνυμένη. [217]
Μυελός δὲ ὁ μὲν ἐν τῇ ῥάχῃ, ῥαχίτης· ὁ δὲ διὰ νότου, νωτιαίος, καὶ ἡ περὶ αὐτὸν μήνιγξ, νωτιαία· ὁ δὲ ἐν τῷ κρανίῳ, ἐγκέφαλος· ὁ δὲ ἐν τοῖς ἄλλοις ὀστέοις, όστίτης, ἕαν τε ἐν μεγάλοις ἐνη κούλωμασιν ὀσπερ ἐν μηρῷ, καὶ ἐν βραχίονι, ἕαν τε ἐν σήραγξιν, ὀσπερ ἐν πλευραῖς καὶ κλεισίν.

[218] Αἷμα δὲ ὁ θερμότατος καὶ ξανθότατος χυμός. [219] Φλέγμα δὲ τὸ λευκὸν καὶ παχύ, καὶ Ἡσυχῇ ἄλυκὸν περίσσωμα. [221] Τούτο δὲ ὅταν αὐανθή, μέλαν φλέγμα. [222] Χολὴ δὲ, ἔθρωθα μὲν, τὸ πικρὸν καὶ ξανθὸν περίσσωμα· πρασοειδῆς δὲ, ἡ ὀξεία καὶ υπόχλωρος· ἔκω δὲ τῷ κύστει νιτρῶδες ὅταν δὲ, ὡς γευσαμένως φαίνονται· ἄλλους δὲ, πρασοειδῆ μὲν τῇ

[223] Ἀλλοὶ δὲ τὸ μέλαν αἷμα, μέλαιναν καλοῦσιν. —Τὰ δὲ ὑπόλοιπα περίσσωμα, σίκολος μὲν ἡ τοῦ στόματος ύγρότης· μύξα δὲ τὸ ἄλυκον περίσσωμα τοῦ ἐγκεφάλου· ἱδρώς δὲ ἡ κατὰ πάν τὸ σῶμα ύγρότης· οὖρον δὲ τὸ ἐν κόστει νεφρῶδες ύγρὸν κατιόν· φύσα δὲ τὸ ἐν τοῖς ἐντεροῖς περισσὸν πνεῦμα· κυψελῆς δὲ ὡς ἐν τοῖς ὦσι ρύπος· καταμήνιον δὲ ἡ τῶν μιᾶς τροφῆς, καταμήνιον οὐ καλεῖται, ἄλλα ῥοῦς. [224] Γάλα δὲ ὡς ἐν τοῖς μαστοῖς πέψις τῆς τροφῆς. [225] Σπέρμα δὲ καὶ θορῇ καὶ γόνος τὸ αὐτὸ, ἡ ἐν παραστάταις γεννητικῆ πέψις ὡς κυψελῆς τροφῆς καὶ τροφῆς.

[226] Πραξιγόρας δὲ ἴδιον τρόπον τοὺς χυμοὺς ύμνωμαξε, γλυκῶν, καὶ ἰσόκρατον, καὶ υπόκρατις· τούτους μὲν κατὰ τὴν ἱδέαν τοῦ φλέγματος· ἄλλους δὲ ὡς ἑξίν καὶ νεφρώδη, καὶ ἄλυκὸν, καὶ πικρόν· τούτους δὲ ὡς γευσαμένως φαίνονται· ἄλλους δὲ, πρασοειδῆ μὲν τῇ
χρόνος, λεκιθώδης δὲ τῇ παχύτητι· άλλους δὲ, ξυστικόν μὲν, ὃτι ζύσθαι παρασκευάζει· στάσιμον δὲ, ὃτι ἐν ταῖς φλεγίν ενέστηκε, καὶ οὐ διαδίδοντι εἰς τὴν σάρκα, διὰ τὸ λεπτοὺς καὶ φλεβώδεις εἶναι τοὺς στασίμους χυμοὺς. [227] Τὸ δὲ ὅλον, χυμὸν ὁ Πραξαγόρας πάν τὸ ύγρὸν καλεῖ· ὁ δὲ Μνησίθεος, τοῦτον μὲν χυλὸν, τὴν δὲ γευστικὴν ὁμάμιν, ἐὰν τε ἐν ἔριφῃ, ἐὰν τε ἐν ύγρῷ ἂν, χυμὸν. [228] Θερμαίαν δὲ καὶ πνεύμα Ζήνων μὲν τὸν ἀνθρώπουν φησιν οἱ ἄρχοντες καὶ ἀπαντομένον· θερμὸν δὲ τὴν ἐκτριψίν τοῦ πνεύματος· οἱ δὲ ἀρχὴν τινα ζωῆς. [229] Τὸ δὲ βρέφος περιέχεται χιτῶς, τῷ μὲν λεπτῷ καὶ μαλακῷ· ἀμμιοῖν αὐτὸν Ἐμπεδοκλῆς καλεῖ· ἐντεῦθεν, μοι δοκεῖ, καὶ ἢ Ἐπείγεια Αμνίας ἐπωνόμασται, μᾶλλον περ ἢ ἀπὸ τοῦ ἐν Κρήτῃ λιμένως. [230] Ἐωρώμεν δὲ ἀνατέμνοντες τοῦτον τὸν χιτῶνα περιέχοντα ύγρόν, πολὺ δὴ καθαρύτερον τοῦ ἐν τῷ χορίῳ· καὶ λογιζομένοις μὲν ἐφαίνετο ὅσπερ ὁδρώς εἶναι τοῦ βρέφους, τὸ δὲ διὰ τοῦ ὑπάρχου ὁσπερ οὖρον εἰς τὸ χορίον ἐκδιδόναι. Ἀλλὰ ὁ μὲν ἀμμιοῖς ἐνδοθεὶς ἦν καὶ περὶ τῷ βρέφει· [231] τὸ δὲ χορίον ἐξῳ καὶ περὶ τῇ ὑστέρᾳ τραχύς καὶ φλεβώδης χιτῶν. [232] Ἐκ δὲ τοῦ χορίου ἐκπεφύκει οὗμφαλός, δύο φλέβες καὶ δύο ἀρτηρίαι, καὶ πέμπτος οὗ καλουμένος ύπαρχός, ἀγγεῖον βραχὺ καὶ ἀμφίστομον ἀπὸ τοῦ πυθμένος τῆς κύστεως εἰς τὸ χορίον ἐμβάλλων.

[233] Τὰ μὲν πλείστα τοῦ ἀνθρώπου οὕτω χρῆ καλεῖ· εἶ δὲ τὶ ἐν τούτοις καὶ παραλέλειπται, οὐ μὴν δίκαιον τὰ πολλὰ ἀτιμᾶσαι διὰ τίνα ὀλίγα παροφθέντα.
Translation of Rufus’ *On the Names of the Parts of the Body*

[1] First of all, what must you know to practice cithara playing? Being able to touch and name each one of the chords. [2] And what must you know to practice grammar? Discerning and naming each of the letters. [3] The same is also true for the other arts, for which we begin to learn the names: the metalworker, the leather-cutter, and the carpenter. First one learns the names of iron and carrying-pails and all of the other objects used for that craft. [4] And what about the other more serious skills? Do they not begin with the discovery of the names of things? [5] What do you learn first in geometry? Knowing and correctly naming the point, the line, the plane, the surface, the shape of a triangle, the circle, and other similar things.

[6] Do you also want to learn medical science, beginning first with nomenclature? Do you want to list each of the parts of the body, and then other matters which follow from this discussion? Or does it seem sufficient to you that I simply show you what I ought to teach you, as if you were deaf? [7] This does not seem better to me. It will not enable you to learn it yourself or to teach it to others. [8] At least, that is how it seems to me. [9] If you listen and look at this slave, you will, first of all, commit to memory the external, visible parts. And then, when it becomes necessary to discuss the internal parts, we shall investigate the animal (*viz.* monkey) which appears most like man. I will try to teach you each of their chief parts, so that nothing is hidden from you. However, not everything is
shared between the two animals. [10] And long ago, one learned these things best on man.

[11] The largest parts of the body are the following: the head, the neck, the trunk, the arms, and the legs. We call the “thorax” not only the part which extends from the collarbones to the navel, but that which extends from the collarbones to the genitalia. [12] One calls the “head” either that which is covered in hair or that which is part of the face. [13] The front of the head is the area opposite the hair; the occipital bone is the area in back. On either side of the crown are the korsai or temples. The topmost point is where the hair attaches most firmly to the head. That which is situated below the crown is the forehead. [14] We call “whiskers” hair located on the sides of the temples and the “mane” hair that falls at the nape of the neck. [15] The lowest hair on the front of the face, “the brow,” is that which we draw together overtop of our eyes when we think or feel ashamed. [16] The other hairs which we see under the fleshy rim of the eye are called “eye brows.” [17] They are on the furthest extreme on the front of the face. [18] The “mesophruon” is the space between the brows.

[19] Below the eyebrows are the eyelids --one higher, one lower. Among the hair which emerges here are the bristles at the edge of the eyelids and the lashes. [20] The furthest ones which touch one another when we sleep are called “crowns” or “ridges.” “The groove” is the part atop the upper lid. [21] The extreme depressions near the upper and lower lids are the corners of the eyes. [22] The largest of these is near the nose; the
[23] The parts in the middle of the eye are the eyeball and pupil. [24] And they call “the socket” the image that appears in the eyeball.

[25] The iris is that which extends from the pupil to the white part of the eye. They say that the color of the iris is black, tawny, bluish-green, or bluish-gray. [26] “The crown” (ciliary muscle) encircles the black and separates it from the white. [27] It is a circle and the link for the membranes of the eye; these membranes have two names, since they have two natures. The external, horn-like coating of the eye extends from the midpoint to the iris and is so named because it resembles polished horn. All the rest of the eye which we see is the white part, and it is in no way like the middle of the eye -- either by its structure or by its color. [28] The part that lies below it is called the epidermis. And among both the young and the old, during illness or when the conjunctivae are swollen, one sees a reddened area here, which appears dark and puffy. [29] Through the dissection of the monkey, we can discuss how to name all the other membranes of the eye. [30] The bony projections under the eyes are called “the anterior margins;” the others are called “black eyes.”

[31] The nose extends from the midpoint of the face. [32] The openings of the nose are called “sinuses” and “nostrils.” [33] The Athenians call the phlegmatic secretions of the nose muxes, while Hippocrates calls them muxa. The Athenians refer to the condition of having nasal secretions as a “cold.” [34] The cartilaginous section between the nostrils is called “the partition of the nose.” [35] And the bony projection, with cheeks on either side, is called “the bridge of the nose.” [36] The endpoint of this bony projection forms
“the wings” on either side of the nose. These wings stir during extreme shortness of breath, but they can also be willed to move. [37] “The column” is the fleshy part in front of the partition of the nose which reaches down to the lip. [38] The end of the nose is “the sphere.” [39] The philtrum is the groove below the partition of the nose and on top of the upper lip. [40] The whole area below the nose and above the lips is “the base of the nose” (infratip lobule). [41] There are two lips whose outermost projections are called “lobes of the lips.” The meeting point of the lips is the front of the mouth. [42] The depression below the lower lip is the labret (numphe).

[43] The act of hearing is accomplished by the channel of the ears. Aristotle reports that the lobe, the dangling part of the ear, is the only one to have a name; the other parts are unnamed. [44] But some doctors have named the other parts. “The wing” is the broad area which is inclined upwards. From there, the helix marks out the periphery of the ears. The anti-helix is the prominence on the cavity in the middle of the ear. “The conch” is the cavity in front of the anti-helix. The tragus is the prominence opposite the conch, by the edges of the temples. And the anti-lobe is the somewhat rough area at the end of the helix.

[45] They call “the face” the entire area on the front of the head. [46] The cheeks are the raised sections of the face under the eyes which blush when we feel embarrassed. [47] Coming from the cheeks are the ridges; they are called either the “jaw-bone” or simply the “jaw.” The jaw is also known as the upper and lower mandibles. [48] The point of the lower jaw is known as the geneion (chin) or anthereon (chin). The fleshy part under the
lower mandible is called the *leukania* (throat). Others call this area the *antherion* (throat) and label the *leukania* the cavity near the collar-bone. [49] The first appearances of a beard under the temples are called “whiskers.” The hairs that grow on the upper lip are called a moustache. Those on the point of the chin are called “bristles.” And those under the jaw are called a “goatee.”

[50] The mouth is both the front opening of the lips and the connected opening which extends to the pharynx. [51] In the mouth, among other things, are the teeth. Some people also call them *krantarai*. The four teeth in the front are the incisors. The canines are next, one on each side. The molars or grinder-teeth come after the canines and number five on each side. The wisdom teeth are the most internal and furthest back. They are so called because they grow on either side when we begin to acquire wisdom. [52] The upper jaw is equipped for these teeth; the lower jaw is similarly equipped and has the same name. [53] The frenulum is the joint between the upper and lower jaw. [54] “The tables” are the flat part of the molars. [55] The sockets or “racks” are the hollows of the jaw, to which the teeth attach. [56] The gums are the flesh around the roots of the teeth. [57] The “root” of the tongue is the point from which it extends. The muscular part within the mouth is called the tongue. The connection point is the throat. “The yokes” are on both sides of the tongue. The *hypogloottis* is the part in the back.

[58] The epiglottis is posterior and covers the larynx, so that nothing chances upon the lungs when we drink. But it is raised when we breathe, so that nothing hinders respiration. [59] “The sky” or palate is the vault of the upper jaw. [60] “The pillar” or
uvula is the protuberance projecting from the palate. [61] Aristotle calls it a “grape carrier” because, when it is inflamed, it seems like a bit of grape is suspended from it. But the label “grape” should not be used for the body part, but rather the disease associated with it. [62] The pharynx or *pharygethron* (throat) is the entire open space used for swallowing. [63] Homer wrote these verses:

Wine and human smoke escape from the pharynx. 59

It is not the food and drink which the Cyclops releases from his throat and lung. That would be amazingly unheard-of and senseless.

[64] The fleshy and glandulous outgrowths (tonsils) located on each side of the pharynx are known alternatively as: (1) glands issuing from the isthmus, (2) glands on opposing ends, and (3) apples. [65] There are four glands: those located on either side of the top of the larynx and those which are adjacent and lower down (amygdala).

[66] After the head is the neck; it is also called “throat” and “gullet.” The base of the neck (hypodeiris) is the endpoint of the front of the neck. [67] The front part of the neck, called the throat or the trachea, is the vessel through which we breathe. The prominence of the throat is the larynx. On the back of the neck are the tendons. [68] Homer calls the hollow near the collar-bone the “white area,” while doctors call it the throat and jugular.

59 *Od.* IX.373-4.
[69] The parts descending from the tendons (of the neck) to the upper arms are the shoulders. [70] The shoulder, the head of the upper arm, is near the shoulder blade and the entire joint of the arm. [71] The socket of the shoulder is the hollow of the shoulder blade. The shoulder blades are the broad bones resting upon the back. The projection of bone in the middle of the shoulder blades is the spine. [72] The point of the shoulder is the link between the collar bones and the shoulder blades. [73] Eudemius says that it is a small ostellette. [74] The clavicles are the bones under the neck. Fastened near the chest, they prevent the shoulders and shoulder blades from falling together, as they do in other animals. For they (the animals) do not have clavicles. It is for this reason that man has the broadest chest.

[75] The armpit is the hollow under the shoulder, where the shoulder most often slips. [76] It is not Greek to use the word “underarm” for “armpit.” But for someone who hides something under his armpit, it is possible to say that he carries it under his underarm.

[77] The arm comes immediately after the shoulder. The curvature by the shoulder, the prominence which extends towards the forearm, is called the head of the arm. Certain people following Hippocrates wrongly consider it to be an outgrowth of the forearm and also the head of the arm. [78] After the arm comes the elbow, which is both the whole joint and the point upon which we rest when we prop ourselves up. [79] Some authors call it the olekranon (point of the elbow). The Dorians, who live in Sicily call it the kubiton. Epicharmos uses the word kubizein to describe striking with the elbow. [80] Of the bones of the elbow, the inferior one is the ulna and the one above that is the radius.
These bones terminate at the wrist. [81] After the wrist, are the flat, fused parts of the hand, the metacarpus and tarsus. Following these are the fingers.

[82] “Hand” implies everything below the wrist with which we take hold of something.
[83] The largest of the fingers is set apart from the others. The first of the four remaining fingers is the pointer finger. Then come the middle finger, the one adjacent to the middle finger, and the little finger. [84] The bones of the fingers are called the “sticks” and phalanges. The first joints are called the procondyles; then the condyles, and lastly the metacondyles. [85] “The roots” are the origin of the nails. Nails are the “grapes” and highest points on the outer reaches of the fingers. [86] The chest is the fleshy area which, after the big finger, arises under the hollow of the hand. [87] The palm is the fleshy space between the pointer finger and the large finger, below the hollow of the hand. The “under-hand” is the area under the four fingers. [88] It seems to me that Hippocrates calls the “palm” the entire spread of the hand.

[89] After the clavicles, the chest is the middle region which appears next. The sternum is the area towards which the sides of the body extend. [90] The back is the part in the rear which extends from the neck to the midriff. The midriff extends between the back and the loins, towards the diaphragm. The loins end at the tailbone. [91] The fleshy prominences on the chest are called breasts and teats. The end of the breast is the nipple. [92] The first growth of the breast during puberty is called a “bean.” When it is fully developed, it is called a “swelling.” [93] This terminology is only appropriate for women.
[94] One labels “the side” the entire area under the armpit. The sides are the bones, and the intercostal space is the area between the bones. The “false sides” are those which do not arrive directly at the sternum. [95] The depression under the chest is called the mouth of the belly. Some call it the “fore-heart”, and others, the “heart.” And the ailments there are known as stomach wailing and stomach pain. [96] The cartilage marks the ends of the false sides. And the “under-cartilege” are the muscles beneath the cartilage.

[97] The belly or stomach comes next. The “over-belly” is the skin atop the stomach. [98] The navel is in the middle of the belly; it functions as the endpoint of the veins, through which the embryo is fed. In the middle of this hollow is the point of the navel. [99] The skin stretching under the navel is called “old,” because it is a sign of old age when that skin wrinkles. [100] The part under the navel is called the lower belly and abdomen. Some call what extends from the abdomen to the genitals the pubic region and pubic bones; others call it the pubis.

[101] Of the genitals, the part which hangs down in men is called the “stem” and shaft. That which does not hang down is called the base and the neck of the bladder. And the medial line is the perineum. Others call it the “penis” [102] The extremity of the organ is the glans, and the skin around it is the foreskin. The extremity of the foreskin is the “endpoint.” [103] The channel through which sperm and urine escape is called the ureter, or the passageway of sperm. But it is not necessary to call this channel the “ureter.” For ureters are passages for other things, not just channels for the flow of urine.
The testicles are within the loins. It makes no difference whether one calls them “twins” or “testicles.” The upper part of the testicles is called the head; the lower part, the base. The area hanging down from the loins is the scrotum. Athenians refer to someone who is always slack as “having a hanging scrotum”. The region between the scrotum and the neck of the bladder and thigh is called the perineum.

As for the genitals of a woman, the triangular end of the lower stomach is called the pubic region. Others call it the pubis. The cleft is the division of the genitals. The muscular area of flesh in the middle is the “young girl” or “myrtle berry.” Some call it the “under-skin” and others, the “clitoris.” And they call “clitorizing” the lustful touching of this area. The myrtle lips are the fleshy areas on either side; Euryphron also calls them crags. Now we use the words “wings” for “myrtle leaves” and “young girl” for myrtle.

The spondyles are the bones of the spine. Homer also calls them vertebrae. The bony growth of the spondyles are call the backbone. The last bone at the bottom of the back is a sacred bone. The extremity of this bone is called the coccyx. The areas under the sides are known as the iliac cavity and flank. Then come the bones of these cavities, and their hollows are called cotyles.

The fleshy area below the lower back, upon which we sit, is called the buttocks. Others call them gluteal muscles. The area below the gluteals is called the juncture
between the buttocks and thighs. [117] The groin is the area in front of the thighs by the pubis. [118] The sciatic nerve is the nerve near the hip and the entire joint. [119] The sides of the thighs are the internal region of the thighs, and the mid-thighs are located between the thighs. [120] The word “rectus femoris” describes the muscles above the knee; while “patella” describes the bones above the knee. Hippocrates calls it the epimulis. The knee is the joint of the thigh above the tibia. [121] And the hamstring is the posterior region which we use to bend the knee. [122] The gastrocnemius is the large muscle on the back of the leg, from which the broad nerve (the Achilles tendon) extends towards the heel.

[123] Of the bones of the leg, the tibia is internal. And the bone on the foreside of the leg is the shin. The tibia is on the outside. Herophilus calls the tibia the “rod of the leg.”

[124] The end of both these bones, the area near the feet, is called the sphron (ankle) or -- incorrectly -- the ball of the ankle. For a man’s foot also has an ball under the ankle, but it is not visible. [125] The heel is the posterior area surrounding the foot, while the “field” or sole is the broad area in the front. The chest is the lower region of the foot, below the arch, from which the digits emerge. [126] Nothing prevents our calling both the toes and their analogue on the hand “digits.” For the same name is equally applicable to both.

[127] These, then, o child, are the visible parts -- along with their underlying bones -- that it is necessary for us to name. We attempt to name the internal parts by dissecting the monkey, since monkeys are most similar in nature to man -- in terms of their bones, muscles, viscera, arteries, veins, and nerves. The second most similar are the animals
which have feet divided into many digits. Third are the cloven-hoofed animals that have a double row of teeth. Those that do not have cloven-hoofs and have only a single row of teeth are most unlike man. [128] If we have already described these parts along with the visible ones, then it is not necessary to discuss them a second time.

[129] Next you see the membrane under the skin of the head. This is called the pericranium. We use the word “periosteum” to describe this same membrane on other bones. [130] The junctures of the cranial bones are called sutures; they are like the joining of two saws. One suture is circular and circumscribes the coronal suture. Another is the lamboidal suture, and a third is at the top of the head (sagittal suture). [131] In some people, this suture passes through the coronal suture and arrives finally at the space between the eyebrows. [132] These last two sutures join together with the bones of the temples like scales. [133] The names of these sutures are not old, but the current names were given by certain Egyptian doctors who speak Greek badly. The coronal is the suture at this spot. The lamboidal circumscribes the back of the skull, having joined at the middle of the head. And the “scales” are located around the temples.

[134] These doctors named parts of the cranial bones, which were once nameless. I will not pass over these names because they reveal the current conventions of doctors. [135] The diploid is the spongy area between the cranial bones, from which the nose extends. [136] The many openings in it are called the ethmoid bones. Doubtless, it is through this structure that sneezes and mucus escape the nose. And some even say that we draw breath to the brain with it.
[137] The bones near the ears are known to be stony in form, because they are most durable. [138] On each side there is also a hard and whitish bone, just like the head of the hand, through which the channels of the ears pierce. [139] Some call the stony projections which reach down to the nape of the neck the “mastoid bone,” but they do so incorrectly. For the projections are hollow, not firm, as their name suggests. [140] The projections which extend from the ears towards the cheekbones are called the arcus zygomaticus.

[141] The muscles in the hollows of the temporal bones are called temporalis muscles. And those around the lower jaw are the masseter muscles. [142] The slender and long prominences, which descend towards the pharynx are called styloid processes. [143] Eudemus likened them to a cock’s spur, but he later abandoned that name.

[144] There are many orifices that run through the head. All are unnamed except two, and these are called “blind.” Doctors differ amongst themselves whether it is necessary to call them this Some think the orifices are the location through which the spinal fluid passes to the vertebrae; others think they go towards the ears, not far from the joints of the lower jaw. [145] But the orifices are neither of these, and they do not spread in different directions. They form a large column of the hollow below the ethmoid bone. And across all these orifices, we see nerves that have branched out; this is apparent in dissections. [146] It seems like they should be called blind because they are not branched directly.
The brain is located within the head, and the meninges cover it. One of the meninges is thicker and stronger and is attached to the bone (dura mater). The other is thinner and strong -- but less so -- and is attached to the brain. The upper part of the brain (cerebrum) is called “varicose,” and the lower and posterior part of the brain is the “base.” The part that extends from the base is the cerebellum. The hollows are called the belly of the brain (ventricles). The part internally covering the ventricles is the choroid plexus. Herophilus also calls it the choroid membrane. The offshoots of the brain are the sensory and motor nerves, and through these, sensing, motion, and indeed the entire activity of the body, is accomplished. Of these nerves, there are some that emerge from the spinal fluid and from the meninges surrounding them. One can describe equally well with the words “fluid of the back” and “spinal fluid” all the fluid traveling through the vertebrae.

Of the ocular membranes, the first one that is apparent is the cornea. Among the others, the second, is the grape-like membrane (choroid membrane). And after that, then we find a fetal membrane. The name “grape-like” is given to the former because, on the outside, it seems smooth like a grape, and on the inside, it is rough. The second membrane, the part under the whites of the eye, is so-named because it is vascular like the membrane surrounding the fetus. The third membrane, the crystalline, surrounds the vitreus. Its ancient name is the “arachnoid membrane” because of its fineness. Herophilus likened it to a drawn-up net, and some other doctors called it net-like. The fourth membrane surrounds the crystalline vitreus. Initially, it was nameless, but later it
was called “lenticular” because of its shape and “crystalline” because of the liquid within it.

[155] It seems to me that Hippocrates calls “tooth” the first vertebra of the neck. The bone which is under the tonsils and which surrounds the head of the larynx is called by some doctors the “hyoid” because of its shape, which resembles the letter upsilon. Herophilus calls it the “judge” because it convenes around the tonsils. [156] The prominence of the second vertebra, which is located higher up and in front, is called “pyre-shaped.”

[157] The stomach or esophagus is the area through which food and drink travel to the belly. [158] And the nerves on either side (pneumogastric nerves) of it are called “chords.” [159] The other sensitive and fibrous nerves are similarly called chords. The entire passageway of the windpipe (arterial trachea) is called the bronchus. And the extensions towards the lungs are called bronchiae, caves, and aortai.

[160] The heart is the principle of heat, life, and the pulse. The upper part of it is called the head; the outmost and sharpest part is the base; and the hollows are called ventricles. [161] The thicker cavity on the left (left ventricle) is called arterial, and the one on the right (right ventricle) is called “venous.” The right ventricle is more capacious than the left. [162] The wing-like hollows on either side of the heart, which are soft and move with the pulse in the entire heart, are called the cardiac ears. [163] The pericardium is the membrane surrounding the heart.
[164] The partitions of membranes in the thorax, which are located in the lung, are called hollows of the thorax. [165] The pleura are the membranes over the lungs. [166] And the part separating the organs in the chest from those below it is called the diaphragm or phrenes (thorax). [167] Among the glands, of which there are many kinds, some are near the neck. Others are located under the armpits, in the groin, and in the mesentery. These ones are fleshy, somewhat fatty, and brittle. [168] The thymus is one of these glands, originating at the head of the heart and drawing towards the seventh vertebra of the neck, at the outskirts of the bronchus near the lung. It is not present in all animals.

[169] Under the diaphragm is the stomach or the upper hollows. Next, the first outgrowth of the intestine is the pylorus. Then we find the intestine jejunum (“hungry”), so named because it is empty of all food. [170] The thin intestine follows this and has two outgrowths. One is called the caecum because, truthfully, it is blind. The other is called the colon and the lower stomach, or in Homer, the lower belly. [171] The link among the entire intestine is the mesenterium or mesaraion, because long ago, the entire intestinal area was called the “narrow” stomach. And it is from this word that we have our current appellation. [172] In the colon, the right hand side (rectum) heads towards the seat or foundation. [173] The omentum is an offshoot from the periphery of the stomach, which, together with another part of the intestines, covers it. [174] And the membrane which extends from the diaphragm and covers the entire intestine is called the peritoneum. [175] The fatty and glandular flesh which lies near the first outgrowth of the intestine is the pancreas.
[176] On the right of the stomach is the liver. [177] The part of the liver touching the diaphragm and peritoneum is convex, while the part lower down touching the stomach is concave. [178] And on the large lobe is the vessel of bile. The narrow, central part of it is the neck; the part at the bottom, is the base. [179] The entrance of the liver is the vein through which food enters. [180] During the inspection of sacrificial victims, these entrances are called alternatively “gates,” “tables,” “daggers,” and “nails.” They are also present in humans, but they are indistinct and hardly apparent, and it is not necessary that they have a medical name.

[181] The spleen is located to the left of the stomach. The thick and highest part of it is called the head. [182] On the outer edges of the lungs are the two kidneys; from the kidneys, arise the two ureters, which travel towards the bladder. [183] The bladder is the organ into which urine flows from the kidneys and ureters. After the bladder, come the neck, base, perineum, and other parts which I have already named.

[184] There are four spermatic vessels; two are varicose, and two are glandular. [185] They are also called “generating veins.” The parts of the varicose vessels which approach the testicles are called “assistants.” But among some authors, all the vessels are called parastatai without distinction.

[186] It is necessary to make an investigation into these same parts in women, as we did in men. It did not seem to Herophilus that women had vascular assistants. But we see that
on the uterus of ewes, vascular vessels emerge from either side of the testicles. They open into the hollows of the uterus (fallopian tubes), and if we press these hollows, a slightly mucosal fluid runs out. It is a great supposition that these are spermatic vessels of the vascular kind. [187] Perhaps dissections will show what sort they are.

[188] The muscles inside of the loins are the psoas; they are the only muscles in the entire spinal area which are located near the loins. [189] Some call them the “mother of nerves,” while others call them “foxes.” [190] This last term is used in a sentence of Cnidiias: “If there is nephritis, the following signs will be present: if the urine is thick and full of pus; and if pain is present in the loin, flanks, groin, and pubis, it is in the ‘foxes.’” [191] From this sentence, it is clear that we need to know the range of terms in order to recognize how they are named in various instances. [192] Cleitarchus incorrectly labeled the psoas as follows: (1) muscles external to the spine, (2) the mother of nerves, and (3) foxes.

[193] The generative part of a woman is called “the mother” or “uterus.” Hippocrates also called it womb and generator. [194] The prominences on the top of the uterus on both sides are called horns and spires; these terms are also used for the external vessels. [195] The central and raised area is the base, and the “shoulders” (uterine wall) are on either side. The topmost point is the isthmus or neck, and the opening of the neck is the first passageway (external orifice). Hippocrates calls it the “plow,” because it is like the circle of iron on a plow.
The next opening is the female sinus (vagina), and we call “shameful” the entire area around it. Around the woman’s “testicles” are case-like and incised membranes. A hollow nerve also gives way to the testicles. This nerve is called the “cord” and “suspension.” We also encounter veins which carry food through them; these are called the nourishing testicular veins.

As for the other veins, we can truly call “veins” those vessels which are narrow and contain blood; all the large vessels are called “hollows.” Later on, doctors were in the habit of calling the “hollow” the vein which sent extensions from the liver to the kidneys. Praxagoras says that this area is the point of origin of fiery heat, and he wants it, alone, to be called the hollow. But others use the term for the vein which stretches upward from the diaphragm to the heart. And there are some who use the word “hepatic” for both of these veins. But unlike the liver, the spleen has no offshoots on the left, extending either upwards or downwards. Those who make this claim are incorrect. The veins which extend to the spleen are narrow and, in fact, end at the spleen. Philistion of Italy, following the custom of the Dorians in that area, called “eagles” certain veins which extend through the temples on the head. Hippocrates called “little dragons” the veins coming straight from the heart. And Herophilus used the phrase “arterial veins” to describe the thick and large vessels traveling from the heart to the lungs.

Veins in the lungs behave in a different way than veins located elsewhere. The veins in the lung are hardy and are similar in nature to arteries, but the arteries there are
feeble and are similar to veins. [205] Dionysius, son of Oxymachus, was the first person to my knowledge to “efflorescing veins”, and Eudemus says that we call them by this appellation. [206] But it seems to me that Dionysius was using the word to describe something similar to a vein -- not a vein itself -- but perhaps some vessel newly filled with blood. [207] This is clear when he frequently describes with the same word the veins, *epanthismos*, and artery. But it makes no difference whether he uses this word or “vein,” if indeed they describe the same thing. If veins and efflorescing veins are not different, Dionysius used this word and names them accordingly.

[208] A long time ago, arteries were called veins. And when we say that veins beat, we should be calling these vessels “arteries,” as it is the task of arteries to beat. They are also called aortas, pneumatic vessels, hollows, openings, and nerves. [209] Aristotle specifically named the artery which runs down the spine the “aorta;” it is the largest artery lying upon the spine. Praxagoras described it as “thick.” [210] Long ago, the vessels going through the neck were called “carotid” (sleep-inducing) because, when pressed, they would induce stupor and muteness. But now we know that these afflictions are not caused by the arteries, but by protrusions of the sensory nerves. And if we wanted to swap their names, we would not be amiss.

[211] The active and sensory nerves emerging from the brain and spine are *proairetika* (voluntary) and are called “cords.” [212] Others nerves bind the joints. The cords projecting from the nape of the neck, as well as the one escaping from the muscle (calf) to the heel (Achilles tendon) are called “tendons.” [213] Cartilage is located at the
periphery of the bones and is stronger than the nerves. [214] Delicate membranes are called “thin skin,” and thicker membranes are called “coverings.” [215] Congealed fat is the oiliest part.

[216] Flesh is the solid material in the viscera between the vessels. At the same time, it is also a sort of web and padding for the weaving of the vessels, so that there is no empty space between them. The flesh of the muscles is fibrous and sturdy. And that on top of sores or in the hollows of the bones is called a “thickening.” [217] The marrow in the spine is called “spinal marrow.” The marrow going through the back is called “dorsal marrow,” and its meninx is known as the “dorsal meninx.” The one in the head is the encephalitic meninx, and in the other bones, the collective term is “osteo-meninges.” Either they are located in the large cavities, like the thigh and arms, or they are in the small cavities, like the sides and collar bone.

[218] Blood is the hottest and most yellow humor. [219] Phlegm is a white, thick, and somewhat salty secretion. When it dries, it becomes black phlegm. [220] Bile is called “yellow” when it is a bitter and yellow-colored secretion; “leek-green” if it is sour and greenish; and “rust-colored” if it is excessively strong and unmixed. [221] Black bile is a repository of blood. [222] Some authors call black bile “black blood.”

[223] The other remaining secretions are (1) saliva, the fluid of the mouth; (2) mucus, the salty discharge from the brain; (3) sweat, the watery fluid from the entire body; (4) urine, the fluid in the bladder that is like carbonate of soda; (5) gas, the air that is formed in the
intestines; and (5) earwax, the accretions in the ears. Menses are the blood-red secretions that we see in women each month. When this discharge is white, it is called “flow,” not menses. [224] Milk in the breasts is the concoction of food. [225] Sperm, semen, and the seed itself, which are located in the testes are generative and are the result of the simultaneous concoction of pneuma and food.

[226] Praxagoras described the humors in a unique way: He labeled them mild, temperate, and transparent, according to the appearance of the phlegm. He also called them sour, carbonated, salty, and bitter, according to their taste. Based on color, they could be leek-green; and based on thickness, they could be like pulse-porridge or even “scraped.” Or they might seem churned. “Stagnant” are those humors that remain in the veins and do not pass through the flesh. Indeed, the stagnant humors are thin and reside only in the veins. [227] In general, Praxagoras calls the entire liquid area juice. Menestheos uses the word “digestive juice” for this, while he uses “juice” for the sense of taste – whether in dry or wet substances. [228] Xeno says that heat and pneuma are the same thing. But some doctors make a distinction and claim that pneuma is respiration, and heat is the rubbing of pneuma. Others say that heat is a certain beginning of life.

[229] The fetus is wrapped in membranes. One of these is thin and soft; Empedocles calls it the amniotic fluid. It seems to me that it is from this name that Eileithuia has the surname “Amnias,” not from the name of a port in Crete. [230] In dissecting this membrane, we have found a liquid surrounding it which is much clearer than that surrounding the fetus. [231] For anyone contemplating it, it looks just like sweat from the
fetus, and it travels through the urachus, like urine which arrives at the fetal membrane. The amniotic fluid covers the fetus from within, while the membrane is an external, rough, and venous structure. [232] The umbilical chord extends from the membrane. It has two veins and two arteries and a fifth vessel called the urachus. This last vessel is short and has two openings going from the base of the bladder to the membrane.

[233] These, then, are the majority of the terms that should be used to describe the parts of the human body. If anything among these has been omitted, it would be unjust to hold the bulk of terms in contempt simply because a few have been neglected.
Commentary on Rufus’ *On the Names of the Parts of the Body*

1-3 ὁ χαλκεὺς, καὶ ὁ σκυτοτόμος, καὶ ὁ τέκτων: Galen has a low opinion of these banausic professions, and tries to cast himself as a doctor at a higher level. But the reference to the “more serious skills” to follow does suggest that Rufus is also putting medicine on a higher level too. On the kithara in medical literature, see Galen. *De Semine*.2.3.581.7, and *De Tremore*.7.606.2; 7.606.4; 7.639.16.

5 γεωμετρία: Geometry, music, and grammar all would have counted as part of the most basic level of education.

6 Βούλει: It is unclear to whom Rufus is speaking, as no one is addressed directly.

9 ἀποβλέπων εἰς τὸν παῖδα τοῦτον: A clear sign that he is lecturing to students.

9 ζῶν: There are many references in Galen and others to the similarities of monkeys/apes to men. In particular, Galen’s *Anatomical Procedures*.2.218 suggests that the ape is like man in terms of his viscera, muscles, arteries, veins, nerves, and bones.

27. The modern term for this space between the eyebrows is the “glabella.”

29 ἐν τῇ διαρέσει τοῦ ζῶου: The implication here is that they have not yet dissected the monkey.
Ἀθηναῖοι: It is unclear whether this is a reference to Athenian doctors or simply a reference to Attic usage.

The philtrum is the medial cleft, which in many mammals goes from the nose to the upper lip. In humans and other primates, it is just a vestigial depression.

The labret, or depression between the upper lip and chin, is also referred to as the *numphe* in Galen. *UP.* 15.3. Hesychius of Alexandria, the 5th century CE author of a lexicon of rare Greek words, also uses *numphe* to refer to the lip. See Poll. 2.90 Hsch.

ἡ μὲν ὑπὸ τοῖς κροτάφοις πρώτη βλάστησις, ἴουλος: This discussion of a beard is indication that the slave to which Rufus is pointing is a man.

The slave’s whiskers are a sign of how Rufus divides up the stages of life: this seems to correspond to the ephebate.

σωφρονιστήρας: This is another sign of how Rufus views the process of aging. The last teeth to come in man are molars called 'wisdom-teeth', which come at the age of twenty years, in the case of both sexes. Cases have been known in women upwards of eighty years old where at the very close of life the wisdom-teeth have come up, causing great pain in their coming; and cases have been known of the like phenomenon in men too. This happens, when it does happen, in the case of people where the wisdom-teeth
have not come up in early years. According to Aristotle HA.2.1, males have more teeth than females.

53. The frenulum is the fold of tissue surrounding the jaw.

61. Arist. HA. 493a3

74 διὰ τοῦτο καὶ ἀνθρώπως πλατυστερνότατος: In his HA.II.1, Aristotle notes that the chest of man is broad, but that of all other animals is narrow

75 Μασχάλη: For other instances of this usage, see Aristoph. Lysist. 985; Plato. Georg.469d1; Tim.67b7, 77d6; Leges 789b3; and Plut. Quaest.Conv.612c-748a, all of which use maschala for hiding something under one’s armpit.

79 Δωριεῖς δὲ οἱ ἐν Σικελίᾳ: It seems like Rufus is referring to an earlier period in Sicilian history. He seems to be showing off a little here.

79 Ἐπίχαρμος: 540-450 BCE was a Greek dramatist and philosopher who originated the Doric or Sicilian comedic form. He is mentioned in Diogenes Laertius. Vitae Philos.8.178, Plato Gorgias 505e and Theaetetus 152e, and Hipp.De Morbis Popularibus5.1.20.1; 7.1.119.1.
85 ῥαγεῖς: This is the same word in Greek as used previously, though Rufus objected to its use above.

88 Δοκεῖ δὲ μοι Ἱπποκράτης πᾶν τὸ πλατὺ τῆς χειρὸς θέναρ ὀνομάζειν: This is corroborated in Hipp. De Fract. 4.11; 8.19; 14.3; 15.34; and 19.17.

89 The Hippocratic corpus uses μαστοῖ less frequently than τιτθοί. See De.Morb. 2.3.17.14 and Epist. 23.46 for the former and De.Morb. 2.1.6.22; 2.1.6.18, and Prorrr. 2.26.4; 2.26.10 for the latter.

92 κύαμος: Again, another section on the various stages of aging. See Hipp. Mulier. 1.46.8 and Hipp. Off. 3.290.5.

93 κυριώτερον δὲ ἐν γυναικὶ: A particularly gendered comment, but probably not much to be made from it. The reference here suggest that the slave is male, as if to acknowledge that what he is saying should not be applied to the slave’s body in front of the audience.

97 In the Hippocratic corpus, as in Rufus’ text, “γαστήρ” can mean both the belly of the digestive system or the womb of the reproductive system. In non-medical texts, we also find these two alternatives. See Herod. 3.32 and Homer Il. 6.55.
98 Ὄμφαλος: Rufus assigns a central status to the navel. Varro assigns this status to the genitals instead.

99 ὅτι ῥυτιδούμενον γῆρας σημαίνει: This usage is attested in Pollux. Onom. 2.170.2 and Orib. Coll. Med. 2.5.1.41.1.

101 τῶν αἰδοίων: It appears that the slave on display is both male and naked.

104 διδύμους δὲ ἢ ὀρχεῖς καλεῖν οὐδὲν διαφέρει: Indeed, the Hippocratic corpus uses both terms. For the former, see Epid. VII.452; Vict. I.6.504.14.22l and Nat. Puer. 7.540.19.17. And for the latter, see Epist. 23.46.

107 Ὁ δὲ ἀεὶ χαλαρόν, λακκοσχέαν τοῦτον Ἀθηναῖοι καλοῦσιν: This is noted in Lucian’s Lexiphanes 12.2.

111 κλειτοριάζειν: For this verb form, see Diog. Gramm. Paromiae 5.77.1 and Pollux. Onom. 2.17.5. Aristotle indicates an awareness of the clitoris at GA 728a32-4, though he never suggests its involvement in women’s sexual pleasure.

112 Εὐρυφόν (c. 5th century BCE) was a Greek physician from Cnidos. Soranus (Vita Hippocrates) describes him as an older contemporary of Hippocrates. Galen claims that he was the author of the Knidiai Gnommoi (Commentary in Hipp. De Morb. Vulgar.
VI.1, 29, vol xvii). And from a passage in Caelius Aurelianus, it appears that he knew the difference between arteries and veins (de Morb, Chron ii,10).

113 Ὄμηρος δὲ καὶ ἀστραγάλους αὐτὰ καλεῖ: Homer uses this word in Il.14.466; Il.23.88; Od.10.560; and Od.11.65.

114 ιερὸν ὀστοῦν: so-called because of its resemblance to a sacred vessel. Hipp.Art.47.

120 Ἱπποκράτης δὲ ἐπιμυλίδα ὀνομάζει: Pollux, in Onom.2.189.2, reports that this usage is Hippocratic.

123 Ἡρόφιλος (335-280 BCE) – a Greek physician, born in Calchedon. He was the first to perform dissections and is Rufus’ most-cited physician.

124 ἔχει μὲν γὰρ καὶ ἀστράγαλον ὁ ποὺς τοῦ ἀνθρώπου ὑπὸ τῷ σφυρῷ, κἂν οὐκ ἐμφανὴς: The astragalus or ankle bone is largely hidden under articular cartilage. See White (2005), 292.

127 Τὰ μὲν οὖν ἐπιφανῆ, ὁ παῖ, σὺν τοῖς ὑποκειμένοις ὀστοῖς οὕτω χρὴ καλεῖν τὰ δὲ ἔνδον τουτοῦ τὸν πίθηκον ἀνατέμνοντες, ὀνομάζειν πειρασόμεθα: It appears that the dissection beginning now.
ὦ παῖ: It is unclear whether Rufus is addressing an audience member (“o child,” as I have rendered it) or his anatomical prop (“o slave”). But since Rufus uses the second-person singular in his preface when asking about how one learns names, I have kept translated the noun as “child.”

Τὰς δὲ συμβολὰς τῶν ὀστῶν τοῦ κρανίου, ῥαφὰς καλοῦσιν· ἐοίκασι δὲ δύοιν πριόνων συνθέσει: The coronal suture receives treatment in Hipp.Epid.V.226.10.15 and Prorrh.I.5.558.7.

νῦν ἐτέθη ὑπὸ τινῶν Αἰγυπτίων φαύλως ἑλληνιζόντων: A derogatory reference to ethnic Egyptians (as opposed to Alexandrians; see n.134), and it is telling to see Rufus dismissing them as not really Greek.

tὰ νῦν τῶν ιατρῶν δῆλωσιν: Rufus seems to be a little nostalgic for the days when Alexandrian physicians could perform dissections.


Εὐδήμος δὲ εἰκάζει μὲν αὐτὰς ἀλεκτρυόνων πλήκτροις, ἀνωνύμους δὲ ἔδι: An erudite piece of trivia. It is not clear how Rufus would know this.
145 Ἔστι δὲ οὔτε ἐκείνα: Rufus is perhaps drawing his audience’s attention to where he is pointing on the monkey’s body.

153 ἄραχνοειδῆς: Hipp.Prog.2.142.7


169 νῆστις: The jejunum is the second part of the small intestine. It is found empty of food, as it is where carbohydrates and protein are absorbed.

170 τυφλὸν: The caecum is a pouch which receives feces from the small intestine and delivers it to the large intestine. The suggestion that it is “blind” relates to the fact that the connection between the colon and intestine is so small that it appears to dead-end at the caecum.

170 ἥν καὶ νειαίρην Ὅμηρος καλεῖ.: For the Homeric references, see I.5.539; II.5.616; and II.17.519.

171 ἀραιὰν δὲ γαστέρα καὶ τὸ σύμπαν ἐντερον πάλαι ποτὲ όνόμαζον, ἀπὸ οὗ ἐμμεμένηκεν οὔτως ἔτι καὶ νῦν τὸ μεσάραιον καλεῖν: Another reference to the development of new names for body parts. The mesentery is the membrane suspending
the jejunum. It sits below the stomach and colon and is much narrower. See Kibble (2009), 262.

180 ἐν ἱεροσκοπίᾳ: Here we have reference to another setting where dissections would be performed, and the anatomical knowledge that might be gained there.

180 ἐστι μὲν καὶ ἐν ἀνθρώπῳ: A sign of Rufus’ own work on living patients, presumably.

186 ἐν δὲ προβάτου ύστερα εἰδομὲν ἕκ τῶν διδύμων πεφυκότα τὰ ἀγγεῖα κεκισωμένα ἑκατέρωθεν: Rufus seems to be aiming towards the idea that women are imperfect men, and that their genitals are underdeveloped versions of male genitalia.

186 καὶ ἦν πολλὴ δόκησις σπερματικὰ ταῦτα εἶναι: A reference to female sperm. Galen is a proponent of this idea.

186 The Hippocrates knew of the fallopian tubes but believed they went to the bladder. See Von Staden (1989), fr.61. Galen was the first to note explicitly that they ended at the womb. See De Uteri Diss. CMG v.2.1 p.48).

187 Τοῦτο μὲν δὴ οἶδον ἐστὶν, αἱ ἀνατομαὶ τάχα δείξουσιν: Rufus seems almost wistful here. And it is a sign that he adheres to an experimental methodology, even if he has not gone far enough to test it out on a human subject.
188 Ἀλλοι δὲ νευρομίτρας καλοῦσιν: Though who these “others” are is unclear, the usage is attested in Pollux.2.185.2.

190 The Cnidian school was equal in antiquity with the Coan. It was said by Galen to have distinguished diseases in each organ: seven in the gall bladder, twelve in the urinary bladder, four in the kidneys, two in the thigh, and five in the foot.\textsuperscript{60} The best known physician of the school was Euryphon. Menon says he attributed diseases to residual nutriments which travel to the head.\textsuperscript{61} Most of what we know of the Cnidians is from the criticism of the \textit{Cnidian Sentences} by the author of \textit{Regimen in Acute Diseases} I-II, as well as some remarks by Galen. The critic says that the Cnidians attached little importance to prognosis but cared too much about the classification of diseases.\textsuperscript{62}

192 Κλείταρχος (4\textsuperscript{th} cent. BCE), an early biographer of Alexander the Great

193 Ἰπποκράτης δὲ καὶ δελφὺν, καὶ γονὴν καλεῖ: The Hippocratic mentions references in \textit{Mul.} I.8.114.15; \textit{Erot.} 27.10.

193 Another popular metaphor for womb in the Hippocratic texts is that of a jar. See \textit{Epid.} 6.5.11. \textit{Gen.} 9 (L.7.482) suggests the womb is like a jar and that the child, like a plant, will grow to fill it.

\textsuperscript{61} Galen. \textit{Regimen}. XV. 455.
\textsuperscript{62} Galen.XV.427.
κεράαι: The reference to “horns” was used by both Herophilus and Galen to indicate the fallopian tubes, though the Hippocratics seemed not to use this term. See Von Staden (1989), 232-3.

Περὶ δὲ τοὺς διδύμους: This term for “testicles” is being applied to female anatomy.

Πραξαγόρας: from Cos (4th cent. BCE): studied anatomy and was a teacher of Herophilus. Instead of the traditional four humors, he identified eleven. He viewed arteries as air tubes, similar to the trachea and bronchi and argued that arteries issued from the heart, while veins originate at the liver.

Δωριέσι: Ancient usages of Western Greeks, as previously. And it is another sign of his attention to Dorian versus Attic usage.

Πραξαγόρας: from Cos (4th cent. BCE): studied anatomy and was a teacher of Herophilus. Instead of the traditional four humors, he identified eleven. He viewed arteries as air tubes, similar to the trachea and bronchi and argued that arteries issued from the heart, while veins originate at the liver.

Φιλιστίων: from Locri (4th cent BCE): He was a physician and medical author. He argued that what is imbibed travels to the lungs (Plut, Symp. vii, 3)

Ἂπποκράτης δὲ τὰς ἀπὸ καρδίας εὐθεῖς δρακοντίδας ὀνομάζει: This reference to “little dragons” is in Nat.Mul.7.358.3.

Διονύσιος ὁ τοῦ Ὀξυμάχου: a contemporary of Eudemus, who wrote an anatomical treatise. This is a rather learned digression but receives corroboration in Orib.Med.13.i.2.
210 The carotid artery provides blood to the brain, and interruption to its flow results in loss of consciousness. See Kibble (2009), 210.

211 Νεῦρα δὲ, τὰ μὲν ἀπὸ ἐγκεφάλου καὶ νωτιάιου, πρακτικὰ καὶ αἰσθητικὰ, καὶ προαιρετικὰ, καὶ τόνοι: Reference to the nerves as “voluntary” is Alexandrian, not Hippocratic. See Galen De.Oss.ad.Tir.2.739.10; De.Nerv.Diss.2.831.2; and De.Loc.Affect.8.169.2.

218 This emphasis on the humors is Hippocratic in origin. Someone is well when his four humors: blood, phlegm, yellow bile, and black bile are in the proper amount. See Nat.Hom.4 (vi.38.19) and Morb.4.32 (vi.1.542).

226 Πραξαγόρας: For more on this individual, see note 199.

229 Eileithuia was the goddess of childbirth. Her cult center was at Amninos in Crete, the purported site of her birth. See Pausanias’ Description of Greece 1. 18. 5 (trans. Jones): "Near the Prytaneion or Town Hall of Athens] is a temple of Eileithyia, who they say came from the Hyperboreans to Delos and helped Leto in her labour; and from Delos the name spread to other peoples. The Delians sacrifice to Eileithyia and sing a hymn of Olen. But the Kretans suppose that Eileithyia was born at Amnisos in the Knossian territory [in Crete], and that Hera was her mother. Only among the Athenians are the wooden figures of Eileithyia draped to the feet. The women told me that two are Kretan,
being offerings of Phaidra, and that the third, which is the oldest, Erysikhthon brought from Delos."

228 Ζήνων (2nd cent. BCE): a physician of the school of Herophilus.

229 Ἀμνιὰς: Empedocles uses similar word-play in a biological context: the word “amnion” describes the membrane around the fetus. See also Pollux. Onom. ii.2225.i.155.8.

230. διὰ τοῦ ὀφράχου: The urachus is a fetal organ; it functions as a canal to drain the urinary bladder of the fetus.
Greek Text of Rufus' *On the Anatomy of the Parts of the Body*

[1] Παραδόντες τὴν τὸν ἐξωθέν θεωρουμένον ὀνομασίαν, ἔξεις νῦν ἐπὶ τὴν τῶν ἐντοσθίων μεταβαίνωμεν γνώσιν· έοικε γὰρ κατὰ τοὺς σοφοὺς οἶονει μικρὸς κόσμος ὁ ἀνθρώπος, ἀντίμιμος τῆς οὐρανίου τάξεως, ποικίλην ἔχων δημιουργίαν ἀποτελεσμάτων ἐν τῇ τῶν μερῶν κατασκευὴ, καὶ τῇ τῶν ἔργων ἐκβάσει· παιδευτέον ous καθάπερ τὰ ἄλλα τὰ κατὰ τὴν ιατρικήν, οὕτως δὴ καὶ τὰ κατὰ ἀνατομὴν θεωρήματα. [2]Τῆς οὖν τέχνης ἀρχές διδασκαλίας οἶονει ὑποβάθραν ποιούμενοι, ἐκθησόμεθα ἣν παρέσχε τοῖς μέρεσιν ἡ φύσις θέσει τε καὶ ὀνομασίαν.

προκύπτει τε εἰς ἑκάτερον τῶν ὀφθαλμῶν κατὰ τὴν λεγομένην πυελίδα καὶ βοθρόδη
κοιλότητα τοῦ προσώπου, παρὰ ἑκάτερα τῆς ρινῶς, ἐνθα ἡ τῶν χιτῶνων τῶν τῶν
ὄφθαλμων συνυφαγότων πλοκῆ γέγονε τοιαύτη. [10] Ὡν ὁ πρὸ πάντων τεταγμένοι, ἀπὸ
μὲν τῆς τάξεως ὄννομασται πρῶτος· ἀπὸ δὲ τῆς χροιάς, λευκός· καλεῖται δὲ ὁ χιτῶν
πρῶτος λευκός· [ό] αὐτός καὶ κερατοειδῆς, ἦτοι διὰ τὴν εὐτονίαν, ἢ διὰ τὸ λάμπειν τὸ
κτηδόνας ἀναλύεσθαι. Δεύτερος δὲ χιτῶν ἐστὶ προστυπῆς τῷ πρῶτῳ γενόμενος κατὰ
προσάρτησιν ἄχρι τῆς λεγομένης στεφάνης, δὲ κατὰ τὴν ἑαυτοῦ μεσότητα
διάστασιν σώζει, καὶ τέτρηται κυκλοτερῶς. [12] Τὸ δὲ τετρημένον σῶμα, λειὼν μὲν ἐστὶν
ἐξωθεῖν, κατὰ δροσσίτις τῷ κερατοειδῆς· δασύ δὲ ἀπὸ τῶν ἀπεστραμμένων, ὡς φησιν
Ἡρόφιλος, δορὰς ραγάς σταφυλῆς· ὤμοιον, καταπεπληγμένον ἄγγελος. [13] Καλεῖται δὲ
δεύτερος μὲν τῇ τάξει, τετρημένος δὲ ἀπὸ τῆς κατασκευῆς, καὶ ραγοειδῆς ἀπὸ τῆς
ἐμφερείας, καὶ χοριοειδῆς, ὡς ὄμοιος χορφῶ κατηγειομένος. [14] Ὁ δὲ τρίτος ἀπὸ τοῦ
αὐτοῦ πόρου προελθὼν περιέχει ύγρὸν ἑνάδον [ὁ] τῷ λευκῷ παραπλῆσιον, καλοῦμενον
ὑαλοειδῆς. [15] Ἐστὶ δὲ λεπτός ἀγαν οὖν· καλεῖται δὲ ἀπὸ μὲν τῆς τοῦ ύγροῦ πῆξινος,
ὑαλοειδῆς· ἀπὸ δὲ τῆς λεπτότητος, ἄραχνοειδῆς· ἀμφιβληστροειδῆς δὲ διὰ τὴν τῶν
ἀγγείων καταπλοκῆ καὶ τὸ σχῆμα· ἀπὸ γὰρ στενοῦ εἰς πλάτος ἀνευρύνεται, καὶ
κουλαίνεται πρὸς παραδοχὴν τοῦ τετάρτου χιτῶνος· ὁ ύγρὸν περιέχει χρυστάλλω
παραπλῆσιον, οὗ τὸ μὲν ἡμισὺ προκύπτει συνεργῶς ὑπάρχον τῷ διὸν τετάρτου τρήματι· τὸ
δὲ ἡμίσυ σύγκειται τῷ ἀραχνοειδῆ. [16] Ὑδος τοῖν τέον κέκληται δισκοειδῆς, καὶ
φακοειδῆς ἀπὸ τοῦ σχῆματος· κρυστάλλοειδῆς δὲ ἀπὸ τῆς τοῦ ύγροῦ πῆξινος. [17]
Τούτον δὲ οὐκ ἄξιον ὅτις χιτῶνα ὀνομάζειν· ἐπίπαγον [18.] δὲ τινὰ ὑμενώδη λέγουσιν
eῖναι.


[22] Ἐνδοτέρω δὲ τῆς γλώττης εἷς ἐκατέρου μέρους κεῖται προστυπῇ [τὰ] παρίσθμια, εἷς τὸν ἀριθμὸν ὄντα, ἀδενώδη τὴν σύγκρισιν, καὶ ποσῶς περιφερῆ, εὔτρεπτα, εὐαπόλυτα, ὑμενίοις προσελημμένα προσαρτέσι κατὰ βάθος, ὅν τὰ μὲν τέσσαρα εἷς ἐκατέρου μέρους θεωρεῖται· τὰ δὲ δύο ἐστὶν ἀφανέστερα. [23] Παρίσθμια δὲ λέγεται ἀπὸ τοῦ ἐν στενῷ πόρῳ κείσθαι· οἱ γὰρ ἄρχαιοι τὰ στενὰ ἰσθμοὺς ἐκάλουν· καλοῦνται δὲ καὶ ἀντιάδες ἀπὸ
τοῦ κατὰ τὴν διάνοιξιν τοῦ στόματος ἀλλήλαις ἐναντίας φαίνεσθαι, καὶ μάλιστα ὅταν φλεγμαίνωσιν.

[24] Ἐντεῦθεν δὲ ἀπὸ τὸν κατὰ τὸν οὐρανὸν μερὸν καὶ τῆς γλώσσης ἐκφύονται δύο εἰς βάθος πόροι· ὅν ὁ μὲν ἐμπροσθεν καλεῖται φάρυγξ· μεταξὺ δὲ τοῦτο καὶ τὸν τοῦ τραχήλου σφονδύλων, στόμαχος. [25] Καὶ ὁ μὲν φάρυγξ χονδρώδης τυγχάνει, καὶ ἀναπτθεὶς κατὰ τὴν περιφέρειαν, ἐκ μὲν τὸν ἄνω πλατύτερος ὑπάρχων, ἐκ δὲ τὸν κάτω στενότερος· προϊὼν δὲ κατὰ τὰς κλεῖς καὶ τὸ ἀντίστερον, τοῦ πλεύμονος ἐκφύεται μέσος, καὶ καταπλέκει τοῖς καλουμένοις βροχίας. [26] Τραχεῖα δὲ ἀρτηρία κέκληται οὗτος ἀπὸ τοῦ τετραχύνθαι· βρόγχος δὲ ὑπὸ ἐνίων εἰς πάροδον γεγονὼς ἀπὸ τοῦ τετραχύνθαι·

[27] βρόγχος δὲ ὑπὸ ἐνίων εἰς πάροδον γεγονὼς τοῦ κατὰ ἀναπνοὴν ἐλκωμένου πνεύματος καὶ φωνῆς γένεσιν. Ἐξήρτηται δὲ ἀπὸ αὐτοῦ ὁ πλεύμων σωμφός τε καὶ ἀραιός, περιεχόμενος τῷ κύτει τοῦ θώρακος, σφαιροειδής, καὶ μύουρος τὸ σχῆμα, διαφυόμενος εἰς λοβοὺς πέντε, τὴν χροιὰν τεφρὸς καὶ ὑπόλευκος, ἀεικίνητος, χώνης τρόπον ἐπέχων εἰς ὁδόν τοῦ πνεύματος· τὸ γὰρ διὰ φάρυγγος ἀγόμενον εἰς τὰ βροχία διὰ τῶν ἀραιωμάτων αὐτοῦ εἰς τὰ κενὰ τοῦ θώρακος δίεισι, καὶ πάλιν εἰς τὰ ἔκτος ἀπὸ τοῦτο διαπέμπεται τοῖς κατὰ φύσιν πόροις.

[28] Ἐκατέρωθεν τε προὐπεστάλται τοῖς ὑποχονδρίοις ὁ τε σπλήν καὶ τὸ ἦπαρ, ἃ κεῖται ὑπὸ τὸν πλεύμων· ἀλλὰ τὸ μὲν ἦπαρ εἰς τὸ δεξιὸν μέρος μᾶλλον προσηρτημένον τῷ διαφράγματι, ἐκ τῶν ὁπίσθεν μερῶν ὑγκωμένου, ἐντομαῖς λοβῶν τεσσάρων ἢ πέντε
διασεσημασμένον, φακώδες τὴν χροιάν, ἐπὶ τὸ ἑνερευθέστερον· φλεβωδέστερον δὲ τὴν σύγκρισιν, καθὸ καὶ αἴματώδες τῇ συστάσῃ. [29] Τῶν φλεβῶν δὲ τὰ τὴν κοιλὴν φλέβα τῇ διὰ τοῦ διαφράγματος ἐπὶ τὴν καρδίαν συνάπτοντα στόματα ὑπὸ τῶν ἀρχαίων εἰρήται καὶ πύλαι.

[30] Ὡτὸ δὲ τὸ κεκυρωμένον μέρος ἔχει προσπερφυκὸς ἀγγείδιον κύστες τῷ κρατοῦσαν, νευρώδες, χολής περιεκτικῶν τοπικῶς ἐν αὐτῇ γενομένης· ἀπὸ οὗ δὴ καὶ πόρος νευρώδης τείνει διὰ τοῦ μεσοντερίου ἐπὶ τὰ ἐντερα, διὰ οὗ κατὰ βραχὺ διηθεῖται ἡ χολή εἰς τὰ ἐντερα, καὶ ἐπιχρώνυσι τὸ κόπριον, καὶ πρὸς τὴν ἀπόκρισιν αὐτοῦ προθεμοῖς παρέχεται· οὗ διαφραγέντος καὶ τὴν κρατοῦσαν, ἀραιός, ἀγγείων ἔχων καταπλοκῆν, ἀπρακτός καὶ ἀνανεργητος.

[31] Ὁ δὲ σπλήν ἐναντίος τέτακται τοῦτο, παρεκτεινόμενος ἐπὶ μῆκος, ἀνθρωπίνῃς αἴματι χαῦνος τῆς μέσης διὰ τῶν ἀριστερῶν καὶ ἀνανενέργητος.

[32] Προσείληπται δὲ τοῖς λοβῶις τοῦ πλεύμονος ἦς καρδία, κείμενη ἐν τῷ ἑφάρακι, καὶ κατὰ τὴν μεσοτητή, μάλλον εἰς τὰ ἀριστερὰ νεύουσα, καὶ κατὰ τὸν εὐώνυμον μαστὸν τεταγμένη, τῷ σχήματί στροβιλοειδῆς, καὶ ἀπὸ πλατείας βάσεως εἰς κορυφήν συννεύουσα κωνοειδῆς, τὴν δὲ σύγκρισιν μυώδης τὲ καὶ νευρώδης, παλλομένῃ συνεχῶς σφυγμικῷ κινήματι, μεσόκοιλος, ἔχουσα κοιλίας δῶς αἰσθήτας ἐν αὐτῇ· τὴν μὲν ἐν δεξιός λεγομένην αἴματικῆν, διὰ τὸ πλεύονος αἴματος εἶναι περιεκτικῆν, τὴν δὲ ἐν τοῖς
εὐνύμοις, καλουμένην πνευματικῆν, διὰ τὸ πνεῦμα πλέον ἐμπεριέχειν, ἢ καὶ κινεῖται κατὰ παράθεσιν τοῦ πνεύματος, ύμέσι παρὰ ἐκάτερα πλατέσι κεχρημένη ὠτοειδές, διὰ τὸ περὶ αὐτὴν ὠτοειδὸς ἐσχηματίσθαι. [33] Ἐκφύεται δὲ ἀπὸ αὐτῆς ἀγγεία πλείονα, φλέβες τε καὶ ἀρτηρία, ἀπὸ ἃν τὸ ὅλον καταγείται σῶμα. [34] Περίκειται δὲ τῇ καρδίᾳ ύμην λεγόμενος περικάρδιος, νευρώδης τυγχάνον καὶ λεπτὸς, κινήσει κεχρημένον τῇ ἀπὸ καρδίας εἰς αὐτὸν διαδιδομένη.

[35] Ὁ δὲ τούτων ἀπάντων περιεκτικὸς θώραξ σύγκειται μὲν ἐκ χόνδρων καὶ ὀστῶν τῶν κατὰ τὰς πλευρὰς καὶ τὸ ἀντίστερον· μετείληφε δὲ καὶ νεῦρων καὶ σαρκῶν· καὶ ἕξωθεν μὲν ἐκ σαρκωδείης αὐτῆς, κινήσει· κατὰ αὐτὸν διαδιδομένη.

[36] ἔκ μὲν οὖν τῶν ἀνω μερῶν, ὡς ἐραμεν, συνεκφύεται τῇ τραχείᾳ ἀρτηρίᾳ παράλληλην θέσιν ἔχουν ὁ στόμαχος, ἀρχόμενος μὲν ἀπὸ τῶν αὐτῶν τόπων, σὺχ ὀμοίως δὲ τερματιζόμενος τῷ φάρυγγι· σαλπιγγοειδὴς δὲ κατὰ τὴν εὔφυτην, ἄνω μὲν στενότερος ὑπάρχῃ, κατὰ δὲ πλατύτερος, κατὰ τὴν κοιλίαν· [39] δὲ τὴν σύγκρισιν νευρώδης τυγχάνων. Ἐργοῦ δὲ ἤγεται τοῦ τῆς καταπόσεως τῆς τροφῆς ξηρᾶς τε καὶ ὑγρᾶς· τούτων δὲ τὴν ἐπιζήτησιν διὰ ἐαυτοῦ ποιεῖται τυγχάνον αἰσθητικότατος.

[40] Ἡ δὲ γαστρὴ ἀποφυομένη τούτου, κεῖται μὲν κατὰ τὴν μεσότητα τοῦ διαφράγματος, εἰς τὰ εὐώνυμα δὲ μᾶλλον νευευκυία, ἀπὸ στενοῦ τοῦ φράγματος, εἰς τὰ εὐώνυμα δὲ μᾶλλον νευευκυία, ἀπὸ στενοῦ τοῦ στομάχου εἰς πλάτος κοιλαινομένη· καὶ τὸ μὲν
περίκυρτον αὐτῆς ἔξω πρὸς τὸ ἐπιγάστριον· τὸ δὲ ἔνσιμον πρὸς τὴν ράχιν· νευρωδεστέρα
dὲ μᾶλλον τοῦ στομάχου, καὶ πλατυτέρα, τετραχυσμένη τὰ ἐνδὸν ὑφίς λίαν, διεσταλμένη
cαὶ συμπίπτουσα τῇ τῆς τροφῆς εἰσόδῳ τε καὶ ὑποχωρήσει, πρὸς ὑποδοχὴν σιτίον
gεγονυ. [41] Ἀπὸ δὲ ταύτης ἐκφύεται τὰ ἐντερα ἐλικηδὸν εἰλημένα πρὸς παραδοχὴν τὸν[ἐκ] τῆς
cοιλίας ὑποβιβαζομένων σιτίων, ὅπερ μὲν πόρος ἀπὸ τῆς ἐκφύσεως αὐτῆς ἀχρι τοῦ
ἀπευθυσμένου καὶ τῆς ἔδρας διήκει. [42] Ἡγεῖται δὲ τούτων ὁ πυλωρὸς λεγόμενος ἢ
δωδεκάδακτυλος· πυλωρὸς μὲν, ἀπὸ τοῦ παρακρατεῖν τὰ ἐν τῇ γαστρὶ παρακείμενα, ὅταν
ἡ συνηγμένος· ὅταν δὲ ἀνεθή, τότε προστέλλεται κατὰ τῶν ἐντέρων παραπλησίως
φιγκτήρι· δωδεκάδακτυλος δὲ λέγεται ἀπὸ τοῦ μεγέθους, τοσούτων τυγχάνον
δακτύλων· νευρώδης καὶ παχύς. [43] Τούτῳ συνάπτει ἡ λεγομένη νῆστις σαρκωδεστέρα παρὰ τὰ ἄλλα ἐντερα
σπανίζουσα τροφῆς κατὰ τὸ πλείστον· διὸ καὶ νῆστις προσαγορεῦται. [44] Ἐξῆς δὲ
κεῖται τὰ λεπτὰ καλοῦμενα ἐντερα ἐπιμήκη πολυείλητα τρεῖς καὶ δέκα που πῆχεων τὸ
μήκος· κεῖται δὲ ὑπὸ τὸν ὀμφαλὸν ταῦτα κατὰ τοῦ ὑπογαστρίου.

[45] Ἐπὶ πάσι δὲ τούτως, τὸ τε τυφλὸν καλοῦμενον ἐντερον, καὶ τὸ κόλον ἐκπέρυκε κατὰ
tὸ αὐτὸ, καὶ τὸ μὲν τυφλὸν, ἐπὶ εὐθείας ἐπὶ τὸν βουβῶνα τὸν δεξιόν νεῦον, τῷ πέρατι
ἀποκεκλεισμένον· [46] τὸ δὲ κόλον ἐκφυνέ κατὰ τὴν δεξιάν λαγόνα ἀνωθέν ἐπιπίπτει
κατὰ περιαγωγὴν ὡς ἐπὶ ἦπαρ καὶ ὑποχόνδριον πιοειδὸς ἀγόμενον· ἐνεχθὲν δὲ ὡς ἐπὶ
σπλήνα καὶ εὐώνυμον λαγόνα συνάπτει ὁπισθὲν τῷ ἀπευθυσμένῳ. Τούτῳ δὲ τίνας καὶ τὴν

[51] Οἱ δὲ νεφροὶ κεῖνται μὲν κατὰ τοὺς τῆς ράχεως τελευταίους σφονδύλους, ἄρθρῳ δύο, σχήματι περιφερείς, χροιά φακώδεις, καὶ ποσῶς ὑπότεφροι, ὅτι δὲξίος ἀνωτέρω βραχὺ καὶ μείζον εὐρίσκεται, τῇ συγκρίσει πυκνοὶ καὶ ψαφαροὶ, καρποὶ δὲ κατὰ τὰς τρώσεις, ὡς καὶ θάνατον ἀπεργάζεσθαι. [52] Κατὰ δὲ τὰ ἐνσήμα ὑμένας ἔχουσι κατατετρημένους ἡμβοιδιῶς, ἀπὸ ὅν δύο πόροι κατὰ τὴν κορυφὴν τῆς κύστεως συνάπτουσι, διὰ ὅν τὸ οὐρὸν ἐκδίδοται εἰς τὴν κύστιν, καὶ οὕτως ἐκκρίνεται.


[56] Οἱ δὲ σπερματικοὶ πόροι παρὰ τοὺς νεφροῦς κατάσσεται τέσσαρες· δύο μὲν ἐπὶ εὐθείας τεῖνοντες, οὕς καὶ παραστάματα τινὲς ἀδενοειδεῖς ἐκάλεσαν· δύο δὲ κιρσοειδεῖς διὰ τὸ κιρσοῦ τρόπον περιστρέφεσθαι. [57] Ἐν τούτοις καὶ τὸ γόνιμον ἀποτελεῖται σπέρμα, χαλαζῶδες καὶ παχὺ, οὕς καὶ γονίμους φλέβας τινὲς ὄνομασαν· ἐν δὲ τοῖς ἐντέροις ἄγονον

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καὶ λεπτὸν ὁ συναποκρίνεται τοὺς ὑπὲρ θρέψεως αὐτοῦ. [58] Πλὴν συζυγέντα ἐξ ἕκατέρου μέρους κατάσηκαν ἀπὸ τῆς ράχεως ἀνὰ δύο· καὶ τὰ μὲν ἄγονα συνεμφύεται τῷ τραχήλῳ τῆς κύστεως· τὰ δὲ κηρσοεἰδῆ διὰ τῶν βουβώνων εἰς τοὺς χιτῶνας τῶν διδύμων παρὰ ἐκάτερα· ὅθεν οἱ εὐνοσυσθέντες σπερμαίνοντι μὲν, ἄγονον [δὲ] ἐκ τῶν ἀδενοειδῶν, τῆς ἐκ τῶν κηρσοεἰδῶν ἀποκρίσεως οὐ δυναμένης σώζεσθαι διὰ τὴν πύρωσιν τὴν περὶ τοὺς διδύμους.


[63] Τῆς δὲ γυναικὸς τὸ γεννητικὸν μόριον, ἐξαίρετον ἐστὶ πρὸς τὴν τυπὴν τῶν ἀγγείων.
[64] Ἡ δὲ καλουμένη μήτρα κεῖται μεταξὺ κύστεως καὶ ἀπευθυσμένου, τούτῳ μὲν ἐπικειμένη, τῇ δὲ κύστει ύποκειμένη, τῷ σχήματι σικώα ἰατρικὴ παραπλησία, ἐνθα καὶ αἱ συνουσίαι περαιοῦνται.
[65] Φλέβες μὲν εἰσὶν ἄγγεια περιεκτικὰ αἷματος, διὰ ὅπε πάντας τοὺς τοῦ σώματος τόπους παραπέμπονται· ἀρτηρίαι δὲ εἰσὶν ἄγγεια περιεκτικὰ αἷματος μὲν ποσῶς, πνεῦματος δὲ πλέον πολὺ, ἐν οίς ὁ σφυγμὸς γίγνεται· καὶ τὸ ἀπὸ καρδίας ἐκθλιβόμενον
πνεύμα διὰ αὐτῶν εἰς ὅλον τὸν ὁγκὸν ἁναδίδοται. [66] Πιμελή ἐστι παρέκχυμα λευκὸν, λιπώδες, ὃ καὶ στέαρ καλοῦσιν.

[67] Ἀδένες εἰσὶ συστροφαὶ ποσός πιμελώδεις, καὶ σαρκώδεις ἰδίως κατακεχωρισμέναι εἰς τοὺς κοίλους τόπους, μασχάλας λέγω καὶ βουβδόνας, ἐτὶ δὲ καὶ μεσεντέριον. [68] Ὅστα ἐστὶ συγκρίσεις στερεᾶς καὶ ἀνάμοι καὶ ἀναίσθητος, διὰ ὅν αἱ τε πρακτικαὶ καὶ αἱ ἐρειστικαὶ κινήσεις συντελοῦνται.

[69] Μῦς ἐστὶ σῶμα ναστόν καὶ πεπυκνωμένον, οὐχάπλοῦν, ἀλλὰ μετέχον καὶ νεύρων, καὶ φλεβῶν, καὶ ἁρτηριῶν, οὐκ ἁμοίορον αἰσθήσεως, ἐνέργειαν ἔχον προαιρετικῆς κινήσεως. [70] Χόνδροι δέ ἐστι συγκρίσεις μεταξὺ ὅστων καὶ νεύρων· ὅστων μὲν γὰρ εἰσὶν ἀπαλωτέροι· νεύρων δὲ σκληρότεροι, ἀλλὰντίς ἀπολήγουσι τῶν ὅστων συμφυεῖς τυγχάνοντες.

[71] Νευδόν ἐστιν ἀπλοῦν σῶμα καὶ πεπυκνωμένον, προαιρετικῆς κινήσεως αἰτιον, δυσαίσθητον κατὰ τὴν διαίρεσιν. [72] Κατὰ μὲν οὖν τὸν Ἑρασίστρατον καὶ Ἡρόφιλον, αἰσθητικὰ νεῦρα ἐστίν· κατὰ δὲ Ἀσκληπιάδην οὔδὲ ὅλως. [73] Κατὰ μὲν οὖν τὸν Ἑρασίστρατον δισσῶν ὄντων τῶν νεύρων αἰσθητικῶν καὶ κινητικῶν, τῶν μὲν αἰσθητικῶν ἣ κεκοίλανται ἄρχας εὔροις ἢν ἢν μὴν ἔχει, τῶν δὲ κινητικῶν ἢν ἑκκεφάλῳ καὶ παρεγκεφαλίδι. [74] Κατὰ δὲ τὸν Ἡρόφιλον ἢ μὲν ἐστὶ προαιρετικὰ, ἢ καὶ ἔχει τὴν ἑκκεφυσιν ἀπὸ τοῦ ἑκκεφάλου καὶ νευτιαίου μυελοῦ, καὶ ἢ μὲν ἀπὸ ὅστοι· εἰς ὅστοιν ἐμφύεται, ἢ δὲ ἀπὸ μυὸς εἰς μῦν, ἢ καὶ συνδεῖ τὰ ἄρθρα. [75] Μυελὸς ἐστὶν οὐσία λιπώδης καὶ ἀναίμως, διαιστήτης ὑπὸ ὅστων περιεχόμενος.
Translation of Rufus’ *On the Anatomy of the Parts of the Body*

[1] After having discussed the terminology of the parts that are visible on the exterior, we shall now change course and investigate the interior parts. To philosophers, man seems to be a small world (microcosm); he is a well-ordered imitation of the heavens, exhibiting a complex workmanship both in the construction of his parts and in the achievement of their functions. Therefore, it is necessary to learn the study of anatomy, just as much as the other branches of medicine. [2] In establishing the principles of craft as the framework of our instruction, we shall explain the dispositions and names that nature assigns to each of the parts of the body.

[3] In the head, the brain -- along with the membranes surrounding it -- are encapsulated beneath the walls of the skull. The human brain appears larger, with respect to the rest of the body, than that of animals. It is a fleshy, clingy, and exceptionally white compound, and the part situated near the nape of the neck is called the cerebellum. [4] Of the meninges, one adheres to the bone of the head (dura mater) and moves with a pulse. The other meninx (pia mater) surrounding the brain prevents its destruction and preserves its composition. [5] The meninges are nerve-filled and membranous; they have a certain amount of sensation and possess a network of vessels. [6] The innermost membrane lacks movement, while the most external and thickest membrane moves freely. [7] From the brain, there descends an outgrowth of marrow which travels through the bottom orifice of the skull near the nape of the neck. Furnished with channels, it travels through the spine, down to its base. It is not a fixed sort of assemblage, but rather a discharge from the brain; it is called spinal marrow. [8] Channels of nerves descend from the brain to each of
the sensory parts, like the ears, nose, and others. [9] One of these channels is set in front of the base of the brain and is divided into two branches. It bends first towards each of the eyes in a region called the “basin” or “ditch-like hollow” of the face, and then towards each side of the nose. [10] There the interweaving of membranes forms the framework of the eye. The membrane which is located in front of all the others is called “first” in accordance with its position; “white” because of its color; or simply the “first, white membrane.” It is also called “horn-like,” both because of its durability and because the liquid within it shines like ivory. [11] But also, like horn, it is composed of fibrous layers. The second membrane adheres to the first as far as the attachment called the “crown.” There, to protect the central part from separation, it is perforated and round. [12] The perforated part, which leans upon the cornea, is smooth on the outside but rough on the inside, as Herophilus says. It is formed from interlaced vessels and resembles the skin of a cluster of grapes. [13] This membrane is called “second” because of its position; “perforated” because of its structure; “grape-like” because of its appearance; and “choroid” because it is like the chorion (the extra-embryonic membrane). [14] The third membrane (retina) emerging from this canal surrounds a liquid similar to the white of an egg and is called “crystalline” (vitreus). [15] This membrane is quite thin and is called “crystalline” because the liquid contained within it; “arachnoid” because of its fineness; and “net-like” both because of the interlacing of its vessels and because of its shape. It widens from a narrow to an open position and also hollows out in order to receive the fourth membrane. This membrane contains a liquid similar to crystal. One half of it leans forward, joining with the opening of the second membrane (papillary membrane), and the other half leans against the arachnoid membrane. [16] The fourth membrane is called
“disk-like” and “lenticular” because of its shape and “crystalline” because of the liquid contained within it. [17] Certain doctors consider it incorrect to label this fourth structure a membrane; they say, rather, that it is a certain membranous cluster.

[18] One must turn now to the parts lying within the mouth. [19] The tongue appears round in shape, having tapered from a wide base to a narrow point. It is rooted at the pharynx and is a combination of fleshy and nervous material. It moves during the chewing of food, during the process of swallowing, and in the articulation of sound. It shapes the breath that is released from the mouth, according to the halting movements of the soul. It also participates in the sensation of taste.

[20] At the base of the tongue, the epiglottis emerges; it is like a small tongue, standing with all its width atop the pharynx. It is wide at its base and narrow at its endpoint and has a cartilaginous structure where it shares space with the pharynx. It functions as a lid for the arterial-trachea and is the path and director to the stomach. [21] The uvula hangs suspended below the epiglottis, emerging with its neighboring parts at the roof of the mouth, near the openings of the palate. It is called a “bunch of grapes” because of the resemblance of its tip to a grape. It has no serious purpose, and when it is severed, no function is hindered.

[22] At the most remote part of the tongue, are lateral glands, located on either side of the tongue. They are six in number, have a glandular structure, are fairly round, easily changed, easily uprooted, and are attached to mucosal membranes suspended at the base
of the tongue. [23] Four are visible at either side, and two are invisible. They are called “isthmuses” because of their placement on a narrow channel. The ancients call these narrow passages “isthmuses.” They are also called “opposing glands” because they appear opposed to one another when the mouth is opened and, most of all, when they are inflamed.

[24] From there, at the base of the tongue and the roof of the mouth are two channels that extend downwards. One is located in front and is called the pharynx; the esophagus is located between the pharynx and the vertebrae of the neck. [25] The pharynx is cartilaginous and opens in a circular fashion; it is wider at the top and narrower at the base. It descends down to the clavicles and “anti-sternum,” extends to the middle of the lungs, and entwines the part called the bronchiae. [26] It is also called the “arterial trachea” because of its roughness, though some call it a “bronchus” when it functions as a passage for the drawing of breath and the production of sound.

[27] The lungs are suspended from the bronchus; they are porous and permeable and are surrounded by the hollow of the chest. They are round, though their endpoint takes the shape of a mouse-tail. They are divided into five lobes, have an ashen or whitish color, are always in motion, and act as funnels for directing the passage of air. The air going through the pharynx and to the narrow portions of the bronchiae enters the cavity of the chest, where, in accordance with nature, it is recaptured and sent out through the channels.
[28] On each side of the torso, under the cartilage of the chest, are the spleen and the liver, the latter of which lies under the lung. The liver is on the right-hand side and is attached to the diaphragm, extending from its posterior sections. It is divided into four or five lobes. [29] Its color is that of lentils, or it might even be somewhat ruddy. It has a venous structure, and its composition is blood-red. The orifices of the veins which connect the hollow vein (vena cava) to the heart are called “gates” by the ancients.

[30] Under its curved section, the gallbladder has a part that is nervous and resembles the bladder; it is filled with bile that is produced locally within it. From here, a channel, which is also nervous, stretches from the mesentery to the intestines and gradually transports bile to the intestines. Bile lends color to fecal matter and prompts its removal from the intestine. But if its path is blocked, jaundice develops, and bile pours scatters in the body. In this event, excrement appears white and clay-like.

[31] The spleen is located opposite the bladder; it is stretched-out and long, resembling the footprint of a man. On its upper portion, it is round and sturdy; on its lower portion, tight and thin; and on its middle portions, narrow as well. Its color is that of wine. Its structure is loose and porous, since it is a network of vessels. It is idle and serves no purpose.

[32] The heart is surrounded by the lobes of the lungs and is located in the thorax, along the midline. But it is located more to the left than the right and is situated under the left breast. It takes the form of a cone -- wide at its base and stretching conically at its
endpoint. Its structure is muscular and nervous. It is stirred constantly with a pulsing motion. Hollow in the middle, it has two distinct cavities in it. The one on the right is called “sanguine” because it is filled, more than anything else, with blood. The one on the left is called “pneumatic” because it is filled with *pneuma*; it is moved with the stored *pneuma*. On each side, the heart is equipped with large, ear-like membranes -- so-called since they are placed around like ears on the face. [33] Many vessels emerge from the heart, veins and arteries, which spread from the heart to the whole body. [34] A nervous and thin membrane called the pericardium surrounds the heart; it moves with an impulse given to it by the heart.

[35] The thorax contains all of these parts; it is made up of cartilage and bone and constitutes the sides and anti-sternum. It also contains nerves and flesh. On the outside, it is fleshy, and on the inside, it is nervous, where it is covered by an enveloping membrane. [36] The diaphragm covers the thorax along the sides, along the ends of the flank. [37] It is called the “diaphragm” because it separates the viscera contained within the thorax from those outside.

[38] From these upper parts, as we have discussed, the esophagus emerges from the same area as the arterial-trachea and descends in parallel with it. But at its lowest point, it is not like the trachea. It is trumpet-like in its breadth – narrow at the top and wider at the bottom, where it touches the stomach. [39] Its structure is nervous. Its task is the movement of solid and liquid food. [40] And since it is sensitive, it creates a demand for these things. The stomach, which emerges from the esophagus, lies along the midpoint of
the diaphragm, though it leans more to the left, and widens from the narrow opening of
the esophagus. The convex part of it extends outward towards the stomach, while the
concave part heads towards the ribs. It is more nervous and wider than the esophagus. It
is rough on the inside -- but not that rough. It moves with the arrival of food within it; this
is done for the acceptance of nourishment.

[41] From this organ, emerge the entrails which wind in a spiral to receive food sent
down from the stomach. And from the entrails, there is a single path from their point of
origin to the rectum and anus. [42] The pylorus, which is also called the duodenum,
opens into this passage. It is called the pylorus (gate keeper) because it holds back the
contents of the stomach when it is contracted. But when it is relaxed, it sends the
contents into the intestines, like a sphincter. The duodenum (having twelve digits) is so-
called because its breadth stretches the length of twelve fingers; it is nervous and thick.

[43] The jejunum follows the duodenum; it is the fleshiest part of all the intestines and is
nearly always empty of food. It is for this reason that it is called “empty.” [44] After this,
we encounter the long, thin intestines, which are folded over themselves many times and
have a length of thirteen cubits; they extend from the navel to the lower stomach.

[45] After all these parts, the intestines called the caecum and colon emerge from the
same area. The caecum extends in a straight line down the right flank and is closed at its
endpoint. The colon also emerges from the right flank and climbs towards the upper
colon. It circles around the liver and hypochondryles in the shape of the letter pi; then it
extends down the rear of the left flank with the rectum. [46] Some doctors consider the colon to be a lower stomach. [47] It is in the colon that most food is changed into feces. [48] The rectum follows the colon. It is the fleshiest part of the intestines and descends in a straight line; this is the cause of its name. [49] It ends at the anus and sphincter – one is nervous and hard; the other is fleshy and corrugated and marks the endpoint of the intestines. [50] In the middle of the intestines, the mesentery is arranged. It is also called the mesaraion.

[51] The kidneys lie near the last vertebrae of the spine. They are two in number. They have a round shape and are the color of lentils, though they border on an ashen color; and the right one is a little lower and larger than the left. In structure, they are dense and lobular. They are a vital part of the body, and if they are wounded, death can result. [52] On their concave side, they have membranes which are perforated like a sieve. From here, two channels (ureters) attach to the top of the vessels. It is through these that urine is sent to the bladder and is pushed out.

[53] On the top of the upper stretch of the intestines is the greater omentum, a fleshy, membranous, and divided body. [54] It is situated in such a way that it floats atop the intestines and is kept soft, despite the roughness of the peritoneum surrounding it. [55] And it is of no danger to the organ if it is cut or wounded.

[56] Four spermatic vessels descend near the kidneys. Two of these extend in a straight line and are called glandular parastates. The others are called varicose channels because
they unroll like varicose veins. In these channels, which some doctors call “generative veins,” a fertile seed is formed; it is lumpy and thick. In the others, the seed is sterile and thin, but descends with the fertile seed for the sake of nourishment. The rest of the vessels, yoked together, descend from the spine two at a time. The infertile vessels attach to the neck of the bladder, while the varicose vessels travel through the groin and attach to either side of the testicular membranes. Eunuchs do produce sperm, but their sperm is sterile and comes from the glands. The power of the semen from the varicose channels is not preserved if the testicles are removed.

One calls “scrotum” the entire slackened area, particularly the fleshy outer part, which contain the testicles. The scrotum is composed of two membranes: the outer one appears scratched and rough, while the inner one is in the form of a spear case. The scrotum and outer membrane, wrapping around themselves, attach to the testicles. The inner membrane folds over itself and surrounds each testicle in a circle. The testicles have a porridge-like consistency and are somewhat watery but are contained by a nervous membrane.

The female generative organ is a wondrous vessel. It is called the “mother” and is situated between the bladder, which lies on top of it, and the rectum, on top of which it lies. It resembles a cupping instrument used by doctors, and it is there that reproduction is achieved.
[65] Veins are the vessels which contain blood and which send that blood to all the parts of the body. Arteries are vessels which contain some blood and more pneuma. The pulse is generated in arteries. And pneuma is squeezed from the heart and spreads across the arteries to the entire body. [66] Fat is a white, oily mass, which is also called lard.

[67] I call “glands” the somewhat fatty and fleshy compounds, located primarily in hollow areas like the armpits, groin, and mesentery. [68] Bones are hard, bloodless, and insensible compounds; it is through them that activity and pushing movements are accomplished.

[69] Muscle is a solid and dense body. It is not simple; rather, it is a mixture of nerves, veins, and arteries. It is not devoid of sensation and is the locus of voluntary motion. [70] Cartilage is a compound between bones and nerves; it is softer than bones and harder than nerves, especially cartilage which is attached to the ends of bones.

[71] A nerve is a simple and dense body. [72] It is the source of voluntary motion but has no sensation if it is cut. According to Erasistratus and Herophilus, there are sensitive nerves, but according to Asclepiades, there are none. [73] Erasistratus says that there are two types of nerves -- sensory and motive. The sensory nerves are hollow and originate in the meninges, while the motor nerves originate in the brain and cerebellum. [74] According to Herophilus, there are nerves of voluntary motion which originate in the brain and spinal marrow. They attach either from bone to bone, from muscle to muscle,
or between joints (tendons). [75] Marrow is a fatty and bloodless substance and is present is all the bones.
Commentary on Rufus’ *On the Anatomy of the Parts of the Body*

1. Particularly relevant to Rufus’ scheme is the Hippocratic treatise *On Anatomy*, analyzed extensively by Craik in 1998. *On Anatomy* is the shortest treatise of the Hippocratic corpus and is, perhaps, an abridgment of a fuller account.\(^6^3\) It traces the internal configuration of the human body, with a focus on the trunk. It is mostly descriptive and contains little on function. That text evidences a particularly schematic arrangement of the arrangement of the parts of the body. *Apo* appears six times, *es* four times, and *epi* once. And beyond that, there is an emphasis on investigating from start to finish; top to bottom; and left to right. Also noteworthy is that the text describes two parallel paths: (1) trachea, lung, heart, kidney, bladder, genitals and (2) esophagus, belly, diaphragm, spleen, intestine, colon, rectum, anus.

1. Παραδόντες τὴν τῶν ἔξωθεν θεωρούμενων ὀνομασίαν: The implication seems to be that Rufus is continuing his *Names of the Parts of the Body*.

1. κατὰ τοὺς σοφοὺς: It is unusual that Rufus is using philosophers as his authority for why anatomy should be studied. Galen wouldn’t put medicine down like this.

2. ἡ φύσις θέσιν τε καὶ ὀνομασίαν: There is a trace of etymological theory here. The thesis is that the human body – both as a whole and each part individually – is perfectly constructed, in terms of function. And any change would be for the negative. This idea derives from Aristotle’s claim that “nature does nothing in vain. Indeed, Galen says that

\(^{63}\) Craik (1998), 135.
“Aristotle is right when he says that all animals have been appropriately equipped with the best possible bodies, and he attempts to note the skill used in the making of each one.”\textsuperscript{64} It is Nature who decides the proper size, shape, and location of all the parts.

3. As a general comment, the brain-to-body mass ratio is a rough estimate of an animal’s intelligence. Larger animals generally have larger brains, but elephants, despite their large size and intelligence, have relatively small brains, and rodents have the same ratio as humans. Indeed, shrews have the highest ratio of any known animal: its brain is 10\% of its body weight, as opposed to 2\% in humans. Aristotle \textit{HA. 449b29} notes that the brain is largest in man.

12-15. Notice the cluster of metaphors here: (1) cluster of grapes: food metaphor; (2) white of an egg: food metaphor; (3) arachnoid: animal metaphor; (4) crystalline: mineral.

19. Pollux 2.4.207 differentiates between the pharynx (the start of the esophagus) and the larynx (the trachea).

21. As in Rufus, in \textit{HA.1.11.493a2-4}, we find a similar description of the uvula. Compare Hipp. \textit{Morb.IV.29}

21. οὕ σπουδαίαν τινὰ παρεχομένη χρείαν: Rufus seems to be contradicting his claim in the introduction about the functions of every part of the body.

\textsuperscript{64} Galen.\textit{Usu Partium}.I.22.
23. ὁι γὰρ ἄρχαίοι τὰ στενὰ ἰσθμοὺς ἐκάλουν: Geographical metaphor. There is some
needless repetition from one sentence to the next.

26. “Τραχεῖα ἀρτηρία” is used either for the trachea or windpipe in the Hippocratic
corpus, but the use of “trachea” and “bronchial tubes” is inconsistent. That is, bronchos is
used both for the bronchial tubes and the entire area between the throat and lungs.
According to Rufus, it was Herophilus who gave the name “artery-like vein” (phleps
arteriodes) to the pulmonary artery. The distinction between the pulmonary artery
(phleps arteriodes) and pulmonary vein (arteria phlebodes) was held by both Erasistratus
and Galen.

27. The singular πλεύμων is dominant in the Hippocratic corpus. Aristotle, too,
considered the lung a single organ. The lobes of the lung and the lobes of the liver are
often conflated.

27. μύουρος τὸ σχῆμα: animal metaphor

27. There is disagreement in the various medical traditions whether the liver has five
lobes, as Rufus here suggests, or four. In the Hippocratic Oss.1, it has five – two on the
left (one superior and one inferior) and three on the right (one superior, one inferior, and
one middle). But in Oss 1 and 18, it has fewer. This might be the result of confusion
between the caudate and quadrate lobes.

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65 Arist.HA. 1.16.495b, PA.669b.
27. κατὰ φύσιν: It is not clear why is this in accordance with nature. Perhaps there is there some sort of nature abhors a vacuum principle at work.

28. Aristotle linked the spleen and liver; and both were located with reference to the diaphragm.66

29. On the color, mottling, and texture of the lungs, see also Arist. GA. 1285.

30. Stools that are pale or clay-colored arise from problems in the biliary system, especially the gall bladder, liver, and pancreas. Bile is produced in the liver and stored in the gall bladder. Bile gives stool its brown color, so if there is no bile (or blocked bile), stool will be pale.

30. In 1983, Ullman edited and translated into German the Arabic version of Rufus’ On Jaundice. Therapy includes purging, bloodletting, cupping, and cataplasm. The condition can affect the liver or spleen, though cupping is only an appropriate treatment for the liver. If blood is mixed with bile, blood-letting is the preferred treatment (16-17).

31. ἄνθρωπινῳ ἵππει: Again explaining human anatomy with human anatomy

31. τρυγώδης τὴν χροϊν: food metaphor

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66 Arist. HA.496b15 where the spleen is viewed as a false liver, and in PA.669b28.
31. ἄπρακτος καὶ ἀνενέργητος: Again, like the uvula, here we have something that has no function in the body. But it does not seem to bother Rufus much.

32. τῷ σχήματι στροβιλοειδῆς, καὶ ἀπὸ πλατείαςβάσεως εἰς κορυφῆν συννεύουσα κωνοειδῆς: geometrical metaphor

32. Compare Arist. GA.697, where the heart is described as pouch-shaped. Diocles describes two auricles of the heart, and these suggest that the heart has cognitive powers, as they allow the heart to “hear.” However, in the Hippocratic text On the Heart 8, the heart’s “ears” do not have holes for listening but for gathering air.

38. The esophagus was seen as parallel to the trachea: air (and fluid) travelled through the trachea, while flood moved through the esophagus.

38. σαλπιγγοειδῆς: musical instrument

42. ὁ πυλωρὸς: we have an architectural metaphor, but here the organ itself has a function, rather than being a passive vessel for blood, pneuma, or other purposeful material.

42. δωδεκάδακτυλος: human anatomy explaining human anatomy again
52. Erasistratus held that vital pneuma existed in the heart, while the seat of psychic pneuma was the brain.

55. Ἔστι δὲ ἀκίνδυνος ἐν τι ται̂ς τομαι̂ς, και ται̂ς τρώσειν: It, thus, appears to have no function.

57. The author of the Hippocratic On Anatomy notes four pairs of thick veins: (1) One pair extends from behind the head, through the neck, and emerges on either side of the spine, where it stretches to the loins and eventually to the ankles and feet. (2) The second pair travels from the head, by the ears, through the neck and jugular, and then through the thigh to the insides of the feet. (3) The third pair goes through the temples to the shoulder blades and then to the lungs, right breast, spleen, kidneys, and left side of the liver. (4) The last pair extends from the front of the head and eyes to the upper arm, elbow, forearm, wrist, fingers, and genitals. Veins lead from these thick veins to the belly, which is especially blood-rich, and the rest of the body.

58. οἱ εὐνοχισθέντες: Here Rufus uses a verb form — “those who have been made eunuchs.” This suggests that Rufus is referring not to spadones, or natural eunuchs but to those who have been sexually mutilated. Eunuchs in antiquity were created by crushing (thladiae), pressing (thlibiae), or surgically cutting (castrati) their testicles. See Stevenson (1995), 495. Yet becoming a eunuch was forbidden by law at various periods under the Empire. And it was illegal to castrate slaves.
63. τῷ σχήματι σικύᾳ ἰατρικῇ παραπλησία: This is a more obscure analogy than usual. Heat and space are used by Aristotle to describe how the uterus draws in semen like a conical flask: when inverted in warm liquid, it suctions it upward. Asclepiades compares breathing to cupping glasses.

65 “Φλέβες” are described as carrying blood, while arteries carry mostly pneuma. Pollux 2.5 defines arteries as passages for air. Its derivation is unknown, yet “airo” means left, and the lungs are suspended by the trachea and the heart, by the aorta (aorteo means “to suspend”).

68. Galen’s Anatomical Procedures.2.220 explains that the form of the body corresponds to its bones, so it is of great importance to study bones.

72. κατὰ δὲ Ἀσκληπιάδην: Asclepiades is the latest author referenced; he died in the early first century BCE.

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67 Arist.GA.739b.
Επειδή τήν τῶν ἐντοσθίων θεωρίαν κατά τὸ ἐνδεχόμενον παραδεδώκαμεν, ἔξης περὶ τῆς ὀστεολογίας λεκτέον ἡμῖν. Τὸ κρανίον τοῖνυν, κατὰ τὸ λεγόμενον σκαφίον, ἐστὶ σφαιροειδές· τοῖς μὲν κατὰ κορυφὴν μέρεσιν ὑγκόδες, τοῖς δὲ περὶ τὸ βρέγμα τυχάνουσιν ὑπόπαχυ ποσῶς καὶ πλατὺ, καὶ διπλοῦν κατὰ ἐπὶ βολήν ὡστοῦ, τοῖς κροτάφοις συνεσταλμένον. Ἐχει δὲ κατὰ τὸ πλείστον ραφᾶς πέντε, μίαν μὲν κατὰ κορυφὴν λαμβδοειδῆ εἰς τούπισθω τοῦ κρανίου φερομένην· ἐτέραν δὲ ἐπὶ τοῦ βρέγματος περιφερῆ, οἰονεί στεφανιαίαν· λήγει δὲ κατὰ αὐτό· τρίτη δὲ ἀπὸ τῆς λαμβδοειδοῦς ἐπὶ εὐθὺ τῇ στεφανιαία συνάπτει· ἄλλαι δὲ δύο παρὰ τὰ ὅτα, περὶ τοὺς τῶν κροτάφων τόπους, λεπιδοειδεῖς λεγόμεναι, οὐ κατὰ βάθος ἔχουσαι τὰς ἄρμογας, ὡς αἱ λοιπαί.

Ἐκ δὲ τῶν ἐμπροσθεν μερῶν εἰσὶν [αἱ] κοιλότητες, ἐνθα οἱ ὀρθαλμοὶ ἐνδόρυν ταῖς πυελίδες προσαγορεύμεναι. Μεταξὺ δὲ τούτων ἡ τοῦ μυκτήρος ὑπεροχή, ἐν ἧ τῷ ἡμοειδὲς ὡστοῦ ὑπόκειται, πλεῖσταις κεχρημένον κατατρήσεσιν. Ἐχει δὲ καὶ τὸ πρόσωπον ὡστῶν συνθέσεις ταύτας· μίαν μὲν ὑπὸ ταῖς ὁφρύσι, καὶ δύο ἄλλας ἐκ πλαγίων τοῦ τῆς ρινὸς ὡστῆδους· τετάρτην δὲ τῆς διείργουσαν τὴν ἄνω γέννη· εἶτα ἕξης τὴν κατὰ τῆς ὑπερώας, καὶ [τὴν] κατὰ τῶν χυγωμάτων, καὶ δύο ἄλλας δυσοράτους κατὰ τῶν μήλων. Τὸ δὲ κρανίον ἐκ τῶν ὕποκάτω μερῶν κοιλανθὲν ἐκτρησίν ἔχει διαμπερή καὶ περιφερῆ, διὰ ἃς ὁ νωτιάδος μινελὸς καταφέρεται. Εἰσὶ δὲ οἱ τοῦ τραχήλου σπόνδυλοι ἄριθμῳ τυχανοντες ἐπτᾶ· ἄρμονίως δὲ ἄλλος κατὰ ἄλλου ἐγκείται. Καὶ ὁ μὲν πρῶτος τούτων τῆν κίνησιν τῇ κεφαλῆ παρέχεται· οἱ δὲ λοιποὶ μένουσιν ἀκίνητοι. Ἐξῆς παράκειται ὁ ὀμος καὶ [ἡ ὀμοπλάτη]· ὡς οὖν ὡμοπλάτη κατὰ σχῆμα τρίγωνος οὖσα,
δελτοειδῶς ἐπίκειται ταῖς σπάθαις τοῦ θώρακος, ἐκ τῶν ὀπίσθεν μερῶν. Καὶ ἐκ μὲν τοῦ πλατυτέρου μέρους ἐστὶ λεπτοτάτη, ἐκ δὲ τοῦ συναγομένου παχυτέρα τε καὶ ἐρρωμένη, κοιλότητα τίνα ἔχουσα, εἰς ὣν ἐνήρθρωται ἡ κεφαλὴ τοῦ βραχίονος· ἀπὸ ὧς κοιλότητος διεκτέται ὑπεροχή, ὡσανεὶ ράχις, λεγομένη ἄγκυροειδής, ἢ ἄγκυστροειδής, ἐπὶ ὣν τὸ τῆς κλειδὸς πέρας πέπτοικε χόνδρος συμφυνέν.

Ἡ δὲ κλεῖς τριβολοειδῶς ἐσχηματισμένη ἐμφέρειαν ἔχει καθετήρι ἀρρενικῶς· συνήρθρωται δὲ τῷ στήρνῳ, καὶ συνεμέρυφυκε τῇ ὠμοπλάτη. Αὐτὴ δὲ ἡ μεσότης τῶν κλειδῶν συγματοειδῆς τυγχάνουσα, συμβάλλει τῷ πρώτῳ τῆς ράχεως σπονδύλῳ. —Ο δὲ βραχίον ἐπιμήκης ἐστὶ, καὶ περιφερής. Καὶ τὸ μὲν ἄνω μέρος ἔχει ὄγκοδέστερον, ὡς καλεῖται κεφαλὴ βραχίονος, ὁ περ κατὰ ἥμιτομον ἔγκειται τῇ τῆς ὠμοπλάτης κοιλότητι· ἐκ δὲ τῶν κάτω κατὰ ὧν συνήρθρωται τῷ ἄγκοιν, ἐστὶν ἄνωμαλος, ὡστε ἐξοχάς ἔχει παρὰ ἐκάτερα κονδυλοειδεῖς δύο, μέσην δὲ κοιλότητα. Ἑκ μὲν τὸν ἐμπροσθὲν ἦττον ἀνέσταλται, μᾶλλον δὲ ἐκ τῶν ὀπίσθεν.

Τοῦ δὲ πῆχους δύο ἐστὶν ὡστᾶ, πῆχυς, καὶ κερκίς. Καὶ τὸ μὲν τῆς κερκίδος πέρας τῶν κονδύλων τοῦ βραχίονος τὸν ἐξέω ἐπικαλύπτει περιφερές γενόμενον, καὶ ποσὸς υπόκοιλον. Ὅ δὲ πῆχυς ἐστὶ μακρότερος, καὶ κατὰ τὴν κάμψιν τοῦ καρποῦ ὑποδέχεται πέρας. Ἡ δὲ κερκίς κατὰ τὰ μέρη τοῦ καρποῦ κοιλότητας ἔχει δύο, μίαν μὲν εὐθεῖαν, ἐν ὧς ἐνήρθρωται· ἐτέραν δὲ πλαγίαν, εἰς ὣν ὁ κονδύλος τοῦ πή χεος ἐμφύτευται. —Ο δὲ καρπὸς σύγκειται μὲν ἐξ ὡστῶν ὀκτὼ στροβιλοειδῶς. Ἑπὶ τούτων ὑπάρχουσιν αἱ φάλαγγες, ὡστὰ ἐπιμήκη, δακτυλοειδή, ἐπὶ οἷς αἴ σκυταλίδες τῶν δακτύλων, ἐκάστου τρεῖς, ἀνισοὶ ἀλλήλαις, χωρίς τοῦ ἀντίχειρος· οὕτως γὰρ ἐκ βάσεως δυσὶν ὡστοῖς κέχρηται.
Μετὰ δὲ τοὺς ἐπτὰ τοῦ τραχήλου σφονδύλους, οἱ τῆς ράχεως εἰσὶ δυσκαίδεκα, καὶ τῆς ὀσφύος πέντε, ὡς γενέσθαι τοὺς πάντας τέσσαρας καὶ εἴκοσι. Οὕτω δὲ εἰσὶ κατεσκευασμένοι, ὡς τοῖς μὲν ἐνδόθεν μέρεσι εἶναι λείους καὶ περιγεῖς κατὰ ὁ σπλάγχνοις ὀμιλοῦσιν· ἐκ δὲ τῶν ὁπίσθεν τετραχυσμένους καὶ ἀκανθώδεις κρυπτομένους σαρκὸς ἐπιφύσει· τὰ δὲ παρὰ ἐκάτερα ἐστὶ τραπεζώδη· πάντες μεσόκοιλοι, μίαν εὐρυχωριῶν ἐχοντες, σωληνοειδὸς σώζοντες κατὰ τὴν σύγκρισιν, διὰ ὅς ὁ νωτιαῖς μυελὸς καταφέρεται, ὡς προεῖπομεν, τυπώσεις ἐχοντες πλαγίας, ἐν αἷς ἐνηρμοσμέναι εἰσίν αἱ σπάθαι. Τὸν οὖν σπαθὸν, αἱ μὲν ἀνωτέρῳ καμαροειδίς, συμβάλλουσιν ἀλλὰς, αἱ δὲ λοξοειδίς ἀντιβαίνουσαι τούτων ἐξῆς, χονδρόδεις ἀκανθαι καὶ νόθοι πλευράι καλοῦνται· μείζους [μὲν?] τὸν ἄνω τὴν παρέκτασιν, ἐκ συμβάσεως [δὲ] ἐλαττούμεναι. Πάντων δὲ τῶν σπονδύλων ὁ τελευταῖος διενήργει, ὥν καὶ ἵερον ὡστὸν καλοῦμεν, συνήθως τὸν ἄρχαιον ἱερὰ τὰ μεγάλα καλοῦντων.

Ἐκατέρωθεν δὲ τοῦ σπονδύλου τοῦτον τὰ τῶν ἱσχίων ὡστὰ παρατεθέντα ἐκ τῶν ὁπίσθεν, ἃ καὶ συνάπτει τοῖς πέρασι, κατὰ τὸ ἑφήβαιον χονδρῷ συμφυνέντα. Ἐσχημάτιστα δὲ τὰ τῶν ἱσχίων ὡστὰ πλατέα εἶναι καὶ ποσὸς περὶ φερῆ· κατὰ δὲ τὰ ἑτέρα στενὰ καὶ παχύτερα. Ἐχουσὶ δὲ κοιλότητας οὐ διαμπερεῖς, βαθείας [δὲ], αἱ κοτύλαι καλοῦνται εἰς ἃς αἱ κεφαλαὶ τῶν μηρῶν ἐναρμόζονται.

Οἱ δὲ μηροὶ ὡστὰ ἐπιμήκη, ἔρρωμένα τε τυγχάνουσι, τὴν ἐκτασιν ἀπὸ τῶν ἱσχίων ἄχρι γόνατος ἐχοντα, περιφερῆ, πρόκυρτα. Ἐκ δὲ τῶν κατὰ τὸ γόνυ πάλιν ἐκάτερα αὐτῶν πάχος ἔχει καὶ περιφέρειαν κονδυλώδη, ὡς ἐκατέρωθεν μὲν ἐπήρθαι, κεκοιλάνθαι δὲ ἐν
μέσω κατὰ ὁ προσκυρεῖ ἡ κνήμη τρίγωνος οὕσα, καὶ περὶ τὴν κεφαλὴν πεπλατυσμένη, κοιλότητας ἐξουσα ἐπιπολαίους, κατὰ όν αἱ κονδυλώδεις ὑπεροχαὶ ἐντίθενται. Αὐτῆς δὲ τῆς κνήμης ἡ ὑπεροχή εἰς τὴν τοῦ μηροῦ κοιλότητα ἀντικλεῖται. Παράκειται δὲ ἐκ τῶν ἐξωθὲν μερῶν ἡ περόνη ταύτης ἱσχυντέρα, οὐ πλησιάζουσα τῷ μηρῷ. ᾿Ὑπέσταλται δὲ κατωτέρω· καὶ ἔστιν αὐτῆς τὸ πέρας ὁ ἐξω κόνδυλος, ὃν ἐνιοὶ φασί τῶν ἰδιωτῶν ἁστράγαλον προσαγορεύεσθαι. Χόνδρῳ μέντοι κατὰ πέρας συνδεῖται πρὸς ἀλλήλα. ᾿Επὶ δὲ τῆς συμβολῆς τῆς κνήμης καὶ τοῦ μηροῦ ὡστοῦ ἐπίκειται λεγόμενον ἐπιγονατίς, δισκοειδές κατὰ σχῆμα, τὴν σύμφωσιν ἔχον μέσην, δ κατὰ μὲν τὴν κάμψιν τῇ κνήμῃ μᾶλλον προσχωρεῖ, κατὰ δὲ τὴν ἐκτασιν ἐπὶ ἐκάτερον πίπτει. ᾿Εκ δὲ τῶν πρὸς τοῖς σφυροῖς μερῶν ἡ κνήμη στενοῦται ποσὸς, καὶ σιγματοειδῶς τῷ πέρατι κατὰ τὸ ἴσον διάσταται ὁὔτως ὡς τὴν μὲν ἐπιμήκη ὑπεροχήν ἔχειν, τὴν δὲ σμικροτέρας· καὶ ἔστι τῆς μὲν μείζονος ὑπεροχῆς ὁ ἐσωθὲν κόνδυλος· ὁ δὲ τῆς ἄλλης κρυπτόμενος σαρκός ἐπιφύει· συνήρμοσται δὲ τῷ τῆς περόνης ἀπολήγοντι, ὁ καὶ ἐπιποβάν τὸν ἐξω κόνδυλον, ὡς ἔφαμεν, ἀποδείκνυσιν· ὡςτε εἶναι τὸ μεταξὺ διάστημα τοῖν δυοῖν ὡστοῖν σιγμαειδές.

῾Εν ὃ διαστήματι ὁ ἁστράγαλος ἔγειται, οὐ καὶ ἐπιβέβηκε τῷ αὐτῷ κατὰ τὸ τέτρωρον· ἀλλὰ ὁ χῖος καὶ τὸ ἐξ παράκειται τῇ τῆς κνήμης καὶ [τῇ] τῆς περόνης ἀποφύει· τὸ δὲ ἐπιτριῶν ἐπιβέβηκε τῷ ὑποτεγαμένῳ αὐτῷ ὡστῶ τῆς δὲ πτέρνης λεγομένῳ, ὡς πρὸς ταῖς τῆς πτέρνης κοιλότησιν ἀντικατακλείεσθαι τὰς τοῦ ἐπιτριῶν ἀνωμαλίας, καὶ συνδεῖσθαι χόνδρου περιφύει· τὸ δὲ ἐμπροσθέν αὐτοῦ σφαυροειδές μέρος [συνήρμοσται] κοιλότητη ἐνὸς ὡστοῦ τῶν τοῦ ταρσοῦ λεγομένου διὰ τὴν κοιλότητα σκαφοειδοῦς. Ὄκτῳ δὲ τὸν ἀριθμὸν ὀστάρια τὸν ταρσὸν ἀποτελοῦνται ταῖς γονίαις ὡντα ἀνώμαλα. Μετὰ δὲ τὸν
ταρσὸν ὑπόκειται τὸ πεδίον ἔχον ὀστᾶ πέντε, λεπτὰ μὲν κατὰ μεσότητας, παχύτερα δὲ κατὰ τὰ ἄκρα, ἀγόμενα δὲ κατὰ τὸν ἄνω τύπον, ὅθεν ἐκ τῶν ὑποκειμένων κοῦλα ὄραται.

Ἑξῆς δὲ τούτων αἱ τῶν δακτύλων σκυταλίδες καθάπερ καὶ χεῖρος. Ἀποδέδοται ἢμῖν κατὰ τὸ ἐνδεχόμενον καὶ ἢ τῶν ὀστῶν θέσις.
The forehead is soft. The nape is the upper, raised section on the back of the neck. The top of the head is the crown. The temples are membranous parts on the sides of the face. A meninx is a membrane of the head. The brow is the part of the face beneath the forehead. The hairs growing around the temples are called “whiskers.” And the folds of skin covering the eyes are called eyelids. On the two sides of the eyes are the corners of the eyes. The image (*eidolon*) in the middle of the eye is the pupil. The colored part stationed here is the pupil or eyeball. Other areas in the eye include the colored line encircling the pupil, the white, and the iris. The bones situated under the eyes are known as the under-eyes, lower eyes, and cheeks.

The openings of the nose are called “sinuses” (*mukteres*) and “nostrils” (*rhothones*). The midpoint of these openings is the partition. On either side of the nostrils are “wing flaps.” The endpoint of the nose is the “sphere.” The groove atop the lips is the philtrum. And the depression below the lip is the labret (*numphe*).

The “wing” is the lower bit of flesh leaning on the ear. On either side are the helix and lobe. We also find the cheeks, jaws, and jawbones. On the lowest part of the face are the chin and bearded area. The hair on the lips is called a moustache. Other hair includes the two endpoints of the moustache leading to the two sides of the lips, the hair on the groove atop the lips, and the *pappoi* (cheek hair). The beard is hair on the sides of the face.
The four teeth in the front of the mouth are the incisors. The molars, “corners,” “tables,” and krantarai are the remaining teeth. The innermost and latest to develop are the wisdom teeth. The grinding teeth are located beside the tearing teeth.

On the back of the neck are tendons; in the front are the throat, “gleaming part” (glaukonia), and the depression above the clavicles. The head is located at the top of the neck. The top of the upper arm is the shoulder. The hollow at the top of the arm is the armpit. Immediately after the shoulder is the upper arm. The sharp point, on which we prop ourselves when we lean, is known as the “bend of the arm,” the “point of the arm,” or simply the “elbow.” After the bones of the elbow, we find the ulna, and atop that, the radius. Then follow the flat and fused bones of the wrist: the metacarpus, tarsus, and fingers.

The finger set apart from the others is the large one (thumb); the first of the four remaining fingers is the pointer finger. Then comes the middle finger and after this, the one adjacent to the middle finger (ring finger), and the little finger. The bones of the fingers are called the “sticks” and phalanges. In some cases, the largest of all the fingers is said to be the middle finger, and the largest after that is the pointer finger and then the ring finger. The first joints are called the procondyles. Between the thumb and pointer finger is the palm. In the middle of the fingers is a flat area.

At the front and lower part of the throat is the chest, and at the rear of the throat is the back. The midriff extends up to the end of the spine. The loins are located at the base of
the spine; also there we find an area variously called: (1) the part below the navel, the belly, the stomach, the lower belly, and the lower stomach.

On the genitals, the pubic region, the pubic bones, and the pubis we find hair which grows in rings. The part of male genitalia which hangs down is known as the “stem” or shaft. The extremity of the organ is the glans, and the skin around it is the foreskin. The skin of the testicles is called the orcus or orcheis. The testicles are generative.

The last bone at the bottom of the back is the sacred bone or under-bone. The area under the ribs is soft, loose, and hollow. It is the endpoint of the bones of the torso.

There are two bones in the thigh: the first one is the femur; the other lies along the femur. The higher of these bones is called the patella, or “bone abutting the thigh.” At the bottom of the thigh, near the tibia is the knee. The hamstring, located at the rear of the leg, is that by which we bend our knees.

There are two bones of the lower leg: in the front, there is the shinbone, and behind it, is the “rod” or tibia. The end of these bones is called the “hammer.” The middle of them is the psachnon, and the muscle attached to them is the gastrocnemius.

The “field” or sole is the broad area in the front of the foot. The “chest” is located below the arch of the foot and is the area from which the digits emerge. They are called “digits” just like the parts coming from the hand. The sole is located under the foot.
Chapter 2

Rufus’ View of Humanity

The notion that man is set apart from the other animals is taken for granted in much of Greek literature. In the Byzantine period, Leo compiled a handbook on the nature of man in which he argued that (adult) man is set apart by his rational pursuits. And of course, we find this idea in earlier texts. In Plato’s *Republic* 441A, for instance, we find that the rational part of the soul, *to logistikon*, is missing in animals and children. And in the *Laws* 80D, children are described as being as intractable as beasts; they are in the same category as other, non-human creatures. This same idea appears in Aristotle’s *HA* 588a.68

Lurking behind all these examples is the idea that man must be unique among animals. Indeed, Robert Renehan refers to the widespread topos of “*monon ton zoon anthropos*” in Greek literature.69 This topos manifests itself in a range of ways, from the unique patterning of body hair to participation in the divine. Among the possibilities for man’s uniqueness, Plato’s *Cratylus* 399C suggests that only man can reflect.70 Also popular is the notion that rational speech, *logos*, separates us.71 And there are physiological differences as well. Man, it is claimed, has sensitivity to certain smells, not because they suggest the presence of food or warn of danger, but simply because they are

68 The phrase “*zoon logikon*” is widespread. See Chrysippus *ap.Plut.*450D.SVF 3.95-12.
69 Renehan (1981), 246.
pleasant.\textsuperscript{72} Man is capable of laughter.\textsuperscript{73} And looking at the most externally obvious, man is unique both in the dexterous use of his hands and in his bipedalism.\textsuperscript{74} My aim in this section is to explore Rufus’ answer to this issue of humanness. To be sure, Rufus himself never explicitly poses this question, but in what follows, I shall try to tease out whether humanness is something that is implicitly important to him. In his anatomical texts, what distinguishes the parts of our bodies as uniquely human? And how does he go about answering this question given his limitations, of which there are many?

To describe the elements of the human body, Rufus needs, in the first place, to explain what constitutes “human.” What, exactly, does he consider to be normal and normative? And what represents a deviation from this norm? The simple answer is that for Rufus, like for everyone else in antiquity, what is human is what is like him – adult, male, Greek, and free-born. Of course, he is not going to put himself on display, so his medical discussions necessarily focus on those who are different from him to various extents – namely, slaves and primates. But as I shall discuss, these discussions need to be seen through his Greek/free/male lens.

Rufus’ project of labeling the parts of the human body is enabled by two main props: (1) a slave to demonstrate the external parts and (2) a monkey for the internal ones. However, both of these tools are something of a concession for Rufus, as neither represents his ideal human. He would prefer to have a living, male, Greek human to vivisect. But cultural mores dictate that he use an animal cadaver. And limitations of his setting preclude using naked women or free males. It also seems that Rufus is limited to a single model each for the internal and external parts; so he does not have access to a

\textsuperscript{72} Arist. De Sensu 444a3. 
\textsuperscript{74} Xen. Mem. 1.4.11 and Arist. PA 687a4.
range of pathologies or ages. To be sure, Rufus notes that the monkey is man’s closest non-human relative. Yet he feels obvious nostalgia for the time when human dissection was a viable option. And similarly, Rufus is eager to use the slave, though his narrative betrays a clear preference is for Greek-born males. However, despite these limitations, Rufus does not seem terribly bothered. Women and the elderly were simply less important to him; they were, in a manner of speaking, “imperfect men.” And it would be too unthinkable for him to display a Greek man. Indeed, Rufus’ only real regret, which we will see in his segue from the external to the internal parts, seems to be that human dissection is no longer possible.

Rufus’ Use of the Monkey

In explaining the parts of the human body, Rufus’ main tool is a monkey cadaver. Indeed, in his *Onom.*, Rufus devotes 252 lines of Greek to this section of the lecture, versus the 211 lines that he uses with the slave as his model. Comparative anatomy is obviously important for Rufus. Yet he also makes clear that despite their similarities to humans, monkeys are imperfect stand-ins, and he would prefer to demonstrate on a human. So the question is: Why does Rufus use a monkey instead? The answer is two-fold: (1) because of cultural restrictions, he cannot dissect a human and (2) monkeys are the closest non-human approximate he can get.

Since prohibitions against human dissection were the major factor limiting Rufus’ lecture materials, it is worth delving into its process. Human dissections were performed most prolifically by Alexandrian physicians, and that Rufus feels envy over this is evident: καὶ ἤν πολλῇ δόκησις σπερματικὰ ταῦτα εἶναι, καὶ τοῦ γένους τῶν κισσοειδῶν.
Yet to credit the practice solely to the Alexandrians might be presumptuous, and there is some debate about its first appearance. Some scholars claim that even Homeric doctors performed dissections, since the anatomical knowledge displayed in Homeric poems is particularly learned. But the idea that vivisection was morally unthinkable was first stated by Welcker. Homeric doctors said that injuries from wounds were not large enough for close examination of internal organs, Hippocratic doctors never mention human dissection. Rather, they rely on external examination as well as comparisons with other animals. Despite the proliferation of the practice of dissection, at the start of the Empire, the climate became less philosophical and more superstitious, and by the time Rufus began practicing and teaching, dissection was no longer a viable option. And in his Onom., Rufus seems nostalgic for the old days when this practice was a possibility.

However, following Rufus, the use of non-human animals for medical experimentation once again became extensive. Galen, for instance, used pigs when testing the voice, because they squealed the loudest. Experimentation is more difficult on living animals because the blood is harder to control. To this end, Galen devised a trussing system to check its flow. Despite their seemingly ritualistic tendencies, Galen’s anatomies lacked the elements of sacrifice – that is, fire, prayers, barley, etc. And though he used predominantly non-human animals, his Anatomical Procedures, Galen notes the homologous elements between humans and apes: innards, muscles, arteries, veins,

75 It is a great supposition that these are spermatic vessels of the vascular kind. Perhaps dissections will show what sort they are.”
76 O. Korner (1922), 1484.
77 Welker (1850), 218.
78 Hipp. On the Heart.IX.80.
nerves, and bones. However, he is wary about using non-human primates, as he considered their facial expressions during vivisection to be disturbing; the sight is terrible (eidechthes) and too human. Rufus did not perform vivisection and nowhere discusses the ethics of animal experimentation.

Given that Rufus cannot perform human dissection, his second best option is to rely upon comparative anatomy. There certainly was precedent for this in the Peripatetic and Alexandrian traditions. Aristotle, in particular, emphasized the utility of comparative anatomy, especially when the species share a sufficient number of features. And looking to the Alexandrian tradition, though Herophilus’ anatomy was almost certainly based on human dissection, but it used comparative anatomy as well. And at several locations, Herophilus compares human organs to those of animals. In fragment 60, for instance, Herophilus notes similarities between the hare and other animals. And we also have Galen’s statement in fragment 61 that Herophilus described the “testicles” (ovaries) in various female animals. But there are, of course, problems associated with the inexactness of comparing disparate species. According to Theophrastus, “to insist at all costs on comparing what cannot be compared is an exaggerated undertaking because it embraces the danger that in the end, one misses the approach most suited to the study of the object.”

For this reason, Alexandrians began dabbling in human dissection.

Despite his extensive use of comparative anatomy to demonstrate the internal workings of human organs, Rufus makes clear that human bodies differ from those of other animals. Some of these differences manifest themselves in the form of superlatives: Humans have the largest brains, for instance:

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80 Ibid. II.219.
81 Ibid. XI.104 and II.690.
82 Theop. Historia Plantarum. I.1.4.
In the head, the brain -- along with the membranes surrounding it -- are encapsulated beneath the walls of the skull. The human brain appears larger, with respect to the rest of the body, than that of animals.

Humans also have the broadest chests:

The clavicles are the bones under the neck. Fastened near the chest, they prevent the shoulders and shoulder blades from falling together, as they do in other animals. For they (the animals) do not have clavicles. It is for this reason that man has the broadest chest.

It is not to say, however, that Rufus always sharply distinguishes humans from other animals. Monkeys are most similar to humans and share a number of structural similarities:

These, then, o child, are the visible parts -- along with their underlying bones -- that it is necessary for us to name. We attempt to name the internal parts by dissecting the monkey, since monkeys are most similar in nature to man -- in terms of their bones, muscles, viscera, arteries, veins, and nerves.

After monkeys, Rufus posits a hierarchy of relatedness based on the number of digits and rows of teeth that a creature possesses. After monkeys, which share musculature, skeletal, and nervous similarities, the animals closest to humans have feet divided into many digits. Second are those with a double row of teeth. Then come cloven-hoofed animals with two rows of teeth, and last are those animals with a single row of teeth and no
cloven hoofs: δεύτερα δὲ τὰ ἄλλα τὰ πολυσχιδῆ· τρίτα τὰ ἀμφώδοντα τῶν διχήλων· τὰ δὲ μὴ ἀμφώδοντα καὶ μόνον χαμός, προσωτάτω (Onom. 127). ⁸³

Incidentally, it is unclear whether this “double row of teeth” (amphodonta) implies (1) having a single row of teeth on both an upper and a lower jaw, totaling two rows, or (2) cycling through two sets of teeth – a juvenile and adult set. But the former option seems the likelier one since observations of the teething patterns of multiple species would have been more difficult than observing the simple presence of teeth on jaws. Incidentally, that mammals could have multiple rows of teeth is not as absurd a suggestion as it sounds. Rarely, humans can have two rows of teeth on the same jaw, a condition known as “shark teeth,” but this only happens when a child’s adult teeth form behind, rather than underneath, the juvenile ones. Eventually, the permanent teeth will dissolve the roots of the juvenile teeth. ⁸⁴

But in any event, it is worth questioning why digits and jaws are so important to Rufus. In Onom. 47, he details the structure of the human jaw. By definition, it has upper and lower mandibles. The jaw is significant to Rufus because, internally, it is the place to which teeth and the tongue attach, and these parts are necessary for eating. As I shall discuss in the section on metaphors, diet is a central concern for Rufus, since it is suggestive of certain, uniquely human behavioral patterns. Jaws are also important to Rufus because, externally, they are the place to which facial hair attaches. And facial hair is a key marker of being an adult, Greek male. And deviations from Rufus’ ideal -- women, the young, and non-human animals -- do not possess this hair.

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⁸³ “The second most similar are the animals which have feet divided into many digits. Third are the cloven-hoofed animals that have a double row of teeth. Those that do not have cloven-hoofs and have only a single row of teeth are most unlike man.”

⁸⁴ Cameron (1997), 218.
To help flesh out Rufus’ distinction between humans and other animal species, it is worth turning to Aristotle’s *Historia Animalium*, as that work provides a backdrop for Rufus’ own arguments. Before looking at the details in Aristotle’s text, the connection between the *Onom.* and the *HA* should be stressed. Rufus refers to Aristotle three times in his *Onom.*, and all of the references are from the *HA*. In *Onom.*43, Rufus refers to the Aristotle’s use of the word “earlobe:” λοβὸς δὲ, τὸ ἐκκρεμὲς, ὅπερ καὶ μόνον Ἀριστοτέλης φησὶ τοῦ ὠτὸς ὀνομάζεσθαι, τὰ δὲ ἄλλα ἄνωνυμα εἶναι. In *Onom.*61, Rufus references Aristotle’s discussion of the appearance of the uvula: Ἀριστοτέλης δὲ σταφυλοφόρον αὐτὸ καλεῖ, ὅτι φλεγμήναντος σταφυλῇ τι ὄμοιον εἰς αὐτοῦ κρεμάννυται. And in *Onom.*209, Rufus explains Aristotle’s argument that the aorta is exceptionally large. Αὐτὴν δὲ Αριστοτέλης ἐξαιρέτως τὴν διὰ τῆς ράχεως ἁρτηρίαν ὀνομάζει, ἢ τῆς μεγίστη παρατέταται τῇ ράχει.

But in addition to these explicit references, Rufus’ *Onom.* follows the general structure of Book 1 of the *HA*. Like Rufus after him, Aristotle divides his discussion of the parts of the body into two halves: the internal and the external. And he begins his section on the external parts using a human as his model, because we are more familiar with our own anatomy than we are with that of other animals:

Πρῶτον δὲ τὰ τοῦ ἀνθρώπου μέρη ληπτέον· ὅσπερ γὰρ τὰ νομίσματα πρὸς τὸ αὐτοῖς ἔκαστοι γνωριμώτατον δοκιμάζουσιν, οὕτω δὲ καὶ ἐν τοῖς ἄλλοις· ὁ δ’ ἀνθρώπος τῶν ἵππων γνωριμώτατον ἤμιν ἐξ ἀνάγκης ἔστιν.

First we must consider the parts of man. Just as anyone those with which he is most familiar, so we must do in other matters. And man is the animal with which we are most familiar, of necessity (491a19-21).

Aristotle then notes that the main parts of the human body are the head, neck, trunk, upper and lower extremities: Μέγιστα μὲν οὖν ἐστὶ τὰς τῶν μερῶν εἰς ἀ διαρεῖται
Compare Rufus’ treatment: “Εστι δὲ τὰ μέγιστα μέρη τοῦ σώματος, κεφαλῆ, καὶ αὐχήν, καὶ θώραξ, καὶ χεῖρες, καὶ σκέλη (Onom. 11). He next scans the external parts top to bottom, a pattern that Rufus follows with few deviations. The differences that do occur are minor, discussing the nose before the ears, for instance.

Aristotle’s second half turns to the internal parts, and there he explains that we must turn to comparative anatomy, as we are unable to look at human viscera. Aristotle additionally notes that under dissection, the monkey’s organs match those of man: Τὰ δ’ ἐντὸς διαφορεῖται ὁμοία ἔχουσιν ἀνθρώπῳ πάντα τὰ τοιαῦτα (502b25).

Aristotle’s discussion is, however, more explicitly comparative than Rufus’. While Rufus mentions the monkey at the outset of his lecture, his subsequent arguments focus solely on the human. Aristotle, on the other hand, frequently mentions other species, notably pigs and oxen.

Since Rufus’ Onom. follows the general structure as well as multiple examples from Aristotle’s HA, it is worth turning, more specifically, to Aristotle’s text to see how it distinguishes the various species and what it suggests might be uniquely human. Unlike Rufus who notes only structural differences, Aristotle explains that animals differ from one another in their modes of subsistence, their habitats, and their anatomical parts: Ὑ μὴν ἀλλ’ ἐνιά γε καὶ ἐν τούτοις ἑτερα ἑτέροις μόρια ὑπάρχει, ὥσπερ τὰ μὲν ἔχει πλήκτρα τὰ δ’ οὔ, καὶ τὰ μὲν λόφον ἔχει τὰ δ’ οὐκ ἔχει (487a11). Turning to specifics, Aristotle says that some animals live in water, while others live on land (487a15). Animals also differ in the way they feed. Some are carnivorous; some are gramnivorous; and other are omnivorous (488a15). In terms of habitation, Aristotle notes that some animals live in
groups, while others are solitary (487b34). And of the social animals, birds, bees, and man all submit to rulers (488a11). Dwellings likewise vary: some animals make their own, like the mole, mouse, ant, and bee, while others require no fixed home (488a20). In terms of their skills, some animals are musical, like humans and birds. Animals also differ in their temperaments, being either combative or complacent. (488b8). It is clear, then, that for Aristotle, both behavior and anatomy are important considerations when classifying animals.

One point that Rufus takes for granted but which Aristotle stresses is that form and function are allied qualities. Looking specifically at the comment that human relatedness is linked to teeth and digits, Aristotle explains that horned quadrupeds have the sort of teeth they do because they eat the sort of things they do. Likewise, animals have the sorts of digits they do because they need to grasp objects and navigate their surroundings in unique ways. In 507b15, Aristotle makes an explicit link between teeth and diet. Those creatures with teeth equally in both jaws have one stomach; included in this category are man, pigs, dogs, bears, lions, and wolves. Horned quadrupeds, which are furnished with extra teeth for grinding, have multiple stomachs. These same animals have no need for divided digits, as they do not grasp for their food. Though Rufus, too, notes that teeth and digits are linked factors which distinguish humans from other animals, he never makes a specific connect between anatomy and diet/habitat. Yet the similarities between his account and Aristotle’s betrays his consideration of these factors.

85 However, Aristotle notes that all creatures sing/chatter while having sex. Music is, then, tied to reproduction. (488a34-5).
86 Aristotle says that all animals which are quadrupedal, blooded, and viviparous have teeth, but some have teeth in both jaws (HA 501a9-15). Aristotle even cites Ctesias’ story of Indian animals called “martichoras” having a triple row of teeth (501a23).
Rufus explains that of all species, monkeys are the most similar to man, and in *HA*502a16-22, Aristotle makes a similar claim, although in his account, monkeys and apes act as a sort of blend between humans and quadrupeds. Turning to the details of his account, Aristotle explains that apes, monkeys, and baboons share properties of both men and quadrupeds (502a216-22). Monkeys are tailed apes, while baboons have the form of an ape but the teeth and demeanor of a dog. Apes are also a cross between humans and quadrupeds in their posture and hair growth patterns. In 498b17, Aristotle explains that while all viviparous quadrupeds have hair; bipeds have less, except on their heads. In other words, the part on top -- heads for humans and backs for quadrupeds -- are always covered with hair. And in 498b20, Aristotle adds that quadrupeds have less hair on their bellies, while men have more. Apes, as an intermediate, have hair on their backs like quadrupeds but on their bellies, like humans. As for the uprightness of apes and monkeys, Aristotle notes that these animals have fingers which look like toes and hands which look like feet. For this reason, they are just as likely to be found on all fours as they are to be found on their feet (502b1). Men, on the other hand, have hands and feet that are distinct enough that they tend to practice near-constant bipedalism.

Despite their obvious difference from humans, birds, because of their bipedalism and musical abilities, deserve some discussion here. In Book 2 of the *HA*, Aristotle tells us that birds, more than other animals, have the faculty of uttering articulate sounds. And concomitant with this ability is the possibility of bipedal motion. However, it is in Book 3 that Aristotle’s discussion is the most fleshed out. In Book 4, Aristotle tells us that insects have neither respiration nor voice. Likewise, mollusks, crustaceans, and fish cannot produce sounds. However, unique among the oviparous creatures are song-making birds.

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87 The rational for this is not explicit, but perhaps it has to do with protection from the sun.
Why birds are the only musical oviparous creatures is unclear, but Aristotle does explain that they are notably human-like in having two feet (unlike serpents, spiders, etc.). They can stand erect, and have their heads face the heavens, the locus of music. Nonetheless, Aristotle is quick to point out that birds are still less vocal than man: Мάλιστα δὲ τῶν ζῴων μετὰ τὸν ἄνθρωπον γράμματα φθέγγεται ἕνα τῶν ὀρνιθονυγήν (HA 504b1-2). And despite their bipedalism, birds cannot stand perfectly erect: δίπουν ἐστὶ τοῦτῳ τὸ ζῷον, οὐκ ὀρθὸν (PA 695a3). The reason here is that they have a dwarf-like shape: Οἱ δ’ ὄρνιθες οὐκ ὀρθοὶ μὲν διὰ τὸ νανώδες εἶναι τὴν φύσιν (PA 695a8). They are, and always will be, as it were, not fully formed.

In a similar vein, Aristotle tells us, in The Progression of Animals, that human children also cannot walk erect because they too are dwarf-like, and their upper and lower extremities are disproportionate: οὐ γὰρ δύναται βαδίζειν ὀρθὰ διὰ τὸ πάντα νανώδη εἶναι καὶ μείζω καὶ ἵσχυρότερα ἔχειν ἢ κατὰ λόγον τὰ ἄνω μέρη τοῦ σώματος τῶν κάτωθεν. (IA 710b12-15). Notice the repetition of the word νανώδη here; erect bipedalism is a function of maturity and vertical growth. It is only when children reach an appropriate size that they can walk fully upright: μέχρι οὔπερ ὃν λάβωσι τὸ προσῆκον μέγεθος, καὶ ποιοῦνται τότε τοῖς σώμασι τὴν βάδισιν τὴν ὀρθὴν (IA 710b16-17)

Verticality is, of course, tied to vitality. And indeed, there is a nexus of interlocking characteristics here which includes musicality, physical development, and greater rationality. But the most important implication of it all is that man occupies a unique place among the animals. Rufus’ demonstration on the monkey is a concession then. It is a necessary approximation to be sure, but it is nonetheless a disappointment for him.
Rufus on the Sexes

So we can see that the first part of Rufus’ implied answer to the question “what is human?” is “that which is not a zoon.” A human is like its closest relative, the monkey, in terms of its muscular, skeletal, and nervous systems; but it has a larger brain and full bipedal motion. However, a more complete answer about humanness actually requires a more nuanced question: What is supremely human for Rufus? And the answer to this is “that which is male.” In an effort towards maximum inclusiveness, Rufus does, of course, touch on both male and female anatomy. But it quickly becomes clear that women are secondary for him. Indeed, Rufus does not even use a female model to point out female anatomy; a male slave is his chosen prop. The sex of the slave is clear from the outset of the lecture. Rufus uses male pronouns: Ἀκούων δὴ καὶ ἀποβλέπων εἰς τὸν παῖδα τοῦτον (Onom. 9). And the slave has facial hair: ή δὲ ἐπὶ τῷ ἄνω χείλει, προσωγόνιον· αὐξηθεὶσα δὲ αὐτὰ τρίχες, μύστακες· αἱ δὲ ἐπὶ ἀκρου (Onom. 49). He also has male genitalia:

(101-3) δοίων ἐπίσειον, καὶ ἰβην, ἄλλοι δὲ ἐφίβαιον καλοῦσιν. —Τὸν δὲ αἰδοίων, τοῦ μὲν τοῦ ἄρρενος ἢ μὲν ἀποκρεμῆς φύσις, καυλὸς, καὶ στῆμα· τὸ δὲ μὴ ἐκκρεμέως, ὑπόστημα, καὶ κύστεως τράχηλος· καὶ ἡ διὰ μέσου γραμμῆς τραμίς· οἱ δὲ ὄρρον ὀνομάζουσιν. Τὸ δὲ πέρας τοῦ καυλοῦ, βάλανος, καὶ τὸ δέρμα τὸ περὶ αὐτῆς, πόσθη, καὶ τὸ ἐσχατὸν τῆς ποσθῆς, ἀκροπόσθιον.

Of the genitals, the part which hangs down in men is called the “stem” and shaft. That which does not hang down is called the base and the neck of the bladder. And the medial line is the perineum. Others call it the orrhon. [102] The extremity of the organ is the glans, and the skin around it is the foreskin. The extremity of the foreskin is the akroposthe.

88 The hairs that grow on the upper lip are called a moustache. Those on the point of the chin are called pappoi. And those under the jaw are called hypene (goatee).
This description continues into sections 105-6: Τὸν δὲ διδύμων τὸ μὲν ἑπάνω, κεφαλή, τὸ δὲ κάτω, πυθμήν. Καὶ τὸ χαλώμενον τοῦ ὀσχέου λακκόπεδον (Onom. 105-6).  

Nonetheless, Rufus uses this male slave as a springboard for discussing female anatomy, including breasts and reproductive organs. In this way, it becomes clear that Rufus’ narrative is an odd mixture of inclusiveness and selectivity. Though he describes both male and female anatomy, women are depicted as imperfect men; indeed they have both “testicles” and “semen:”

(197.) Περὶ δὲ τοὺς διδύμους εἰσὶ χιτώνες ἐλυτροειδεῖς καὶ δαρτοὶ, καὶ νεῦρον εἰς τὸν δίδυμον καθήκον κούλον· ὁ καὶ ἀορτήρ καὶ κρεμαστήρ καλεῖται, καὶ φλεβία διὰ ὧν τρέφονται διδύμοι· καὶ ταῦτα τρέφοντα τὸν δίδυμον καλεῖται.

Around the woman’s “testicles” are case-like and incised membranes. A hollow nerve also gives way to the testicles. This nerve is called the “cord” and kremaster (suspension). We also encounter veins which carry food through them; these are called the nourishing testicular veins.

One factor to bear in mind when considering this equation of male and female bodies is that it would have been difficult for doctors to gain access to female bodies. As Rouselle discusses, obstetrics was largely a female activity: During delivery, doctors would be available in case of emergencies, but in general, midwives would be in charge. For routine gynecological examinations, women checked themselves, sometimes discovering polyps and calluses, which they would self-cauterize. And as noted, dissection was only practiced in limited ways. In many cases, doctors had to rely on observation of female

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89 The upper part of the testicles is called the head; the lower part, the base. The area hanging down from the loins is the lakkopedon (scrotum).

90 Rouselle (1988).
animals. This, incidentally, is why Galen suggests that women have a double womb.\(^{93}\) In any event, the mysteriousness of female bodies led to a vocabulary for reproductive organs that was the same for both men and women. Ovaries were “testicles.” Fallopian tubes were “vas deferens.” And female seed was thought to exist. The only real exceptions to this equation of male and female parts were the uterus and the external parts of female genitalia.

On the topic of female seed, Pythagoras, Epicurus, and Democritus suggest that the female does emit seed, but her spermatic ducts face in the wrong direction. Aristotle and Zeno argue that women secrete a wet substance, like sweat from exercise, but it is not “cookable” seed. And within the Hippocratic corpus, women do emit seed, but it falls outside of the womb. In the two-seed theory, developed in Genit.4-6, Nat.Puer.12, Morb.4.32, and Vict.27-8, both the male and female produce seed, though the male’s is stronger. The contribution of large amounts of strong seed results in a boy, while large amounts of weak seed results in a girl. A lot of strong seed plus a little weak seed yields a boy, and the opposite yields a girl. However, it is not clear what determines the amount and kind of seed contributed by each parent.

Despite the similar vocabulary, most authors noted underlying differences between male and female physiology. Among the gynecological treatises, one prominent difference is women’s lack of innate heat. As an early example, Empedocles said that men are naturally hotter.\(^{94}\) And in Aristotle’s corpus, the body condenses by a form of cooking (pepsis), and there is a decreasing scale of heat among all living organisms: men

\(^{94}\) Fr.A81, B65, B67.
< women < animals < plants. Men’s greater heat transforms any excess of nutrition into sperm, but women cannot do this task completely. In Aristotle’s scheme, there is an equation of menstrual fluid with semen: semen is made from blood but is white because it is concocted from the male’s innate heat. Females lack this heat, so their semen does not change its appearance. This equation is not without explanation: menarche happens around the same age that semen appears, and menopause happens at the same time that “generative power fails” in men. However, Aristotle does not account for the different timing of menstruation and male ejaculation. Nonetheless, this heat-centric view exists beyond the Aristotelian corpus. For both Herophilus and Galen, it is extra heat that allows male genitalia to grow externally. The woman’s genitals are less formed, and semen from her “testicles” are colder and weaker.

And connected to coldness is the notion that women are wetter and have more porous flesh than men. Female pathology tended to involve an inability to remove excess fluids, so menstruation, intercourse, and childbirth are necessary for continued female health. There is also general consensus about the shape of women’s reproductive organs, in the sense that they are thought to be hollow, like a pithos; they have a bottom (fundus), neck (cervix), and mouth (orificium). The Hippocratic On Ancient Medicine 22 likens the womb to a suction cup.

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95 See especially Arist.PA.681a12-28, GA.732a12-339a18.
96 Arist.GA.7227a1.
97 Ibid. 727a5.
98 Galen.UP.14.6-7
100 Hipp. Diseases of Women.1.1
101 While Soranus rejects humoral theory, he also holds that the female body needs to rid itself of moisture.
102 Hipp.Mul.1.33; Epid.6.5.11
103 Sor.1.9 and Ruf. Onom.193.
104 Cf. Sor.1.9 and Galen.Sem.4.516.1.
Another distinguishing feature for women was that their reproductive organs were seen as inherently unstable. The idea of a wandering womb was popular with Plato and the Hippocratic writers, as well as later Roman and Byzantine authors. In this view, the womb was variously seen as a defective body part, an animal, and a demon who poisons women. Hippocratic authors tended to focus on the aggressive activities of the womb; it can leap upon (emballein and epiballein), fall upon (prosiptein), rush (thein), and urge on (parotrunai) other internal organs. And to keep the womb stable, these authors suggest women marry young (close to menarche) and engage in frequent intercourse, so that the womb would be heavy and be less apt to move. Therapy is also introduced to reposition a womb that has wandered: if it has risen to the diaphragm or liver, sweet-smelling substances are applied vaginally, and foul-smelling substances are applied to the nostrils. But if a womb has descended, the reverse order is used. To be sure, the practice of human dissection would have challenged the notion of the wandering womb, as ligaments holding the womb in place would have been visible. But even so, this had little effect on some of the later authors: Arataeus, a contemporary of Galen, in his Causes and Symptoms of Acute Diseases, explains that the womb behaves like an animal within an animal.

Part of the reason for this sort of wild movement was that the womb is envisioned as hungry. It falls upon the male seed and ingests it. Indeed, the womb has a “mouth” to close around the seed, and if conception does not occur, the womb will vomit it out. Linked to this is the idea of appetite and sexual desire:

105 Hipp. Diseases of Women 1.22.1.
106 Arist. GA.720a12-14.
107 Hipp. Mul. 1.24, Sor. 1.10.
108 Soranus in 1.36, 1.43, 1.46 views the womb as having a stomach as well. Cf. Galen. Sem. 4.523.10.
For just as it is impossible for seed to be ejaculated by males without the urge and appetite, in the same way it cannot be taken up by females without the urge and appetite. And just as food swallowed without appetite or with a certain revulsion is not well assimilated and fails in its subsequent digestion, so too the seed cannot be taken up. Or if it is taken, it cannot be carried to term without the presence of the urge and appetite for intercourse. (Sor.1.37)

The best time for intercourse, then, is when desire is present. For this reason, female sexual pleasure was an important consideration, as a “matter of pronatalism.”

But it also was a matter of expediency.

But women are not the only ones to occupy a space below men. In discussing deviations from the norm, it is also worth discussing eunuchs, who for Rufus, comprise an intermediate category between women and men. In his Anat.58, Rufus describes them as having male reproductive organs which do not function properly. Their sperm is sterile and source from glands which are non-generative:

(58.) Πλὴν συζυγέντα εξ ἑκατέρου μέρους κατίασιν ἀπὸ τῆς ράχεως ἀνὰ δύο· καὶ τὰ μὲν ἄγωνα συνεμφύεται τῷ τραχήλῳ τῆς κύστεως· τὰ δὲ κιρσοειδῆ διὰ τῶν βουβώνων εἰς τοὺς χιτῶνας τῶν διδύμων παρὰ ἑκάτερα· ὅθεν οἱ εὐνουχισθέντες σπερμαίνουσι μὲν, ἄγωνον [δὲ] ἐκ τῶν ἀδενοειδῶν, τῆς δὲ τῶν κιρσοειδῶν ἀποκρίσεως οὐ δυναμένης σώζεσθαι διὰ τὴν πήρωσιν τὴν περὶ τοὺς διδύμους.

[58] The rest of the vessels, joined together, descend from the spine two at a time. The infertile vessels attach to the neck of the bladder, while the varicose vessels travel through the groin and attach to either side of the testicular membranes. Eunuchs do produce sperm, but their sperm is sterile and comes from the glands.

109 Hanson (1990), 315. And in the case of rape, Soranus explains that appetite is still present; it is just that the mind objects.
The power of the semen from the varicose channels is not preserved if the testicles are removed.

Indeed, Rufus fits into a tradition that views both eunuchs and women as failed men. These prejudices abound in Aristotle’s biological works and in the Hippocratic corpus. Aristotle believed that vital heat came from the heart but was retained by the sperm. In this way, sperm became a source of untapped nourishment. Males could use heat to change this food into blood. But since women lacked heat, they could not make sperm. And likewise, eunuchs lacked both heat and sperm. Peter Brown refers to the “slippery slope” of gender anxiety, a downward trajectory into a feminized state. At the top of the hierarchy is the perfect male; below him are prepubescent children, women, elderly men, and eunuchs.

As an addendum to this point, in his discussion of gonorrhea, Aretaeus of Cappadocia, a second century CE medical writer, says that when the sexual organs of men are compromised because of disease, they become cold and womanlike. In contrast, “a man with healthy semen is warm; his joints work well; he is hairy; he has a good voice; and he is clearly recognized as a man.” But when one compares the healthy man with the eunuch, he will find that the eunuch is “weak, lethargic, high-voiced, and womanlike.” According to Aristotle, during sexual intercourse, blood and warmth travel from the brain to the genitals. Because of this, hair follicles on the scalp die, and baldness results. Children and eunuchs, on the other hand, have full heads of hair.

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110 See Kathryn Ringrose’s discussion of Brown’s position in Ringrose (2003), 53.
111 Aret. On Gonorrhea 2.5.
Woman are, so to speak, failed men. They lack vital heat, and so they are softer and colder.\footnote{112}

In this way, maleness is held to be “both normal and normative,”\footnote{113} while the female is just an imperfect derivative. In fact, the further one moves from the masculine ideal, the more monstrous the individual becomes. The first deviation from this standard is the female; she is like an inverted male. Then, in descending order of masculinity, follow hermaphrodites; androgynes; and lastly, miscarried fetuses, entities which are so unlike men that they are, in fact, lifeless.\footnote{114} This scheme allows for two main sexual categories: men and imperfect men – that is, those who have somehow fallen off the ideal.

To understand the reasons for this duality, it would be necessary to discuss the process of sex differentiation. But unfortunately, Rufus is silent on this point, and if we want to propose reasons for his male/female distinctions, we need to look to other medical texts. Turning to a later tradition, Galen believed that sex emerged both from the opposition of male and female principles (in the male and female seed) and from the seed’s location within the womb. Galen explains that the human womb is bicornate;\footnote{115} male embryos develop in the right chamber; and females, in the left, though it is not clear how the seeds arrive at their respective sides. The right chamber of the womb is markedly warmer;\footnote{116} and for this reason, males form faster than females — in thirty-nine days, as

\footnote{112} The notion that women and castrates are imperfect men extends beyond the medical realm and even insinuates itself -- rather unexpectedly, perhaps -- into technical treatises in architecture and music. In his musical treatise \textit{De Musica}, for example, Aristides Quintilianus suggests that there are masculine and feminine musical elements, and these elements have qualities associated with their sex.
\footnote{114} Cf. Aristotle, \textit{GA} 757.
\footnote{115} Other animals, however, might have wombs with more chambers.
opposed to forty-two, as we see in the Hippocratic *Nature of the Child* (18.21). In a similar vein to this text, Valentinian, a second century Christian heretic writing in the Galenic tradition, notes that fetuses on the left, in addition to being warmer, are material (*hylikon*), while those on the right side are psychic (*psychikon*), meaning that they can transmit psychic material.\footnote{As an interesting pendant, it is worth noting that the Greek word for soul, *psyche*, is feminine and is often anthropomorphized as a woman. Indeed, in an unusual work of contested provenance, *The Exegesis on the Soul*, the soul is described as a woman who has inverted her womb to be like a male sex organ. So to be something that can actually procreate, the soul must transform herself into a masculine form.} As for sexual aberrations, Galen explains that hermaphrodites belong to an intermediate sex. Since there can arise varying degrees of dominance between the male and female seed, and since these can appear in myriad positions within the womb, the fetus can be entirely male, entirely female, or intermediate. The Galenic view allows for a sexual continuum, although anything which is not entirely male is sub-standard.

This picture differs from the Aristotelian idea of conception, which takes an entirely heat-centered view of sexual difference. Aristotle characterizes hermaphrodites as a type of twin. In his scheme, the mother, although she does not supply generative pneuma, does supply the raw material from which the embryo is formed. In the case of complete twinning, she contributes enough matter to form two entire embryos. But in the case of hermaphrodites, she supplies more than enough material for one embryo, but not enough for two. The surplus material, then, becomes an extra genital. Nonetheless, Aristotle did not believe that genitalia defined the sex of the baby. Rather, it was the amount of heat present in the heart — males having more heat; and females, less. So whatever their anatomy, hermaphrodites truly belonged to one sex or the other. Of course, this heat view of sexual difference invites several questions. Is there some
specific temperature which marks the boundary between male and female? And if genitalia are not indicative of sex, how does a hermaphrodite’s thermal level manifest itself? In other words, how can he know to which sex he belongs? Allowing for intermediates allows Galen to escape these worries.

But returning to his discussion of sexual differentiation, following conception, we encounter the genesis of the embryo, a process which is also dependent on the sexual interplay of the parents’ seed. Galen explains that living beings experience three major events during gestation: genesis, growth, and nutrition. Genesis is further subdivided into the processes of (1) alteration and (2) formation. The first of these processes takes unformed raw material in the womb and creates the embryo’s bones, nerves, veins, and other tissue. The subsequent process of formation takes these altered substances and gives them their shape and general organization. Galen describes formation as an artistic act, bestowing the final creative touches on the organs. This is not to say that formation occurs willy-nilly, however; all of its creations are done for some purpose. In this way, no bodily part is superfluous; and none is capable of being better employed. The whole system is teleologically driven. And it is not surprising, then, that only the male’s perfect seed is able to perform the task, a point I shall turn to next when I discuss the possibility of female auto-insemination.

118 Galen’s strong teleological bent here seems to sit uneasily with his notion of intermediate sexes. In a scheme where being male and (exclusively) psychically donative is the desideratum, what is the use of being a hermaphrodite? Women are a rung below men, but they can still reproduce. How can the possession of extra but useless genitalia be for the best? Perhaps we can save Galen’s teleology by noting that, in several ancient accounts, hermaphroditism seems to have been tied to the possession of unusual powers. Tiresias, for instance, was prophetic. And in the Gnostic tradition, Sophia embodied wisdom beyond expected human bounds. Among non-human animals, the hyena was considered to bear both male and female genitalia (HA 579b15-30, GA 757a2-13). And somehow concomitant with this unusual anatomy, the hyena had the ability to imitate human speech and to mimic (uncannily) the behavior of its prey. Though reproductively sterile, these hermaphrodites posses non-human — even super-human — capacities. But whether Galen himself subscribed to these beliefs, however, is unclear.
Like Rufus before him, Galen, in his treatise *On the Usefulness of the Parts of the Body*, makes the curious remark that men and women have the same sexual organs; it is just that men have theirs on the outside, and women have theirs internally. And also similar to Rufus, we find the argument that both men and women have “testicles.” In Galen, this difference is a function of heat: females are colder and, therefore, imperfect, so their organs cannot grow out. The woman is, in effect, a deformed (*anaperon*) male.\(^ {119}\)

Nonetheless, women possess an additional and unique reproductive organ, a womb in which the fetus can develop. So in this view, women are not simply inverted men; they are seed producers *and* receivers. This fact makes women vaguely hermaphroditic and prompts one to ask the attendant question: What keeps women from auto-inseminating? And further, would not their internal genitalia make conception occur even faster than male/female intercourse?

This notion of women as quasi-hermaphrodites finds support in the Hippocratic treatise *On Regimen* (1.28-9). In that work, the author explains that males and females can each produce male and female seed, and the intermixing of these seeds allows for a sexual continuum, ranging from males to females and androgynes. The scheme is as follows: If the seed from both parents is male, the baby will be a robust male. This is the most favorable outcome. If the father donates a male seed and the mother a female seed, the child will be male, but not as vigorous as the child born from two male seeds. If the seed from both parents is female, the child will be female and fair. However, if the father gives a female seed and the mother a male seed, the child will either be a weaker female or a hermaphrodite. So both females and hermaphrodites can result from the same combination of seed.

\(^ {119}\) *UP* 14.7.
But returning to the question of female auto-impregnation, Galen, at least, ultimately concludes that it is impossible. For a woman’s semen is weak and cannot confer artistic form (morphe technike) on the fetus.\textsuperscript{120} Along these same lines, Valentinian, comments that female semen is insubstantial, formless, and imperfect. Simply put, a woman’s seed cannot conceive by itself. To be sure, many ancient thinkers did believe that hens could conceive without males, being impregnated by the wind.\textsuperscript{121} However, their “wind-eggs” were imperfect and could not hatch. Nonetheless, in parallel to the case of wind-eggs, Galen toys with the idea of women producing dummy fetuses. For he notes that women can conceive lumps of unformed flesh (sarx adiaplastos), formations which he labels “moles” (\textit{UP} 14.7). The idea of dummy fetuses is common in other biological treatises. Aristotle, for instance, talks of women who think they have conceived without men, but ultimately produce amorphous, lifeless masses. In his view, the woman’s work cannot be brought to perfection because of a weakness of heat (\textit{GA} 775b25-776a10). Likewise, in the Hippocratic \textit{Diseases of Women}, the mole arises from a “little and sickly seed” (1.71) and is not a true fetus. Soranus, too, explains that the mole has just the appearance of pregnancy (3.37). It is unclear what physical anomaly, if any, these authors are describing— perhaps some sort of uterine growth or cyst, but in any event, female auto-insemination is not a viable means of producing offspring.

So while it might appear from Galen’s discussion of seed location within the womb that there is a smooth distribution of sexual possibilities, there really is a sharp divide between males and non-males, and the gradation is in degree of deformity (of non-maleness). As for the woman’s place in this continuum, she is like a man, in the sense

\textsuperscript{120} Galen, \textit{De Semine} 1.7.
\textsuperscript{121} This is in analogy to plants which are pollinated via the air. See Conway Zirkle (1936) “Animals Impregnated by the Wind” \textit{Isis}, Vol. 25, No. 1: pp. 95-130.
that she possesses his organs, albeit inverted, and can reproduce. However, she is also like the monsters and other reproductive anomalies because she cannot put her male organs to their proper use. Hermaphrodites are similarly incapacitated. And miscarried fetuses are clearly in the lowest rank of all, as they can no longer perform any vital function.

But returning to Rufus, we can see that his account is not nearly as fleshed out. While he notes that women and eunuchs are imperfectly formed men, he provides no explanation of why this might be the case. It is only with reference to other medical texts that we can coax out an answer. Yet despite viewing women as imperfect, Rufus does not shy away from describing their anatomy. The reason for this seems to be one of practical necessity. Women represent a number of Rufus’ patients. He needs a vocabulary to account for their conditions and symptoms. And beyond that, it is patently not the case that Rufus considers women to be inhuman; it is just that they are imperfectly human.

Rufus’ Slave

Even though Rufus does have access to a male model to demonstrate the external parts, he is, nonetheless, limited by the type of male body he can display. In *Onom.* 9, Rufus tells his audience that he is using a slave. It is curious that Rufus announces this fact, as his context should have made his choice of model obvious. Nonetheless, it is worth delving into the slave’s identity. Who is this individual that Rufus has on display? He seems a willing enough participant. At any rate, he does not appear to fight Rufus’ demonstrations. But whether there was a trussing system holding him in place is unclear. However, it is apparent that the slave was naked; Rufus points to his observable body
parts, and these would otherwise have been hidden by clothing.\footnote{However, it is worth noting that even if the slave had been clothed, there was no form of dress specific to slaves. Seneca says that the idea of dressing slaves uniquely had been proposed to the Senate but was dropped for fear that the slaves might realize how numerous they were (On Mercy I.23.2).} He must have been young and in good physical condition; and he had to be lean enough to have visible musculature.

Of course, Rufus’ use of a slave begs the question: Were the bodies of slaves and freemen viewed differently? It should be noted that the difference between their bodies was not necessarily one of skin color, as slaves often came from the Balkans, Turkey, and Greece, so there might not have been an obvious physical difference.\footnote{The origins of slaves spread in tandem with Roman imperialism, so slaves came from Italy, the Iberian peninsula, Gaul, the Balkans, and Anatolia. See Scheidel (2011), 303. Rufus’ slave is unnamed, but had he been named, this information is unlikely to have suggested his provenance.} However, it seems that for Rufus, the body of the slave could be used differently from that of a free man. We can also see glimmers of this mindset stemming back to the Aristotelian corpus. In his \textit{Politics}, Aristotle lists three distinct moral levels for humans: (1) males, (2) females, and (3) slaves. Freemen, unlike slaves, women, and children, have the capacity to deliberate (\textit{to bouleutikon}). And by extension, they also have the moral responsibility to control the lives of others who are unable to do so for themselves. According to Aristotle, males have a natural superiority over females. Biologically, women only provide the matter for the seed to grow. And rationally, they do not have the same power as men. Slaves, on the other hand, lack all deliberative power.

\[\text{ἄλλον γὰρ τρόπον τὸ ἐλεύθερον τοῦ δούλου ἄρχει καὶ τὸ ἄρρεν τοῦ θῆλεος καὶ ἀνήρ παιδός, καὶ πᾶσιν ἐνυπάρχει μὲν τὰ μόρια τῆς ψυχῆς, ἄλλα ἐνυπάρχει διαφερόντως, ὁ μὲν γὰρ δούλος ὁλως ὑπὸ ἄρχει τὸ βουλευτικόν, τὸ δὲ θηλυ ἄρχει μὲν, ἄλλα ἂνυρον, οὐ δὲ παῖς ἔχει μὲν, ἄλλα ἂ τελεῖ.}\]

The freeman rules over the slave after another manner from that in which the male rules over the female, or the man over the child; although the parts of the soul are
present in all of them, they are present in different degrees. For the slave has no
deliberative ability at all; the woman has, but it is without authority; and the child
has, but it is immature. (Pol.1260a9-16)

It would appear, then, that here are many similarities between women and slaves -- most
notable is the fact that without both, the polis could not exist (Pol.1278a22). Aristotle
explains that both slaves and women, by nature, should perform activities within the
household, so that men can perform their duties outside of the household. Women are
meant to bear children and to be companions to their husbands (Pol.1277b25). And
slaves are designed to do manual labor for others (Pol.1287a12, 1254b25). Nonetheless,
the relationship between (free) males and females is more equal than that between males
and slaves. While the woman is “inferior,” the slave is “wholly worthless.”¹²⁴ Bar On
explains that the free male rules over the female for her sake, while he rules over the
slave for his own.¹²⁵ Of course, there are female slaves as well (Pol.1252b1-7), but in
terms of the slave’s function, sex does not matter.

Rufus’ approach appears similar to Aristotle’s, and in his work, the slave was a tool, a
prop, just like his monkey. That being said, as a crucial difference from his account of the
monkey, Rufus still viewed the slave as a person; he was just a person with fewer rights.
The circumstances of lecture, especially the slave’s anonymity, indicate that he was
viewed simply as a body. Indeed, slaves were bought and sold naked, and legal protection
of their bodies was light. While Athenian comedy likely exaggerates the level of
violence against slaves, philosophical texts perhaps minimizes the damage against them.
Rufus’ text is silent on this point, and he never actually interacts with the slave in any

meaningful way. But in any event, it is apparent that Rufus’ slave serves a deictic function within the context of the lecture.

As for the question about why Rufus uses a slave instead of a free man, the answer is similar to that of the monkey: It was the best available option for him. It goes without saying that in order to showcase the anatomy he wants to explain, Rufus needs a nude body. Yet he is faced with certain cultural restrictions. Though he considers the body in its ideal state to be male, Greek, uncircumcised, and bearded (but otherwise free of body hair), these requirements cannot be met. As I shall explain, Rufus cannot use a Greek male, as this sort of nudity was only allowed in certain settings, like athletics. And putting aside the question of whether Rufus would have wanted to give extensive treatment to the female body, the reality is that regardless of his preferences, a female model, except perhaps a prostitute, would not have been available to him. Among Greek men of the classical period, there was a fear of female genitalia, particularly pubic hair. This taboo against female nudity extended into the realms of literature, art, and life.¹²⁶

To be sure, in the Archaic period, the female nude was sometimes depicted as a fertility symbol, and later, her image was occasionally used for courtesans. In classical art, especially Attic vase painting, naked women were generally prostitutes. But outside of the artistic realm, women were generally protected from men’s eyes. They did not attend symposia, nor did they undress publicly. There is, of course, an exception for Spartan women, who danced naked in some religious rites.¹²⁷ And sometimes women would appear naked in mythological scenes in Greek art, particularly chase scenes. The other exceptions are Greek hetairai who were shown naked or partially naked. But then

again, *hetairai* were not considered full citizens. For Rufus, then, a female nude was something that was not available to him.

As for male nudity, other restrictions apply. As a general comment, nudity marked a contrast between humans and animals, between Greek and non-Greek, and between male and female. Along these lines, Larissa Bonfante in her article “Nudity as a Costume in Classical Art” explores public nudity as a sort of costume.\(^{128}\) She notes that during the classical period, the Greeks saw athletic male nudity as something that distinguished them from barbarians. Herodotus and Thucydides, for instance, saw athletic nudity as a custom which separated the Greeks. In his well-known story of Gyges (1.10.3), Herodotus explains that “among the Lydians, as just among all the other barbarians, even for a man to be seen naked brings great shame.”\(^ {129}\)

Yet outside of artwork and athletics, Greek nudity was something that was not showcased. Indeed, the Greek word *aidoia*, “shameful things” was used for sexual organs. And Rouelle preserves this sense in his French translation. In *Onom.* 101 male sexual organs are “*organs génitaux,*” while female organs in *Onom.* 109 are “*parties honteuses.*” But even beyond the Greek world, the body taboo was widespread.\(^{130}\) In the *Old Testament*, for instance, nudity signifies shame, slavery, and humiliation. And in the ancient Near East, it is an indication of defeat, as prisoners were bound and naked.\(^ {131}\) As mentioned, the only real exception to this taboo was athletics; there was a change in the Greek tradition during the classical period, and nudity represented athleticism and

\(^{128}\) Binfante (1989), 543-70.

\(^{129}\) Cf Thuc. 1.5-6.


\(^{131}\) *Wörterbuch biblischer Bilder und Symbole* (Munich 1973) 218-20, s.v. Nacktheit (N. Lurker).
readiness to fight. But Rufus did not have a male athlete available to him, so he had to work within his limitations.

Rufus’ Third Requirement: A Living Model

And the final part of Rufus’ answer to the question “what is human?” is “a body that is alive.” Rufus recognizes that beyond being a collection of parts, the human body is something that moves, that exists in time, and that undergoes physiological processes. So one of the biggest hindrances for him when discussing both the internal parts and their respective functions is that he only has access to a cadaver. And again, Rufus must use a cadaver because vivisection was not a viable option for him. Like dissection -- but even more so -- it had become taboo.

It is worth noting that there are always attendant problems and limitations when using cadavers for anatomical investigations. In the first place, the investigator needs a range of ethnicities, ages, sexes, and pathologies. In other words, the sample set needs to be large enough to make generalizations appropriate. Rufus never speaks of his models in the plural. He does not appear to have multiple cadavers or jars of preserved specimens. Nor is it clear that Rufus’ venue would have supported a large collection of bodies. Incidentally, these limitations are why we now have computer models and simulations; medical students can more easily be exposed to age- and sex-specific anomalies. But beyond this, dissection of cadavers assumes not only that there exists a relation between structure and function, but also that symptoms of diseases have anatomical correlates which remain visible after death. A final problem worth mentioning is that if the individual under inspection has died, bleeding from cuts will be minimal. In a dead body,
the only blood pressure will be from the pull of gravity. So the workings of the
circulatory system will not be manifest.

In any case, since Rufus does not have access to a living body -- human or
otherwise --, he must use one that is dead. Nonetheless, he proceeds through his
discussion as if the monkey were alive, describing its physiological processes as if they
were currently happening. The heart and arteries lying before him pulsate; the bladder
secretes urine; the lungs inflate; muscles contract; and joints bend. It appears that Rufus
has a fully functioning body in front of him.

Of course, when using preserved organs as a launching point for physiological
discourse, description necessarily bleeds into narrative, as living bodies exist in time.
Static organs become part of a sequential series of (physiological) events, often with no
clear signal to the reader where this transition occurs. Rufus typically proceeds by noting
some striking feature of his model which he can then situate in a physiological story. In
this way, there is a mutually enhancing process of seeing and imagining. Rufus’ readers
never actually see the models he describes, and we who get the descriptions second-hand
must imaginatively generate not only any extra-visual responses, but also the images
themselves.

As a point of comparison, Rufus’ account is similar to Philostratus’ *Imagines*,
wherein the author gives his nephew a tour through an art gallery. In that work,
Philostratus points to paintings and describes their parts. Yet it quickly becomes clear that
there is something odd about these paintings. Far from being two-dimensional, static
images that can appeal only to the eye, Philostratus’ paintings involve motion, produce
sounds and smells, and are not temporally fixed. Indeed, the paintings are simply
launching points for Philostratus’ narrative, vehicles for him to say what he wants. In a similar way, I would argue that Rufus’ models are also narrative starting points, and his story goes far beyond the bodies in front of him. As I have argued, the fiction inherent in Rufus’ account manifests itself in several ways: (1) a male provides evidence for female anatomy, (2) a monkey provides evidence for human anatomy, and (3) a cadaver provides evidence for living bodies. So despite his use of “real life” props, Rufus seems more literary than we might expect. While his descriptions are not exactly ecphrastic, there is something similarly fictional in his presentation. The inherent limitations of his props are not limitations for his narrative. And in working around his tools, which he deems unsuitable to various extents, Rufus can demonstrate what for him is uniquely human.
As a compiler of medical terminology, Rufus has two subsidiary goals: (1) identifying the parts of the body and (2) providing names for these parts. Rufus views this second task as a complex one. How can we best identify the features that comprise humans? What dialect do we use? What register? What sorts of metaphors are helpful? Whose terminology should we trust? Or is it better to coin new terms? As is the case when identifying the parts of the body, Rufus faces certain limitations when describing them with words. Not all parts have previously received names. And some have names provided by physicians whom Rufus does not like. In this section, I shall argue that in wrestling with language, Rufus displays many of the same prejudices that manifested themselves in his description of the human body. It is clear, for instance, that Rufus privileges certain words: He approves of the coinage of Athenians but criticizes the language of foreign doctors who, to his mind, spoke Greek badly. Those who are trustworthy are those who are like him.

I shall also argue that Rufus’ focus on the exceptionalism of the human body also comes to the fore in his abundant use of metaphors. When Rufus does not have a ready term to describe a part, he will often recycle one for another part. In other words, the human form is so foundational that Rufus will often explain the human body in terms of the human body. Certain words, in particular, become basic: the head, neck, and
extremities reappear throughout the treatise. These are the same words that Rufus identifies in his preface as most important. But more than that, it is not just the human body that Rufus privileges, but it is also human behavior. Rufus’ metaphors reach to human diet and even to human cultural and intellectual pursuits.

The Foundational Importance of Names

From the outset of his preface in the *Onom.*, Rufus tells his audience that arriving at the proper name for something is critical in all benausic pursuits:

Τί πρῶτον ἐμαθὲς ἐν κιθαριστικῇ; Κρούειν ἐκάστην τῶν χορδῶν καὶ όνομάζειν. Τί δὲ πρῶτον ἐμαθὲς ἐν γραμματικῇ; Γνωρίζειν ἐκαστὸν τῶν γραμμάτων καὶ όνομάζειν. Οὐκῶν καὶ τὰς ἄλλας τέχνας ὡσαυτῷς ἀπὸ τῶν όνομάτων ἀρχονται διδάσκειν, καὶ ὁ χαλκεύς, καὶ ὁ σκυτόμος, καὶ ὁ τέκτων, πρῶτον καὶ σπήρου ὄνομα, καὶ σκεύος, καὶ οὕτων οὖσαν ἄλλου τῶν πρὸς τὴν τέχνην. Καὶ διὰ σεμνότεραι, οὕτι καὶ ταύτας ἀπὸ τῶν όνομάτων ὡσαυτῶς ἀρχονται διδάσκειν; Τί γὰρ πρῶτον ἐμαθὲς ἐν γεωμετρίᾳ; Στιγμὴν, καὶ γραμμὴν, καὶ ἐπίπεδον, καὶ ἐπιφάνειαν, καὶ σχήμα τριγώνον, καὶ κύκλον, καὶ τὰ ὀμοια, εἰδέναι τε ὃ τι ἐκαστὸν αὐτῶν, καὶ όνομάζειν ὀρθῶς.

[1-5] First of all, what do you learn to practice cithara playing? Being able to touch and name each one of the chords. And what should you know to practice grammar? Discerning each of the letters and naming them. The same is also true for the other arts, for which we begin to learn the names: the metalworker, the leather-cutter, and the carpenter. First one learns the names of iron and carrying-pails and all of the other objects used for that craft. And what about the other more serious skills? Do they not begin with the discovery of the names of things? What does one learn first in geometry? Knowing and correctly naming the point, the line, the plane, the surface, the shape of a triangle, the circle, and other similar things.

Pinning down the proper terms is a necessary first step. This tendency is, however, not unique to Rufus. Indeed, it is a commonplace in philosophical texts that investigations should start with the terms being used. Epictetus (*Diss.*I.xvii.12) attributes this idea to Antisthenes and Socrates. Rufus is not alone among the later medical authors to endorse this idea. Galen, in particular, emphasizes the importance of terminology, and though he

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wrote later than Rufus, it is useful to turn to his account so as to flesh out Rufus’. Galen later suggests that all philosophico-medical training should begin with a reading of his (lost) treatise *On the Correctness of Names* (*Ord.Lib.Prop.*XIX.61). But beyond that, he says this work was written *because* of those who use words badly (*Ord.Lib.Prop.*XIX.61). The charges against these individuals are numerous: they are unclear and ambiguous; they invent words when good ones already exist; they find differences in meaning between words when none exist; and they use old Attic words, use metaphors in inappropriate contexts.

The correctness of names is the main topic of Plato’s *Cratylus*, and it is a text lurking in the background of many of these rhetorical discussions. In the work, Plato distinguishes two principle questions: (1) Is a name itself fitting? and (2) is the name correctly applied? Socrates responds to Hermogenes’ challenge that no one is able to suggest that the correctness of names is determined by anything other than convention (*Crat.*384c10-d2).

A name is, therefore, inappropriate if it does not reflect the nature of the object named. More specifically, in discussing the process of naming, Socrates says that if the name-maker could imitate the essential nature of things with letters and syllables, he would show what the thing *really is*. But in 424D, it is urged that we must know how to apply each letter with reference to its fitness (*kata ten homoioteta*), whether one letter is in question or many. Just as with painting, in making an imitation, sometimes one needs one color, sometimes a mixture, as the picture requires. However, names can never be *like anything* unless those elements from which the names are composed exist in the first place and possess a likeness to the things which the names imitate (434B). Nonetheless,

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all agree on the importance of names for teaching. Socrates claims that names are the instruments by which we teach one another (388b), while Cratylus explains that names themselves are teachers (433d, 438a).

In a similar discussion, in *Theaetetus* 202A, Socrates relates that he used to imagine certain people saying that primary elements admit of no rational explanation and can only be named. For any sort of qualification would add to its existence or non-existence. In 202B, he explains that complex things, on the other hand, are composed of discrete elements. And a combination of names is tantamount to the essence of reasoning. Elements are not objects of reason, only of perception. But combinations are objects of knowledge.

The central issue in Hellenistic theories of language is whether names are products of imposition (thesis) or spontaneous process (phusis). As Origen questions:

πότερον, ως οἴεται Ἀριστοτέλης, θέσει εἰσὶ τὰ ὀνόματα ἢ, ως νομίζουσιν οἱ ἀπὸ τῆς Στοᾶς, φύσει, μιμομένον τὸν πρῶτον φωνὸν τὰ πράγματα, καθ’ ὅν τὰ ὀνόματα, καθὸ καὶ στοιχεία τινα τῆς ἐτυμολογίας εἰσάγουσιν, ἢ, ως διδάσκει Ἐπίκουρος, ἐτέρως ἢ ως οἴονται οἱ ἀπὸ τῆς Στοᾶς, φύσει ἐστὶ τὰ ὀνόματα, ἀπορρηξάντων τῶν πρῶτων ἀνθρώπων τινᾶς φωνᾶς κατὰ τῶν πραγμάτων.

Are names, as Aristotle thinks, the result of imposition (thesei)? Or are they rather, as the Stoics believe, the result of nature (phusei), claiming that the first sounds imitate the things to which the names belong, on the basis of which they propose some elements of etymology? Or are the names, as Epicurus teaches, a result of nature but in a different way from that of the Stoics, since the first men uttered certain sounds concerning the things? (Origen, *Contra Celsum*. I.24.9-16)

Aristotle suggests that names are purely conventional; they are just symbols, and nothing about names is natural – neither in the sense that names are necessary representations of their objects, not that they are products of nature. In contrast, the Stoics suggest, like Socrates in the *Cratylus*, that names are products of a name-giver, who (fairly accurately) designs names to resemble their objects. Names imitate objects by means of the first
sounds (protai phonai) from which they are composed. According to Socrates, for instance, the “l” sound evokes softness. And likewise for the Stoics, the first sound will generate in the hearer the same sensation as perception. Lana (wool), with its soft “l” will sound soft like wool. It is not to say that names are always the best way to understand the nature of objects, but it is a good starting point.

The Stoics, in particular, were interested in etymology; Chrysippus likely invented the term (DL 7.200). Stoics took the basis of names to be nature. Accordingly, words were formed at the beginning of human history, though some names are given by nature (phusis) and others by convention (thesis). According to the Augustan De Dialectica (10.1-3), the first words were onomatopoetic, and these primary words were later transferred to items that resembled them (10.10-13). Similarly, Lucretius 5.1041 notes that the first words were the result of spontaneous vocalization.

Following on this tradition is Augustine’s De Dialectica 6, which was probably based on Varro’s lost works on grammar. In this work, Augustine argues that the origin of words is based on three things: (1) onomatopoetic similarity (similitudo), (2) proximity (vicinitas), and (3) opposition (contrarium).

In the medical realm, for example, Galen says that the “carotid” artery was named because it is supposed to induce stupor if cut (PHP.5.263), but it, in fact, does not. The good of language, Galen tells us, echoing Socrates, is its didactic function. However, in medicine, many names were not coined by experts, but rather by misinformed doctors. And these inapt names stuck. Galen cites the case of the word “asplanchnos,” literally “without internal organs.” But it was also used by non-medical writers to describe those

133 Crat. 434c4-5.
134 Varro fr. 113, Goetz-Schoell.
who “pity non one” (PHP.5.316). However, Galen says that in this case, the word is fitting since the liver is where the desiderative part of the soul lies.

As another illustrative example, Galen notes that the standard word for membrane is “chiton” (UP.III.290-1). But at UP.488, Galen notes that that pericardium is not really a chiton since tunics are always in contact with that which they surround. Yet the pericardium only touches the heart when the organ is in its expanded state. Nonetheless, Galen still uses the term in AA.II.595. Since for him, finding the correct word is less important than understanding the medical function of an object. It is essential for anyone who wants to discover the truth in these matters to try to rid himself of all additional beliefs that arise as a result of the names, and to go straight for the actual substance of things (MM.X.44).135

Another example involves the word “apepsia,” which is used to describe both bad digestion and no digestion. Galen suggests that it is better to use the word “duspepsia” to describe the former condition, especially if it necessitates a different type of treatment (Supp.Diff.VII.46). In addition, Galen criticizes Aristotle’s use of the word “brain.” For animals with no head, Aristotle call the organ “something analogous to the brain,” which is to imply that the brain, writ proper, is only to be found in the head.136

As for the role of words in teaching, Galen tells us that Words are of little help at all to us in gaining knowledge of things, but only in teaching. And if someone gave no names to things yet was still able to know about those things and to understand what conditions they suggested, he would seem no less able to do this than those who gave

136 “The enkephalos has above all got its name from its position. It has been named in this way because it lies in the head. But because in the case of those animals which do not have a head, we find it in the chest area, we shall not say that in these cases it is something else and merely analogous to the enkephalos, but rather we shall say that it is itself and enkaphalos, and that the old word does not become it.” (UP.III.626)
things names. (Diff.Puls.VIII.496). Since instruction necessitates the use of a common language, it is best to use Attic Greek (Thras.V.868-9). However, one could easily use a foreign language, if others were to follow suit:

εἰ μὲν οὖν ἄπαντες συνθέμενοι μίαν διάλεκτον ὁσπερ νόμισμα καινὸν ὕπο ψηφίσματος εἰσηγήσαντο, τάχα ἂν ἐπειράθημεν ἐπιλαθέσθαι μὲν τῆς τῶν Ἑλλήνων, ἑκμαθεῖν δὲ τὴν πρὸς ἐκείνων νομοθετεῖσαν.

If everyone were to agree to use one language, as if it were new currency, then perhaps by order, we could try to forget the language of the Greeks and learn the one established by these people (Diff.Puls.VIII.567-8).

When many words mean the same thing, Galen explains that we can use all without discrimination, since no difference is implied (Symp.Diff.VII.108).

Nomenclature in Rufus’ Texts

As noted in the introductory information, Rufus’ Onom. and Anat. are, generally, in agreement in their use of anatomical terminology. Turning to specifics, in Onom. 141.5 explains that “staphule” is limited to inflammation of the uvula, while Anat 173.8 explains that the word is used for the uvula itself. Anat. 181.8 and Onom. 1146.12 use different terms for the ureters. “Neuron” (11.16, 481, and 502) is used variously for ligaments, tendons, and other sinews. Likewise, various terms are used for vessels: phlebes, angeion, ochetos, and poros. Aelion tells us that tenthreniodes was used by Democritus in a fragmentary work Anatomy (L VIII 538.6) to describe “honey-comb” lungs. Onom.159.13-160.5 quotes a passage from the lost work Cnidian Sentences, where the word “alopekes” (foxes) was used to describe the lumbar muscles.

But generally speaking, how does Rufus suggest one go about the process of anatomical naming? One can name a part from its prominent features -- the duodenum,
for instance is so-called because it appears to possess twelve fingers. Alternatively, parts can named from taking pre-existing terms and adding a prefix. As an example, we have *metakarpion* (the after-wrist) and *hyposphondulon* (the lower vertebra). Another option for naming is to draw an analogy between one body part and another or between a body part and some object. Taking first the comparison of two body parts, Herophilus explains the *chorioeides* is “after-birth like” And the term “*amphiblestroëides*” (net-like) is used for the retina.

Of course, numerous difficulties attend the process of naming. In the first place, alternative names might be used for the same part, a phenomenon we see frequently in Rufus’ texts. *Pareiai* (side of the face), for example are also called *siagones* and *gnathoi*. And in the same way, there are three names for the uvula: *kion*, *gargareon*, and Aristotle *staphulophoron* (*Onom*. 141.3) And further, there are two words for the palate: *ouranos* and *hyperoa* (*Onom*. 141.3); two for the sacrum: *hieron ostoun* and *hyposphondulon* (*Onom*. 148.1); two for the spinal marrow: *muelos notiaios* and *rachites* (*Onom*. 153.13); and three for the bronchia: *bronchiai*, *seranges*, and *aortai* (*Onom*. 155.10).

An allied difficulty is that one term is often used to describe multiple parts. “*Thorax*” describes both the area between the clavicle and hypochondria and the entire area between the clavicle and genitalia (*Onom*. 135.2). “*Omos*” means both the head of the humerus and the whole limb to which it is attached (*Onom*. 142.8). “*Xeir*” is both the hand and the entire arm (*Onom*. 149.2) “*Sarx*” suggests variously: the area between organs, the flesh of the muscles, and coagulated material found in in healing wounds

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139 *Onom*. 156.4.
140 *Onom*. 154.9 and Celsus *De Medicina* III. 7. 13b.
And sometimes “stomachos” is used for the esophagus, the neck of the bladder, the neck of the womb, and the vagina (Onom. 155.7 and Anat. 174.10).

Metaphors in Rufus’ Texts

When faced with an as yet unnamed body part, Rufus has a marked tendency to turn to metaphors and analogies. As I shall describe, these metaphors reach into various aspects of human behavior and culture, including diet, art, and technical skills. Though Rufus’ rococo use of metaphors is a distinguishing mark of his anatomical texts, as a general statement, analogies were used from the beginning of Greek science, but especially during the fourth and fifth centuries. Anaxagoras, as an early example, explained that certain phenomena should be used to explain what is unseen. These metaphors, in many ways, allowed scientists to sidestep difficulties with naming, as objects could be noted based on their similarity to other objects. To delve more deeply into Rufus’ typology of metaphors, it would be useful, in the first place, to note which metaphors are most prominent in his works. In the Anatomy, food metaphors are common. The second membrane of the eye looks like a cluster of grapes; the third membrane of the eye is like the white of an eye; the uvula is like a bunch of grapes; the color of the liver is like lentils; the color of the spleen, like wine; the kidney, also like lentils; and the testicles, like porridge in texture.

Other types of metaphors in this work are geographical ones: the glands of the tongue are like isthmuses; linguistic: the colon looks like the letter pi; geometrical: the heart is shaped like a cone; instrumental: the esophagus is like a trumpet, the scrotum like a spear-case, the uterus like a cupping instrument; functional: the pylorus is like a gate
keeper; and anatomical: the gallbladder resembles the bladder, the spleen looks like a footprint, and the duodenum like twelve fingers. What these metaphors have in common is their link to human culture and biology. In many ways, this goes without saying: We liken unfamiliar objects to those we know. And we are especially familiar with our own bodies and habits.

Turning to Rufus’ *Onom*, the use of metaphors is just as extensive in that work. Again we find food metaphors: nails are like grapes, for instance. But what is especially notable in this work is Rufus’ use of body parts to describe other body parts. Several organs and limbs, for instance, are described as having heads: arms (the shoulders), testicles, the larynx, the heart, and the spleen. These metaphors are directional in nature; the “head” is always the top of the body part in question. Similarly, the bladder, liver, and uterus have “necks,” connecting structures leading from the “head.” The uterus also has “shoulders,” the belly has a “mouth,” the brain has a “belly,” and the heart has “ears” (auricles) flapping at its sides.

It should be reiterated that these are the central body parts that Rufus highlights at the start of his *Onom*. Certain body parts of simply more defining humans, like the head. However, it is worth noting that the head could mean multiple things and could be interpreted in multiple ways -- the top of something or the sensory portion of something, for instance. But Rufus tends to pick out the orientational element. And, of course, tied to this is the expectation that his readers/listeners will turn first to the orientational/spatial option as well.

But there are many options for orientation too. Rufus tends to use “head” to describe the top of something, but he could just as easily have used “crown.” Likewise,
“shoulders” and “ears” are used to describe the sides of things, but “flanks” would have been equally applicable. Rufus seems to pick out the most readily observable parts, and for the most part, he sticks with them throughout.

Comparanda: Metaphors in the Hippocratic Corpus

As Lloyd notes, in the Hippocratic corpus, there are many examples of analogies in anatomy, physiology, and embryology. The Hippocratic authors, like the Presocratic philosophers, tried to explain new phenomena by comparing them to familiar objects which could be seen directly. In the work On Breaths, for example, the author compares steam coming off cauldrons of boiling water and what causes a patient to yawn at the start of fever. When water starts to boil, steam is driven off, and similarly, in a body, when the temperature rises, air is forced through the mouth. The same process occurs with sweating (8.96.15).

Similarly, in On the Nature of the Child L.VII.488.13, the author describes the formation of the membrane around the seed as being like the crust that forms on cooking bread. Both happen when the seed and bread are heated and “distended by air.” And in On Diseases IV.LVII.584.15, the author tells us that when the body is heated, the humors separate like churning butter, with bile on the top, then blood, then phlegm, then water. But when the body cools, the effect is more like adding fig juice to milk (590).

Hippocratic comparisons to plants are just as numerous. In On Diseases IV.LVII.544.17, the stomach is described as drawing in nutrients like plants’ roots taking in food from the soil. In On the Seven Month Child L.VIII.436.8, the fetus ruptures its surrounding membrane like ripe ears of corn. And in On the Eighth Month Child
LVII.458.2, the umbilical chord is likened to the stalk of fruit. In On Generation
LVII.482.14, the size and shape of an embryo is determined by the womb in a way similar to plants grown in different containers. And in On the Nature of the Child
LVII.498.3, the growth of human limbs is like the branches of trees. The author of On Ancient Medicine recommends the use of analogy in medicine. As a general statement, Hippocratic authors use hosper or hos followed by houto kai or houto de in their metaphors.¹⁴¹

But there are, of course, possible problems with the extensive use of metaphors and analogies. In the first place, one runs the risk of neglecting obvious points of difference between the objects being compared. Illustrations can also be obscure, rendering useless the explanatory potential of metaphors. And beyond that, one can easily be misled by superficial similarities, establishing shaky comparisons. Analogy can always be mistaken for demonstration. And there is the temptation to ignore differences between objects compared.

Metaphors abound in Plato’s and Aristotle’s works. In Tim.78b, Plato’s account of respiration is modeled on a fish-trap, since it is a woven object with a funnel at its entrance. And in the same work, Plato explains that the world is a living creature with a soul.¹⁴² Aristotle, in Organon and Rhetoric, criticizes the use of metaphors and analogies, comparing them with syllogisms. Yet he uses metaphors in several of his other works, nonetheless, especially ones between terrestrial and physiological events. Earthquakes are like bodily spasms.¹⁴³ Aristotle also picks up Empodocles’ analogy of perspiration being

¹⁴¹ See, for instance, Mul.LVIII.12.17 and Morb.IV.39.558.
¹⁴² Plato.Tim.31b-34b.
like the sweat of the earth. But, of course, this analogy does not explain why sweat is salty in the first place.

Aristotle makes further comparisons between species. Feathers, for instance, are like the scales of fish, because they serve the same function (dunamis). Plant metaphors make an appearance as well: Baldness in humans is like the shedding of leaves; both are due to the loss of warm moisture. And beyond that, Aristotle makes comparisons between parts of the body and objects outside of the body. As an example, testicles are like stones weights attached to a loom, as they serve to keep the seminal passages taut.

Aristotle says that Alcmaeon compares the growth of pubic hair to the flowering of plants before they produce seed. According to Aet.V.16.3.DK.17, Alcmaeon held that the mammalian embryo takes in food through its whole body like a sponge. But Rufus says that Alcmaeon held that the embryo takes in food through its mouth while still in the womb. And Aristotle also says that Alcmaeon promotes the idea that the white of the egg (to leukon) is its milk. Similarly, Diseases IV.39 compares blood vessels to pipes. Plant metaphors also abound. In The Seed 9, the author explains that the size of a growing cucumber is determined by its container, and in the same way, an embryo is shaped by the womb containing it. And in Chapter 10 of the same work, the author explains that both trees and human body parts will become deformed if their growing space is compromised.

144 Ibid.356b4.
145 Arist.PA.645b8.
146 Arist.GA.783b8.
147 Ibid.717a34.
148 Arist.HA.581a14.
149 Orib.III.156, CMG.VI.2.2.136.28.
150 Arist.GA.752b22.
At the heart of these vitalist notions of the cosmos is the extended metaphor that natural objects are alive and that the origins of things are given in terms of birth and reproduction. Anaximenes was one of the first to compare the world writ large and humans: “Just as our soul, being air, holds together, so too does wind or air enclose the whole world.” And in the Hippocratic corpus, we see in On Regimen I.LVI.484.17 that fire is arranged in the body like a copy of the whole. Likewise, the belly is like the sea. In On Sevens II, the geographical areas of the earth are likened to parts of the body. The Peloponnese is equated with the head, and the Thracian Bosphorus is like feet.

The particular analogy that man is a microcosm of the universe finds place both in Rufus’ corpus and, more generally, in a range of Greek scientific and philosophical texts. This tendency is based on Democritus’ principle that “man is a small universe” (anthropos mikros kosmos) Noteworthy examples in the Hippocratic corpus include De victu 6.462-663, De Hebdomadibus 8.616-73, and De Carnibus 8.576-83. The first of these cases explains that the body is an imitation (apomimesis) of the universe. While De Carnibus gives a description of the creation of the universe and suggests that man is composed of the same materials. In a similar way, De Natura Hominis invokes “meteorological medicine,” making an association between the humors and seasons and suggesting that climatic changes affect physiology (2.3). And we find a similar point in Aristotle Meteorologica 1.14.351a26-28:

ἀρχὴ δὲ τούτων καὶ αἴτιον ὅτι καὶ τῆς γῆς τὰ ἐντός, ὥσπερ τὰ σώματα τῶν φυτῶν καὶ ζώων, ἄκμην ἔχει καὶ γῆρας.

But we must imagine that these changes follow some order and cycle. The principle and cause of them is that the interior of the earth has periods of maturity, like the bodies of plants and animals.

152 DK 68 B 34.
And Book 2 explains that the sea is a kind of sweat exuded by the earth when heated by the sun.\textsuperscript{153} Also relevant are Seneca’s comments in his *Naturales Quaestiones* 3.15.\textsuperscript{154}

The earth has roads for both air and water, and the human body is used as a reference. Similarly Book 6’s description of earthquakes explains that we have receptacles for breath (*receptula animae*), and the whole body of the earth (*totum terrarium omnium corpus*) has a similar sort of passage system(6.18.6).\textsuperscript{155} But this prominent use of analogical language begs a more general question: Are we hard-wired to think metaphorically? That is, can we not help but use metaphors to describe unknown items? One approach to searching for an answer might be to study a vast array of languages in order to observe the relative importance of metaphor to instruction. It seems likely that metaphor would be found in all of them to some extent, as it is a useful shorthand for describing and explaining objects, acts, and qualities that were previously unfamiliar. For example, when meeting someone outside our circle of acquaintances, our immediate urge is usually to identify that person with qualities belonging to someone within our circle: this gives us a frame of reference for determining how to interact with the person as well as determining how to describe this person to someone else. In the realm of law (at least in those systems influenced by English common law), metaphor is

\textsuperscript{153} This is attributed to Empodocles 2.3.357a24-b21. See DK 31A66 and 31B55.
\textsuperscript{154} “The idea appeals to me that the earth is governed by nature and is much like the system of our own bodies in which there are both veins, receptacles for blood, and arteries, receptacles for air. In the earth also there are some routes through which water runs, some through which air passes. And nature fashioned these routes so like human bodies that our ancestors called them ‘veins’ of water.” trans. T.H. Corcoran (1929).
\textsuperscript{155} “Our bodies also do not tremble except when some cause disturbs the air inside, when it is contracted by fear, grows weak in old age, becomes feeble with sluggish veins, is paralyzed by cold, or is thrown from its normal course under an attack of disease. For, as long as the air flows without damage and proceeds in its usual way, there is no tremor in the body; when something happens which inhibits its function, then it no longer is strong enough to support what it had maintained in its vigor. As it fails it causes to collapse whatever it had sustained when it was intact.” trans. Le Blay (2005).
important insofar as judges and lawyers constantly identify present cases with earlier ones (arguing that Person A is like Person B, or Situation A is like Situation B) to search for precedents for handling particular types of situations.

Of course, our language/culture teaches us to privilege some types of metaphors over others. If, for instance, someone were to say that Germany is the heart of Europe, we might understand it functionally (i.e. Germany holds some critical role in European politics) rather than, say, spatially (i.e. Germany is in the upper left quadrant of Europe), though both could be possible. However, we would come to this functional understanding knowing something about German and European history; it might be different for someone without that knowledge. It seems that a metaphor is less important in describing something relatively concrete like location than it would be in describing something more complex like politics or economics, which is perhaps why we gravitate toward the latter. When identifying someone new with someone familiar, we tend to start with appearance (visual and aural) and then use personality traits as a secondary (and in the end, more important) filter.
Chapter 4
Rufus as a Sophist and Lexicographer

For over forty years, scholars have argued that discussion of the Second Sophistic should extend beyond Dio Chrysostom and Philostatus and should reach into the realms of science and medicine. Most notably, Swain, Bowersock, Von Staden, and Gleason have all argued that Galen should be viewed through this lens.\(^{156}\) There is little doubt that Galen deserves a place in discussions of Hellenism and Classicism, but the question I shall address in this section is whether Rufus does as well. The quick answer seems to be “yes,” but only to an extent. There are some obvious visual markers in Rufus’ works that set him off as a performer: He asks his audience to look at various body parts, and he uses deictic forms. And the fact that Rufus is carrying out his dissection in front of a live audience underscores its performative elements.

Rufus delivers what can only be called a tidy and efficient show. His preface indicates that he has his readers’ and audience’s needs in mind; he is trying to win them over with his rehearsed performance. He has good judgment about what material to present (and in what order), and he can sift through a large amount of data. Rufus also evinces a keen interest in linguistic purity, a marker of the Second Sophistic.

But in terms of self-presentation, Rufus veers a bit from the norm. Most sophistic doctors tend to use first person pronouns frequently in their works. They also tend to

adopt a combative tone. While Rufus does use the first person singular pronoun, it is often in the gentler form of “dokei moi.” And while he notes rival interpretations, he is not aggressively polemical. It is more the case that Rufus mentions alternative views to be as comprehensive as possible, not to be critical. On a spectrum of doctors who are (a) especially flamboyant, and (b) those who keep to themselves, Rufus seems to fall more into the second category. Throughout his works, he seems mild-mannered and less ambitious.

Even more problematic is the fact that Rufus seems to lack any obvious Roman connection. For most classicizing doctors, trying to get imperial patronage goes hand-in-hand with their scholarly activities. As I shall discuss, Rufus is often associated with Statilus Crito, who was served as the imperial physician under Trajan. But again, there is no evidence that Rufus had a similar role. In fact, there is no evidence that Rufus ever went to Rome. I shall argue that Rufus’ sophisticated reticence was, in part, a function of being an early participant in the sophisticated movement. But the fact that he was not an active seeker of imperial patronage suggests either that he was independently wealthy, or for whatever reason, he was content to keep mostly to himself.

That being said, there are plenty of (proto-) sophisticated elements in Rufus’ corpus, so before detailing them, it would be useful to give some background to the movement. For Philostratus, the Second Sophistic implied performances of epideictic oratory, a mixture of scholarship and theatrics. It was a phenomenon that existed throughout the Greek-speaking areas of the Roman empire during the 1st-3rd centuries CE. Sophistic displays were occasions when the male elite would assemble to hear oratorical declamation, and the performer would attempt to impress his audience with his education.
The common periodization of this upsurge in Hellenism and classicism begins in the reign of Nero. With Hadrian, it takes another turn, and participants up the ante in terms of their display. Rufus, then, is a little early for this, but as I shall discuss, there are glimmers of iatrososophism in physicians predating him, so it is appropriate to question the extent of Rufus’ participation.

Of course, we should not expect Rufus’ text -- or any medical text -- to fit perfectly into the category of oral performance, as Greek scientific literature takes a variety of forms: poetry (Hesiod, Parmenides, Empedocles, Xenophanes, Nicander, Aratus); letters (Epicurus); dialogues (Plato); speeches, handbooks, compendia, aphorisms, and commentaries. Within the Hippocratic corpus, texts are categorized as gnomai (sentences); logoi (speeches); parangeliae (instructions); aphorismoi (aphorisms); prognosies (prognoses); nomos (law); and dogma (decrees).\(^{157}\) Certainly, this range is to be expected in the Hippocratic corpus, which spans more than sixty works and over two hundred years. But we find it too in Aristotle: his corpus contains akroaseis (lectures); problemata (problems); epitomai (epitomes); diaireseis (divisions); epikheiremata (essays), and pragmateiai (treatises).

Many treatises of the Hippocratic corpus refer specifically to oral presentations and set the stage for later, more sophistic displays. \textit{On Ancient Medicine} begins by referring to “all who have attempted to speak or write on medicine and who have assumed for themselves a postulate as a basis for their discussion.”\(^{158}\) \textit{On the Nature of Man} speaks of an audience who “used to listen to people who speak about the nature of

\(^{157}\) For a summary of the Hippocratic range see Jouanna (1992), 527-63.

\(^{158}\) \textit{On Ancient Medicine} 1.1 570L.
man beyond what is relevant for medicine." And later in that work, the author even mentions a rhetorical contest:

Γνοή δ’ ἄν τις τόδε μάλιστα παραγενόμενος αὐτέοις ἀντιλέγουσιν· πρὸς γὰρ ἀλλήλους ἀντιλέγοντες οἱ αὐτοὶ ἀνάρξει τῶν αὐτέων ἐναντίον ἀκροατέοιν οὐδὲποτὲ τρίς ἐφεξῆς ὁ αὐτός περιγίνεται ἐν τῷ λόγῳ, ἄλλα ποτὲ μὲν οὕτος ἐπικρατεῖ, ποτὲ δὲ οὕτος, ποτὲ δὲ ὃ ἀν τύχῃ μάλιστα ἡ γλώσσα ἐπιρρήεισα πρὸς τὸν ὄχλον. Καίτοι δίκαιον ἄστι τὸν φάντα ὁρθὸς γινώσκειν ἀμφι τῶν πρηγμάτων παρέχειν αἰεὶ ἐπικρατέοντα τὸν λόγον τὸν ἐωτοῦ, εἴπερ ἐόντα γινώσκει καὶ ὁρθὸς ἀποφαίνεται. Αλλ’ ἐμοί γε δοκέουσι οἱ τοιούτοι ἀνθρώποι αὐτοὶ ἐωτοὺς καταβάλλειν ἐν τοῖς ὁμοίωμα τὸν λόγον αὐτέων ὑπὸ ἀσυνεσίης, τὸν δὲ Μελίσσου λόγον ὁρθοῦν. (Hp. Nat.hom 6.34 L) (P 94)

The best way to realize this is to be present at their debates. Given the same debaters and the same audience, the same man never wins in the discussion three times in succession, but now one is victor, now another, now he who happens to have the most glib tongue in the face of the crowd. Yet it is right that a man who claims correct knowledge about the facts should maintain his own argument victorious always, if his knowledge be knowledge of reality and if he set it forth correctly. But in my opinion such men by their lack of understanding overthrow themselves in the words of their very discussions, and establish the theory of Melissus.160

There is a similar discussion in the first book of On Diseases:

"Ὅς ἂν περὶ ἱςιος ἐθήλη ἐρωτὰν τε ὁρθὸς, καὶ ἐρωτῶντι ἀποκρίνεσθαι, καὶ ἀντιλέγειν ὁρθὸς, ἐνθυμέσθαι χρή τάδε…ταύτα ἐνθυμηθέντα διαφυλάσσειν δεῖ ἐν τοῖς λόγοις· ὃ τι ἂν δὲ ταύτων ἀμαρτάνη ἢ λέγων, ἢ ἐρωτῶν, ἢ ἀποκρίνομενος…ταύτῃ φυλάσσοντα χρή ἐπιτίθεσθαι ἐν τῇ ἀντιλογίῃ (Hp. Morb 6.140-42 L)

Anyone who wishes to ask correctly about healing, and, on being asked, to reply and rebut correctly, must consider the following…When one has considered these questions, one must pay careful attention in discussions, and when someone makes an error in one of these points in his assertions, questions, or answers…then one must catch him there and attack him in one’s rebuttal.161

It is likely, then, that some works of the Hippocratic corpus were delivered orally. There are, for instance, Georgianic figures of speech including parallelism, antithesis, and

159 On the Nature of Man 1.1 6.32L.
161 Ibid, 94.
anaphora in the *Art of Medicine* and *On Breaths*. And as Diocles of Carystos tells us, oral presentation was preferred, even in times when literacy was well-established. So there might well be an oral component to medical literature that is not clearly sophistic.

Lexicography and the Second Sophistic

In listing the names of the parts of the body and in presenting this information before an audience, Rufus marks himself not only as a medical performer, but also as a lexicographer. Of course, these categories are not mutually exclusive. Like sophistry, lexicography was also manifestation of Hellenism. And the interests of the lexicographers were, for the most part, in line with the interests of the iatrosophists. Most fundamentally, there is a concern for linguistic purity – that is, an attachment to Attic Greek and a concerted avoidance of barbarisms and solecisms. Both lexicographers and iatrosophists wanted to prove to their audiences that they were classically educated and that they were well-versed in Hippocratic medicine.

As the preface to his *Onom.* makes clear, Rufus’ project is about words. One needs to get a handle on nomenclature before doing anything else.

(1-5) Τί πρῶτον ἔμαθες ἐν κιθαριστικῇ; Κρούειν ἐκάστην τῶν χορδῶν καὶ ὀνομάζειν. Τί δὲ πρῶτον ἔμαθες ἐν γραμματικῇ; Γνωρίζειν ἐκαστὸν τῶν γραμμάτων καὶ ὀνομάζειν. Οὐκοῦν καὶ τὰς ἄλλας τέχνας ὀσαύτος ἀπὸ τῶν ὀνομάτων ἄρχονται διδάσκειν, καὶ ὁ χαλκεύς, καὶ ὁ σκυτοτόμος, καὶ ὁ τέκτων, πρῶτον καὶ σιδήρου ὀνομα, καὶ σκεύους, καὶ ὀυτινοσὸν ἄλλου τῶν πρὸς τὴν τέχνην. Καὶ ὅσα σεμνότερα, οὐχὶ καὶ ταύτας ἀπὸ τῶν ὀνομάτων ὀσαύτως ἄρχονται διδάσκειν; Τί γὰρ πρῶτον ἔμαθες ἐν γεωμετρίᾳ; Στιγμὴν, καὶ γραμμήν, καὶ ἐπίπεδον, καὶ ἐπιφάνειαν, καὶ σχῆμα τρίγωνον, καὶ κύκλον, καὶ τὰ ὄμοια, εἰδέναι τε ὅ τι ἐκαστὸν αὐτῶν, καὶ ὀνομάζειν ὀρθῶς.

163 Wellmann (1912), 160.
[1] First of all, did you learn to practice cithara playing? Being able to touch and name each one of the chords. And what must you know to practice grammar? Discerning and naming each of the letters. The same is also true for the other arts, for which we begin to learn the names: the metalworker, the leather-cutter, and the carpenter. First one learns the names of iron and carrying-pails and all of the other objects used for that craft. And what about the other more serious skills? Do they not begin with the discovery of the names of things? What do you learn first in geometry? Knowing and correctly naming the point, the line, the plane, the surface, the shape of a triangle, the circle, and other similar things.

And in his epilogue, Rufus returns to the words, saying that he was as inclusive as possible:

(233.) Τὰ μὲν πλεῖστα τοῦ ἀνθρώπου οὗτῳ χρή καλεῖν· εἰ δὲ τι ἐν τούτοις καὶ παραλέλειπται, οὐ μὴν δίκαιον τὰ πολλὰ ἀτιμάσαι διὰ τινὰ ὀλίγα παροφθέντα

[233] These, then, are the majority of the terms that should be used to describe the parts of the human body. If anything among these has been omitted, it would be unjust to hold the bulk of terms in contempt simply because a few have been neglected.

Since Rufus is providing a list of words, a glance at other medical lexica might prove useful. The earliest Hippocratic lexica were written by Xenocritus of Cos and Bacchius of Tagara, though there is little evidence about the former. Erotian’s Hippocratic lexica, composed in the first century CE, relies heavily on Bacchius, whom he cites nearly seventy times.164 There are, however, difficulties with the evidence: an unknown redactor abridged and alphabetized Erotian. Bacchius’ lexicon was similarly edited by Epicles the Cretan, and Erotian drew from this version. Nonetheless, Johannes Ilberg and Ernst Nachmanson argue that it is possible to reconstruct Erotian’s “Urglossar.”165 Erotian went from treatise to treatise, describing words from one treatise before moving on to the next.

165 Ibid, 551.
Erotian suggests in his preface that “obsolete usage” motivated Greek lexicography. And Galen claims that Bacchius only referred to obscure words (glottai).\footnote{166 Galen.\textit{Exp. voc. Hipp. Prooemium.} XIX.64-5.} While it is true that the glossai of Philitias, Simias, and Zenodotus interpreted rare words from epic and lyric, Bacchius seems to have investigated a wider range: obsolete words, morphologically interesting words, and words needing semantic clarification. He even selects some common words like halis, which have become “semantically bleached.”\footnote{167 Von Staden (1994), 565.}

Of particular note in Bacchius lexicon is his reliance on non-medical texts, particularly Homer, Democritus, and Aristophanes, to explain Hippocrates. Erotian follows suit, and himself references Democritus, Herodotus, Thucydides, Plato, Aristotle, Praxagoras, and Homer. Herophilus and Erasistratus make frequent appearances, but the orators are absent. Certainly this begs the question: Why should a lexicographer turn to poetry to explain scientific texts? The answer seems to be that there was no sharp distinction between “literary” and “sub-literary” works. And beyond that, if the goal is to explicate confusing words, the tools chosen to do so are not all important.

Most literature of the period used archaizing language, that of Athens in the 5th and 4th centuries BCE. In particular, it used classical forms -- the double tau instead of the double sigma, for instance, and the deictic iota. There was also a reinstitution of the dual; the dative case; the middle voice; and the optative mood, all of which had slipped from popular use. The ability to Atticize was seen as a marker of the elite and a sign of cultural purity. Non-Attic elements, on the other hand, were considered “barbarisms.”\footnote{168 Whitmarsh (2005), 43.}

There is, of course, the question of what makes a term “Attic.” To aid this task, there are lexica which define correct usage: Harpocraton’s \textit{Usage of the Ten Orators}, Aelius
Dionysius’ *Attic Words*, Phrynichus’ *Selection of Attic Words and Phrases*, and Pollux’s *Onomasticon*. As Whitmarsh notes, these lexica are “normative,” in the sense they prescribe, rather than describe language. Yet it is difficult to explain what constitutes a pure standard, so “experts” are needed to contest the rules. But Atticism is more than just the correct use of grammar and vocabulary. It is also a means of exploring cultural identity.

As there was no codification for Atticism as such, lexicographers of the 2nd century had to establish authority within their own works. They did this largely by appealing to the established orators of the 5th and 4th centuries BCE. Turning to some specific lexicographers, Phrynichus, who lived in the 2nd century CE, championed the use of “pure” Greek by quoting liberally from Plato, Demosthenes, Thucydides, Xenophon, Aeschines, Socraticus, Critias, Antisthenes, and Aristophanes. His *Ecloga* compiled improper uses of language (*tas adokimous ton phonon*) and argued that Greek must be used “in the old way” (*archaios*) (203). Phrynichus aimed to avoid words not found in Classical texts, preferring the Attic equivalents. So for instance, *charin eidenai* (to give thanks) replaced *eucharistein*. The *Praeparatio Sophistica* was the longer of Phrynichus’ two works. Its purpose was to supply useful words for the rhetor. Again in this work, Phrynichus quoted from Attic writers of the 5th and 4th centuries BCE. As a general remark, his works were prescriptive rather than descriptive, giving phrases without suggesting *how* to use them. But beyond appealing to his familiarity with the Attic dialect, Phrynichus also sought to promote himself by seeking imperial patronage: His

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169 Ibid, 45.
170 Swain (1996), 43.
171 See Georgakopoulou and Silk (2009), 100 for an in-depth discussion.
Ecloga were dedicated to Cornelianus, the imperial secretary, and his Praeparatio
Sophistica was dedicated to Commodus.\(^{172}\)

Another lexicographer worth considering here is Moeris. His lexicon is likely from the 3\(^{rd}\) century CE, and it was clearly influenced by Phrynichus'.\(^{173}\) Moeris’ work is alphabetical and offers synonyms for obscure words. Like Phrynichus, he quotes abundantly from Attic authors -- Plato, Aristophanes, Thucydides, Xenophon, Demosthenes, Antiphon, Hypereides, and Isaeus --, though he pointedly avoids the tragedians. He also holds to the morphological and phonological tendencies of the Attic dialect (\textit{glotta} versus \textit{glossa}; and \textit{neos} versus \textit{naos}, for example). Yet unlike Phrynichus, Moeris is less critical of non-Attic variants: he simply puts the old word first and then lists recent alternatives. He compares Greek speakers (Hellenes) to Attic speakers (\textit{Attikoi}) without explicitly attacking the former, though of course, his preferred choice is clear from the textual ordering.

One last work to take into account is Pollux’s ten book \textit{Onomasticon}. Pollux was a student of Hadrian of Tyre, and his work, unlike those of the previously mentioned lexicographers, was a thematic list, complete with synonyms and brief explanations. Like Phrynichus, he was influenced by Plato, Xenophon, and Hesychius, but his lexicon does not quote these authors word-for-word. His authority, then, is established less through the excerpting of classical authors, and more through the study of specialized lexica. So while there was a range of lexicographical forms associated with the Second Sophistic, all were interested in a filtering of acceptable language. And all aimed to leave an impression on their audiences of a well-researched text.

\(^{172}\) Photius, \textit{Bibl.Cod.} 158.

\(^{173}\) Swain (1996), 51.
Rufus’ Interest in Dialectical Purity

As mentioned, one quality that links both lexicographers and iatrosophists is a concern for dialectical purity and an awareness of sub-standard terms. This interest is certainly prominent in Rufus’ texts, as the Athenian name for a particular body part tends to have more credibility for him. In *Onom.* 33, for instance, Rufus explains that the Athenians call nasal secretions *muxes,* and they call the state of having these secretions a “cold.”

(33) Ἀθηναῖοι δὲ καὶ μύξας ὄνομάζουσιν. Ἰπποκράτις δὲ τὸ διὰ αὐτῶν φλεγματώδες περίσσωμα ἰόν μύξαν καλεῖ· Ἀθηναῖοι δὲ τὸ περίσσωμα τούτο κόρυζαν καλοῦσιν

[33] The Athenians call the phlegmatic secretions of the nose *muxes,* while Hippocrates calls them *muxa.* The Athenians refer to the condition of having nasal secretions as a “cold.”

And since Attic Greek is the preferred standard, Rufus often refers in disparaging ways to doctors and other intellectuals who are not Greek. For him, it is patently not Greek to use the term “*male*” for the armpit:

(75) Μασχάλη δὲ ἕστι τὸ ὑπὸ τῶν ὀμῶν κοῖλον, εἰς ἣν τὰ πολλὰ ὀλισθαίνει ὁ ὀμός. Μάλην δὲ οὐχ ἐλληνικὸν ὄνομάζειν·

[75] The *maschala* (armpit) is the hollow under the shoulder, where the shoulder most often slips. It is not Greek to use the word “*male*” for “armpit.”

And in describing the sutures of the brain, Rufus mentions certain Egyptian doctors who spoke Greek badly:

Ὄνόματα δὲ αὐτῶν παλαιὰ ὄψιν ἦστιν, ἀλλὰ νῦν ἐτέθη ὑπὸ τῶν Αἰγυπτίων ἰατρῶν φαύλως ἐλληνιζόντων.
To be sure, however, there are times when Rufus points of dialectical differences without adjudicating between them. When discussing the elbow, for example, Rufus notes that the standard term in “olekranon,” but the Dorian who live in Sicily call it the “kubiton” (Onom.79). In this instance, Rufus does not say that the Dorian were wrong, just that their chosen term is different. To an extent, then, Rufus seems to care about cultural purity. But he is also trying to be comprehensive in listing the range of available anatomical terminology. However, like other lexicographers, Rufus is at great pains to show his learning; he is well-read and quotes from an extensive range of authors – both technical and more literary. He is eager to show his mastery of the Hippocratic material, and Homer is his most cited non-medical source.

Yet in many ways, Rufus is more of a doctor than a lexicographer. His treatises are not organized by word, but by body part. That is to say, rather than presenting a word and then giving its meaning, Rufus points to a part and then offers a range of possible names. His aim is not to explain obsolete or confusing words but to enable his audience to learn medical science. Nomenclature for him is a tool for scientific discourse, not an end in itself.

**Iatroosophistry: Performative Aspects of Medicine**

If he is not solely a lexicographer, another possible label for Rufus could be that of a “iatrosophist.” As Bowersock explains, \(^{174}\) Dio Chrysostom describes three types of

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\(^{174}\) Bowersock (2010), 83.
performers and speakers in his First *Tarsian Oration*: (1) those who praise the city, (2) those who describe the gods and cosmos, and (3) medical lecturers who point out bones, joints, and organs. Polish excavators even found auditoria where such lectures took place; they even had depressions in the floor where bodily fluids could drain. In any event, this third category is distinct from true doctors who heal and prescribe medication. Yet some doctors clearly had a foot in both worlds. Galen, most notably, held well-attended lectures in Rome, though he himself disliked the term “sophist” and contrasted *iatroi* with *logiatroi*.177

Von Staden notes that as part of the Second Sophistic, declamations were made before large crowds. These involved rhetorical re-enactments in public arenas, a certain amount of improvisation, and an obvious preoccupation with language. Galen’s works *De Arte* and *De Flatibus* were clearly epideictic.178 This point is underscored by the contrasting use of the words “*demosiai*” (publicly) and “*idiai*” (privately).179 Galen performed dissections on mice, birds, pigs, goats, oxen, horses, monkeys, and elephants before his audience,180 popularizing the practice of public medical demonstrations in Rome.

Galen promoted this practice, as he thought Empiricists and Methodists undervalued anatomy. The Empiricists had epistemological objections: dissections investigate hidden causes, not experience. According to Celsus, Empiricists think that dissection does not show the normal conditions of the body and that the very act of

175 Majcherek (2003), 25.
176 Galen. *In Hipp.prognost.comm.* (Kühn) 118b, p.258.
177 Galen. *In Hipp.de nat.hom.librum.comm* (Kühn) 15, p.159. Compare Aelius Aristides who mentions a doctor named Satyrus who was also a sophist: Arist.*Or.*49 Keil (*Hier.Log.*3.8).
178 See Bowersock, *Greek Sophists*, 59-75.
dissection damages them. It is better to take advantage of living examinations. However, Galen calls this “adventitious anatomy” (*epeisaktos anatomia*) in *MM.X.100*. The Methodists, on the other hand, use reason and attempt to teach the “method” of medicine in a six month period (*MM.X.781, 927*). Yet Galen claims they attempt “belief without demonstration” (*MM.X.76*).

Establishing one’s authority is central to the practice of sophistic medicine; it guarantees a physician’s credentials and encourages trust between him and his patients. One means to this end is to co-opt the rhetoric of another trusted author. As an illuminating example, Aude Doody has written on the pseudonymous *Medicini Plinii*, a work of extracts composted in the 4th century and drawn mostly from Pliny the Elder’s *Historia Naturalia*.181 While the *Historia Naturalia* has medicine as its focus in Books 20-32, the *Medicini Plinii* belongs to the tradition of medical compendia and is more diffusely medical. But in any event, author claims the influence of Pliny in his title.

But one of the more obvious ways to establish authority in a text is through the liberal use of the first person. In our current practice of scientific and technical writing, the use of the first person pronoun is discouraged. We tend to hold to the post-Newtonian idea that science deals with objective truths and that the author of scientific treatises ought to slip from view. Yet prior to the influence of Newton’s *Principia*, we find that what is most predominant in scientific discourse is a “person-centered rhetoric.”182 More specifically, in ancient Greek science, we find a *first* person rhetoric. G.E.R. Lloyd thus speaks of the tendency towards “egotism” in Greek philosophical and technical writers.183 The first person was so common, in fact, that Von Staden has labeled several distinct

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181 Doody (2009), 96.
182 Machamer (1991), 143.
183 Lloyd (1987), 58. For the same point, see also Debru (1990), 79-89.
categories for its use: (1) Nomenclative ego (when an author is concerned with a term’s precision); (2) ego of dispositio (when an author provides cross references in his own text); (3) autopic ego (when an author deals with patients); (4) ego as a reader (when an author describes himself as a reader of other medical texts); and (5) ego of scientific independence (when an author adjudicates between his rivals).

Von Staden has applied these categories extensively to Celsus, noting that Celsus uses the first person singular 240 times, either by pronoun or verb. He is not aggressively polemical, though he does criticize both his predecessors and contemporaries. Celsus’ self-assertion does not manifest itself in his descriptions of physiology. And when describing parts of the body, Celsus often uses impersonal terms: videtur (it seems), oportet (one should), debet (one ought), and decent (it is fitting). However, Celsus is particularly concerned with “nomenclative precision;” it is something that he views as an authorial responsibility. So it is in the context of naming that Celsus inserts himself into his texts. We do not see impersonal constructions like vocatur (it is called). Nor do we find vague third person constructions like vocant (they call), or even vocamus (we call), but rather voco (I call). Celsus is reluctant to coin new words, preferring to make good choices from among the words that already exist. But he is fond of what Von Staden labels the “ego of dispositio.” Celsus demonstrates that he is aware of and in control of his own text, foreshadowing what he will say and reiterating what he has already said.

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184 Von Staden (1994), 103-17.
185 Ibid, 106.
186 Ibid, 106.
187 Ibid, 110.
In contrast to Celsus, Galen’s authorial voice is particularly egocentric. Nutton notes that Galen refers to himself, either with a first person pronoun or with a first person verb, 110 times in his *De Motibus*.\(^{188}\) By way of comparison, Rufus, in his *Quaestiones Medicae*, a work of similar length to the *De Motibus*, uses first person verbs twelve times and the first person pronoun twelve times as well. Of these pronouns, five instances are the less assertive “*dokei moi.*”\(^{189}\) Of course, not all Greek science is as insistent in its use of the first person singular. In Aristotle, for instance, the words “*ego,*” “*emos,*” and “*emaut-*” are rare. Aristotle does, however, use the first person plural as well as first person endings on verbs. And there are alternatives to the first person singular. One can use impersonal expressions like “it is clear” or “it appears.” One can also use the second person pronoun for the addressee to show a contrast with the “*ego*” of the author. Alternatively, one can use the first person plural and have in mind a range of potential references. The writer could be using the authorial “*we*” for himself alone. For instance in Pliny’s *Historia Naturalia* 37.177, we find: *De opsiano lapide diximus priore libro* (we have spoken about obsidian in an earlier book.) But in other instances, the author could also be referring to (1) himself and a dedicatee; (2) to himself and a reader qua reader; (3) to himself and a reader qua practitioner of a particular skill; (4) to himself and his community; (5) to himself and the people of today; or (6) to himself and all humanity.

Another tactic for authorial self-assertion is through the polemical approach to other doctors. Here an author contrasts the ineptitude of other doctors to one’s own expertise:

\(^{188}\) Nutton (2009), 58.
\(^{189}\) Ibid, 59.
Multi medici se [medicos] adversum hoc malum non inveniunt. Ego certe raro quemquam huic pesti ereptum qui se illis credisset.

Many doctors do not find themselves confronted by this illness. I certainly know someone who dies suddenly because of this rare affliction who had entrusted himself to them. (*Medicina Plinii* I.26.5)

Once again, Galen is the most outstanding example of this approach. Many of Galen’s cases were agonistic in nature, involving rivals, witnesses, and the language of athletic competition. Certainly, both rhetoric and athletics were masculine activities, and Plutarch describes rhetoric as a sort of exercise, *gymnasion*. But in addition to athletics, Galen also uses the language of political disagreements; the competition between doctors is a form of *stasis*. The competitor is sometimes another physician, sometimes an anonymous group, and sometimes a younger, less experienced version of oneself. Nonetheless, what is most striking about Galen’s depiction of his rivals is that it is so openly hostile; Galen’s portrayal of his own authorial voice is one based on contrast.

But Susan Mattern poses the important question: If medical display is figured as a competition, how does one win? The answer seems to be that one can (a) cure a patient; (b) identify a problem, particularly on an animal being vivisected, or (c) predict the course of a disease. The concomitant question is: What is one competing for? And the answer for this, in part, is gaining some power over the patient. But more than that, it is gaining the approval of spectators. Words of wonder, “*thaumazein,*” for instance, abound in Galen’s corpus and indicate an attainment of this goal. The witnesses identify the victor and audibly offer their support. By contrast, an author can also adopt the rhetoric of another doctor or other intellectual whom he trusts, and this can be seen as an indication that he is at the same level.

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190 Plutarch, *Moralia* 130A-B.
191 Mattern (2008), 76.
Rufus’ Use of Personal Pronouns

So how do Rufus’ anatomical texts compare to those of Celsus and Galen? The first person pronoun finds expression seven times in Rufus’ texts. Six of these are in the form “it seems to me” (dokei emoi). The stronger nominative form only appears once, in Onom. 134:

(134.) Οὗτοι δὲ καὶ τῶν ἄλλων ὀστῶν μόρια ὀνομάζουσιν ἀνώνυμα τοῖς πάλαι, ἃ ἐγὼ οὐ παραλείψω διὰ τὴν εἰς τὰ νόν τῶν ἰατρῶν δῆλωσιν

[134] These doctors named parts of the cranial bones, which were once nameless. I will not pass over these names because they reveal the current conventions of doctors.

Here, not only is Rufus giving the proper term, but he is also suggesting that there is some value in keeping current with medical trends.

The dative forms seem to fall into two categories: Rufus’ dealing with his audience (i.e. “It seems to me that this is how the lesson should proceed”), and Rufus’ interpretation of other doctors’ work (i.e. “It seems to me that this is how X understood Y”). In the first category, we have Onom. 7 and 8:

(7-8) Ἐμοὶ μὲν οὐ δοκεῖ ἐκεῖνο ἁμείνον· οὐκ εὑμαθὲς δὲ καὶ ρᾳστὸν οὔτω καὶ μανθάνειν αὐτόν, καὶ έτερον διδάσκειν. Καὶ τοῦτό μοι δοκεῖ οὔτως.

[7-8] This does not seem better to me. It will not enable you to learn it yourself or to teach it to others. At least, that is how it seems to me.

And in the second category, we have Onom. 88, 155, 206, and 229.

(88.) Δοκεῖ δὲ μοι Ἡποκράτης πᾶν τὸ πλατὺ τῆς χειρός θέναρ ὀνομάζειν

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192 Onom. 7; 8; 88; 134; 155; 206; 229.
It seems to me that Hippocrates calls the thenar the entire spread of the hand.

It seems to me that Hippocrates calls “tooth” the first vertebra of the neck.

But it seems to me that Dionysius was using the word to describe something similar to a vein -- not a vein itself -- but perhaps some vessel newly filled with blood.

The fetus is wrapped in membranes. One of these is thin and soft; Empedocles calls it the amniotic fluid. It seems to me that it is from this name that Eileithuia has the surname “Amnias,” not from the name of a port in Crete.

Nowhere does Rufus use the “dokei emoi” form to adjudicate between rival interpretations or to offer his own view.

Verbs of Naming in Rufus

In his anatomical works, Rufus uses three different verbs of naming: καλῶ, ὀνόμαζω, and λέγω, καλῶ being almost twice as common as the others combined. The first person, both in the singular and plural, is rare in Rufus. He uses the verb λέγω once in Anat. 67 and καλοῦμεν once in Onom. 11:
(67) Ἀδένες εἰσὶ συστροφαὶ ποσῶς πιμελώδεις, καὶ σαρκώδεις ἓδιος κατακεχωρισμέναι εἰς τοὺς κοίλους τόπους, μασχάλας λέγω καὶ βουβάνας, ἐτὶ δὲ καὶ μεσεντέριον

[67] I call “glands” the somewhat fatty and fleshy compounds, located primarily in hollow areas like the armpits, groin, and mesentery.

(11) θώρακα γὰρ οὐ μόνον τὰ ἀπὸ τῶν κλειδῶν μέχρι τῶν ύποχονδρίων καλοῦμεν, ἀλλὰ καὶ τὸ σύμπαν ἀπὸ κλειδῶν μέχρι τῶν αἰδοίων.

[11] We call the “thorax” not only the part which extends from the collarbones to the navel, but that which extends from the collarbones to the genitalia.

Rufus’ most frequently used verb form in the *Onom.* is the third person plural in the active voice (“they call”). More than one third of his instances of naming follow this formula, yet Rufus almost never gives specific subjects. “Athenians” are the subjects in 32, 33, and 107, and “doctors” are the subjects in 133 and 135. But all other instances involve an anonymous “they.” The second most frequent verb form in the *Onom.* is the infinitive, always in δεῖ or χρὴ constructions (“it is necessary to call”). These instances comprise almost one quarter of the verbs of naming. Next come the passive verbs (“something is called”); these represent one fifth of the verbs. Another fifth are third person, singular active forms (“X calls something Y”). For these, Rufus does supply specific subjects: Hippocrates, Homer, Euryphron, Herophilus, Praxagoras, and Empedocles. Lastly, there are occasions when the names themselves (ὄνοματα) are the subjects (*Onom.* 133, 198). In the *Anat.*, passive constructions predominate. Three quarters of the verbs of calling take this form. Next are the third person plurals, which comprise less than one fifth of the verbs of calling. Again, these verbs have no specific subjects. And last are the infinitive and first person singular, each of which appears once,
Numbers aside, what all this shows is that Rufus, qua active namer, tends to slip from view. Other people call certain parts X; parts are called X; it is necessary to call parts X; but almost never I call parts X. Rufus is certainly a dutiful compiler, but he is not aggressively self-assertive. One point to consider, however, is that Rufus silently inserts himself into the anonymous third person plural subjects. In the cases where Rufus does not object to a particular name, “they call” should be taken to mean “they and I call.”

Visual Display in Rufus’ Texts

One further way for a iatrosophist to assert himself is through his visual display. That Rufus has an audience is clear from the outset of the Onom. Throughout the preface, Rufus addresses someone in the second-person singular:

(1-6)Τί πρῶτον ἔμαθες ἐν κιθαριστική;…Τί δὲ πρῶτον ἔμαθες ἐν γραμματική; …Τί γὰρ πρῶτον ἔμαθες ἐν γεωμετρίᾳ; …Βούλει ὦν καὶ τὰ ἰατρικὰ ἀπὸ τῶν ὄνομάτων άρξάμενος μανθάνειν,

[1-6] First of all, what must you know to practice cithara playing? … And what must you know to practice grammar? … What do you learn first in geometry? … Do you also want to learn medical science, beginning first with nomenclature?

There are also several verbs of seeing as well as some deictic gestures. In Onom. 129, Rufus says that his companion sees the pericranium:

[129] Όρα δὴ τοῖνυν τὸν ὑπὸ τῷ δέρματι τοῦ κρανίου χιτώνα. οὗτος περικράνιος καλεῖται.

[129] Next you see the membrane under the skin of the head. This is called the pericranium.

And in 186, Rufus uses the verb form “eidomen” to describe vascular parastatai:

ἐν δὲ προβάτου ύστερα εἴδομεν ἐκ τῶν διδύμων περικράνια τὰ ἁγγεία κεκιρ-
σωμένα ἐκατέρωθεν·

But we see that on the uterus of ewes, vascular vessels emerge from either side of
the didumoi (testicles).

In terms of deictic elements, Rufus seems to be pointing to his models on display. In

Onom. 9, Rufus tells his audience to look at this slave:

(9.) οὗτος. Ἀκούων δὴ καὶ ἀποβλέπων εἰς τὸν παΐδα τούτον διαμνημονεύσεις τὰ
ἐπιφανῆ πρῶτον·

[9] If you listen and look at this slave, you will, first of all, commit to memory the
external, visible parts.

And he returns to this deictic mode when he points to the monkey:

(127.) Τὰ μὲν οὖν ἐπιφανῆ, ὦ παῖ, σὺν τοῖς ὑποκειμένοις ὡστοὶς οὗτο
χρὴ καλέσαι τὰ δὲ ἐνδον τουτοὶ τὸν πιθήκου ἀνατέμνοντες, ὀνομάζειν
πειρασόμεθα·

[127] These, then, o child, are the visible parts -- along with their underlying
bones -- that it is necessary for us to name. We attempt to name the internal parts
by dissecting the monkey.

Besides pointing out parts to his audience, Rufus also displays his showmanship in his
actual anatomizing of the monkey. As I shall discuss, Rufus’ description of the dissection
suggests that his overarching concern is for an efficient, head-to-toe display of the
animal’s organs. This requirement entails having multiple, pre-prepared specimens at his
disposal.

It should be noted that there are many ways to perform a dissection: complete
evisceration, dissection in blocks, and dissection in situ. Each has concomitant costs and
benefits which the anatomist needs to prioritize. In a complete evisceration, all organs
can be examined separately and thoroughly. But because attachments are severed, the
organs cannot be put back in place exactly, and demonstrations are not repeatable. With
dissection in blocks, the chest, abdomen, and pelvic organs are removed *en masse*, in
blocks. The mass can be difficult to handle and awkward, but this form of dissection has
the benefit of preserving attachments between organs. Dissection in situ is the least
invasive option. There is little chance of introducing injury during the process of cutting,
and because anatomy is preserved, demonstrations are repeatable. But of course, organs
left in the body are harder to see and can only be examined from a limited number of
angles.

So what form of dissection does Rufus use? Unlike Galen, Rufus never details his
process of anatomizing the monkey. But it seems that he is not dissecting in blocks, as he
discusses the organs separately. And the fact that he includes comments about the organs’
shapes suggests that he has removed them fully from the body. That being said, if Rufus
is fully eviscerating the monkey, which the narrative does suggest, the process could not
be happening in real time, unless Rufus has many monkeys on the go.

In cutting open the monkey, the easiest method would be for the animal to be
lying flat on its back. In this case, the organs would be encountered and removed chest-
to-back. Indeed, modern autopsies start by removing the rib cage, thereby revealing the
chest cavity. The abdominal and pelvic organs are examined after removing the intestines
and fat overlying them. The brain can be investigated either before or after the rest of the
body. But the point is that dorsally located internal organs cannot be immediately
accessed. Yet Rufus’ dissection is performed head-to-toe, in parallel to the scheme he
used in examining the external parts of the slave. But the only way a head-to-toe narrative
would work would be if Rufus had multiple cadavers pre-prepared, with various layers
removed. In this way, Rufus’ narrative suggests a rehearsed performance, one meant to
download material in an expedient way. It is also an indication that Rufus has his
audience’s needs in mind. No extra time is lost in the messiness of evisceration. Rufus
can run through his narrative of the organs in the order that he wishes.

The “capite ad calcem” arrangement is common in medical texts. Herophilus’
investigations were organized in this way, as were the surviving summaries from the
early Empire. Sometimes, the author would take a “double trip” from head to toe – once
on the outside of the body, and once on the inside. This technique is also apparent in
Scribonius Largus’ *Compounds*, a Latin pharmacological treatise from 44-48 CE. Even in
terms of pathology, in the Hippocratic *On Affections* and *Diseases II*, the author starts
with phrenitis, an affliction of the head, and ends with diarrhea. Total body afflictions,
like elephantiasis, were listed last.

But there are other options to this head-to-toe scheme. While Galen follows a
roughly top-down pattern in *On the Dissection of the Nerves* and *On the Dissection of the
Muscles*, he is not married to this organization. In *On the Therapeutic Method*, Galen
uses a typology based on divisions between homoeomerous parts -- that is to say, uniform
parts like blood and bone --, and anhomoemerous parts like hands and eyes. And in his
*On the Usefulness of the Parts*, Galen divides the parts of the body by their usefulness,
*chreia*, depending on what is useful for the soul. So a horse has strong hooves and a
free-flowing mane because its soul is proud. And a lion has pointed teeth because its soul
is savage. For humans, hands are especially important because they are involved in

\[194\] Cf the pseudo-Galenic *Introduction and Medical Definitions* 10-11 and 36-60: XIV 699-720. On
Herophilus’ use of this technique, see Von Staden (1989), 138-241.
\[195\] Galen, *UP* 1.2. Flemming (2007), 264 ties this sort of arrangement to Imperial discourse: Each body part
is distinct yet linked to other parts. And the brain is the “centralized government” of the body.
writing, building, and crafts, all uniquely human acts.\textsuperscript{196} So hands comprise the first book; then arms, which aid the hands; then legs, which are needed for bipedal motion; then the organs used for nutrition; then pneuma, eyes, the rest of the face; the spine; shoulders; reproductive organs; and lastly, parts common to the whole body, like blood vessels. Galen’s \textit{On Anatomical Procedures} follows a similar organization: hands, legs, and then muscles.\textsuperscript{197}

That Rufus has the liberty to perform a head-to-toe display suggest that he has a number of monkeys to hand. But since he does not discuss the availability of his animal specimens, it is useful to turn to Galen as comparanda. Galen’s opportunities to work with human cadavers would have been limited. In his \textit{De Compositione medicamentorum per genera} XII.604K, Galen says he performed dissections on the bodies of Germans in the Macromannic Wars. And in AA.II.385-6K, Galen says that one should take advantage of chance opportunities to study the exposed bodies of brigands and children. Indeed, in AA.II.386K, Galen says that it is through the dissection of exposed children that anatomists can claim shared features between man and apes: καὶ παιδία δὲ τῶν ἐκτιθεμένων νεκρᾶ πολλάκις πολλὰ ἀνατέμνοντες ἐπεισθησαν, ώστως ἔχειν κατασκευῆς ἄνθρωπον πιθήκο. But this example is in the third person plural, so Galen is, perhaps, distancing himself.

Despite limited access to humans, Galen made frequent use of animals in his experiments, though it is not always clear which species he was using in every case.

\textsuperscript{196} Ibid 1.4. \textsuperscript{197} Galen, AA.2.3.
His studies of the brain used mostly the ox, but he also turned to apes, sheep, pigs, and goats. Bovine brains had the advantage of being readily available at the market. But their large size also made demonstration easier. For Galen, there were six classes of animal “not far removed from the nature of man.” First there were the apes, a parody, μίμημα γέλοιον, of humans. Then follow bears; pigs; saw-toothed animals; horned and double-hoofed ruminants; and hornless, smooth-hoofed animals. This system gave Galen a fair amount of freedom in saying that his findings on one species could usefully be applied to humans. That being said, many of Galen’s demonstrations were performed on primates, specifically five types: (1) pithekos (the Barbary ape of North Africa); (2) lynx (an unknown tailed ape); (3) satyros (likely not a gibbon, but perhaps a Rhesus monkey); (4) kynokephalos (a dog-headed baboon); and (5) kebos (a north eastern African Rhesus monkey). The availability of certain animals would surely have factored into his choice. In AA.II.708K, Galen says that ox brains were readily available for sale in large cities. And Toynbee notes that goats were likewise inexpensive and easily obtained. Despite his preference for apes, Galen says that dissectors should be prepared to anatomize other animals in case apes could not be obtained.

But there is also some worry about the longevity of the prepared specimens. If they were to be examined over several days, varying rates of decomposition would set in, depending on the season and type of tissue. For this reason, once the animal is selected, the dissector should try to reveal the part as quickly as possible and to show it is many

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198 AA.II.708K. See also Woollam (1958), 14 and Savage-Smith (1971), 78.
199 ως ου πορρω τανθρωπου φυσεω δντα AA.II.423K.
200 UP.II.p.273. 9-10.
201 Singer (1956), 240, n.22 notes that although Galen preferred the Barbary ape because it was tail-less, he likely relied mostly on the more abundant Rhesus monkeys.
202 Toynpee (1973), 166.
203 AA.II.227K. Jennison (1937), 128 says that there is no evidence for the breeding of domesticated monkeys, yet the number of primate specimens in Galen’s experiments suggests a ready supply.
ways. In the absence of an ape, another animal will suffice, but it needs to be clear from the outset how this animal differs from an ape. All this goes to show that while primates were a limited resource, it is not impossible for Rufus to have had multiple cadavers.

Location of the Sophistic Movement

While Rufus shows glimmers of sophistic display, I have argued that his sophism is more modest than that of Galen. Here I shall examine whether Rufus’ location or dates might have played a role. The major centers of the Sophistic movement were Ephesus, Smyrna, Athens, and Rome. Rufus is typically tied to Ephesus, and at the time he was working, Ephesus was a major city of the Roman province of Asia. In the first century CE, it was comprised mostly of Greek inhabitants who were loyal to Rome. It had an ongoing building program, and residents honored the emperor and governors. Ephesus certainly would have provided Rufus well, and there is no evidence that he ever travelled to Rome.\footnote{We know that Soranus, Ephesus’ other prominent physician, did travel to Rome. But he reports being disappointed with the city, particularly its methods of child-rearing. \textit{Gyn.} II.94.}

Inscriptions from Ephesus show that it has a vibrant medical community as well.\footnote{Samama (2003), nos. 201-19.} Many of its doctors met within the Museum, where they held feasts and had an annual competition in pharmacology, surgery, and instruments.\footnote{Broughton (1938), 854-5 mentions a group of inscriptions which suggest that professors and lawyers shared the museum with the doctors.} The winners had their names engraved on the wall of the Museum. The doctors also looked after the tombs of deceased members. Many were members of the town council, and some even had connections to the emperor or his servants. M. Aurelius Septimius Marinus, for example, was a massage therapist for Marcus Aurelius and Lucius Verus in the 160s.\footnote{Wanel et al (1979), no. 629.} Rufus and
Soranus were certainly the most famous doctors to hail from Ephesus. But Caelius Aurelianus mentions a Magnus of Ephesus who wrote a work on rabies.\textsuperscript{208}

Alexandria was often left out of the sophistic movement, though in part, this was because it was a blind spot of Philostratus, who did not particularly care for Egypt. But Alexandria is relevant to a discussion of Rufus, as he likely did some of his early medical training there.\textsuperscript{209} In the early second century, Alexandria was the site of a renewed interest in working with anatomy and dissection. In many ways, this was a revival of the work of Herophilus and Eudemus in the second to third centuries BCE. Rufus, as an anatomist, was working in the early part of the revival, but as I suggested, he was not acting as a real iatrosophist would. While this could be linked to his association with the less sophistic Alexandria, it is worth considering as a comparandum the \textit{De Virtutibus Herbarum}, a text attributed to Thessalius.\textsuperscript{210} The work likely dates to the late first or early second century. In the preface, Thessalius discusses an individual from Asia Minor who received his training in Alexandria and went to lectures of “dialectical physicians.” So there is some indication that rhetoric was part of Alexandrian medical education, even if it was less prominent there than in other locations. But Rufus’ (relative) sophistic reticence could also be explained by the fact that iatrosophistry was still in its nascent stages when Rufus was writing.

However, a counterpoint to Rufus is Statilius Crito, another Ephesian working at the same time as Rufus. According to the Suda, not only did Rufus live during the reign of Trajan, bit he was a contemporary of an individual named “Crito,” who was also a doctor:

\textsuperscript{208} Cael.Aurel.\textit{Acute Affections}, iii, 360.
\textsuperscript{210} Moyer (2011), 293 does not agree that Thessalius was the author.
Rufus, an Ephesian, a physician, along with Kriton, he lived under Trajan.  

But of Crito’s works, we have only extracts in Galen and a reference in Arabic.  

According to Galen, not only did Crito compile a work of pharmaceuticals, but he was also tied to the imperial house:

Kriton ..., who had served the imperial household as a physician.  

However, Galen does not specify which emperor is in question. Besides using the Suda, it is possible to date Crito from Martial. In his epigram 11.60.6, Martial mentions a Crito who can cure satyriasis. This epigram can be dated to 96 CE, which is two years before Trajan became emperor.  

John Lydus’ *Magistrates* suggests that a Crito went on the Dacian campaigns (101-106 CE) with Trajan and wrote of the Dacian Wars. However, it is not clear whether the physician and historian were, in fact, the same man. SEG IV.251 says his full name was Titus Statilius Kriton, and that he was a lead doctor (archiatros) to Trajan. As for his status as an Ephesian, there is some evidence that

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211 *Suda* P 241.  
212 The Arabic source says that Crito’s *Kosmetica* was translated by the 9th century. See Sezgin (1970), 60.  
214 Wellmann (1905), 581-3.  
Crito has at least semi-permanent residence in Ephesus. An Ephesian inscription dating to c.113 honored him.\textsuperscript{217}

As further evidence that Rufus’ date alone should not preclude Sophistic self-promotion, if we look at other physicians working before Rufus, we find stronger, more aggressive personalities. In the \textit{Fragments of the Methodist School}, fragments 156 and 265 underscore this point, as they describe doctors who pre-date Rufus but are concerned both with money and with impressing the emperor. In his \textit{On the Method of Therapy Lii}.p.78K, Galen quotes Thessalius, a doctor to Nero. In the fragment, Thessalius criticizes the Hippocrates for introducing harmful ideas. But more than that, his assertiveness manifests itself in his announcement that he is founding his own medical school, one based on saying that other doctors were wrong. Similarly, in Fragment 265 from Pliny’s \textit{Natural History}, we again see this same Thessalius. Again he is portrayed as having a keen interest in money. And his aggression is apparent in his self-label “\textit{iatronikes}” (conqueror of doctors). Yet another example is the epitaph for Tiberius Claudius Menecrates, a doctor who practiced before Rufus.\textsuperscript{218} Menecrates was ambitious, authoring 156 books and starting his own medical school. The epitaph shows that he had a triple-barreled Roman name, was a doctor of emperors, and was honored in imperial courts. It seems, then, that Rufus’ dates and (likely) place of study do not fully explain his reserved engagement with the Sophistic movement. Though it is a less satisfying answer, Rufus’ reticence seems to be tied more to personality; there are some authors who reveal frustratingly little about themselves, and Rufus falls into this category. He

\textsuperscript{217} Beneeim (1974), cols. 219.15-220.1.
\textsuperscript{218} Samama (2003), no.461.
performs before an audience (ὦ πᾶ, 127), and he cares about the niceties of language, but he does not promote himself in any sort of forceful way.
<table>
<thead>
<tr>
<th>Greek</th>
<th>English</th>
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<tbody>
<tr>
<td>αἷμα</td>
<td>blood</td>
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<td>ἄκανθα</td>
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<td>ἀκροπόσθιον</td>
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<td>ἀνθέλικα</td>
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<tr>
<td>ἀντικνήμιον</td>
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</tr>
<tr>
<td>ἀρτηρίαι</td>
<td>arteries</td>
</tr>
<tr>
<td>ἀσκομα</td>
<td>fully-developed breast</td>
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<tr>
<td>ἀστράγαλοι</td>
<td>balls of the ankle, vertebrae</td>
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<td>αὐχη</td>
<td>neck</td>
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<td>brainstem</td>
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<td>γαστροκνημία</td>
<td>gastrocnemius</td>
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γένειον  chin
γλούτοι  buttocks
γνάθοι  jaw
γραϋα  skin under the navel
γυναικεύος κόλπος  vagina
dάκτυλοι  fingers, toes
dειρή  throat
dέρμα  skin
dιάφραγμα  diaphragm
dίδυμοι  testicles
έκφυσις  whiskers
έλικα  periphery of the ears
ἐπιγάστριον  skin overtop the belly
ἐπιγλωσσίς  epiglottis
ἐπιγονατίς  patella
ἐπιγουνίδες  rectus femoris
ἐπίπλοον  omentum
ἐπίσειον  pubic region
ἐφήβαιον  pubis
ζυγώματα  acus zygomaticus
ἡβη  pubic bones
θώραξ  trunk
κεφαλή  head
<table>
<thead>
<tr>
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<th>English Term</th>
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<td>belly, ventricles of brain, ventricles of heart</td>
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<td>κοιλώμα τῆς ὑστέρας</td>
<td>Fallopian tubes</td>
</tr>
<tr>
<td>κόγχη</td>
<td>cavity in front of the anti-helix of the ear</td>
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<td>temples</td>
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<td>κτεῖς</td>
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κύαμος immature breast
κύβιτον elbow
κύλον upper eyelid
κυνόδοντα canine teeth
κύστις bladder
κυψελίς earwax
λακκόπεδον scrotum
λαπάραι iliac cavity
λιχανός pointer finger
λευκανία throat
μάλη armpit
μαστοί breasts
μασχάλη armpit
μεσεντέριον mesentery
μεσομήρια mid-thigh
μεσοπλεύρια intercostal space
μεσόφρυον space between the brows
μετάφρενος midriff
μέτωπον forehead
μῆλα cheeks, tonsils
μήνιγγες meninges
μήτρα uterus
μυελός spinal marrow
μύες muscles
μυκτήρες nostrils
μύλοι molars
μύρτον clitoris
μυρτόχειλα labia
μύστακες moustache
μύξα mucus
νήστις jejunum
νεύρα nerves
νεφροῖ kidneys
νύμφη clitoris
νότον back
ὀδόντες teeth, vertebrae
ὀμφαλός navel
ὀρόν perineum
ὀρχεῖς testicles
ούλα gums
ούρητικός ureter
ούρον urine
ὀψις eyeball
παραστάται varicose spermatic vessels
παρεγκεφαλίς cerebellum
παρειαί ridges of the cheeks
<table>
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<th>Greek Term</th>
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<td>πλευρα</td>
<td>membranes over lungs</td>
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<td>ῥιζωνύχια</td>
<td>nail-beds</td>
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<td>ῥινός διάφραγμα</td>
<td>partition of the nose</td>
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<td>chest, palm of hand</td>
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<tr>
<td>στήμα</td>
<td>penis</td>
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<tr>
<td>στιλοειδεῖς</td>
<td>styloid processes</td>
</tr>
<tr>
<td>στόμα</td>
<td>mouth, opening of uterus</td>
</tr>
<tr>
<td>σφαιρίον</td>
<td>tip of the nose</td>
</tr>
<tr>
<td>σφόνδυλοι</td>
<td>spine</td>
</tr>
<tr>
<td>σφυρα</td>
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<tr>
<td>σχίσμα</td>
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<tr>
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<td>wisdom teeth</td>
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<tr>
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<tr>
<td>τομεῖς</td>
<td>incisors</td>
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<tr>
<td>τόνοι</td>
<td>tendons</td>
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<tr>
<td>τράπεζαι</td>
<td>surface of the molars</td>
</tr>
<tr>
<td>τραχείας ἀρτηρίας</td>
<td>windpipe</td>
</tr>
<tr>
<td>τράχηλος</td>
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</tr>
<tr>
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<td>caecum</td>
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<tr>
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<tr>
<td>ύπήνη</td>
<td>goatee</td>
</tr>
<tr>
<td>ύπόθεναρ</td>
<td>area under the fingers, excluding the thumb</td>
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<tr>
<td>ύπογλουτίδες</td>
<td>juncture between buttocks and thighs</td>
</tr>
<tr>
<td>ύποχόνδρια</td>
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</tr>
<tr>
<td>Greek Term</td>
<td>English Translation</td>
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<td>---------------</td>
<td>-----------------------------------</td>
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<tr>
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<td>χιτών χοριοειδής</td>
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</tr>
<tr>
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<tr>
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</tr>
<tr>
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Bibliography


Greco-Roman Culture, London.


