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Generation of Animals

Aristotle

ΠΕΡΙ ΖΩΙΩΝ ΓΕΝΕΣΕΩΣ

Generation of Animals

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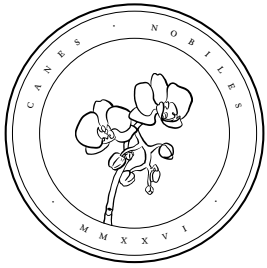
with a word-for-word interlinear English translation

preserving the original word order



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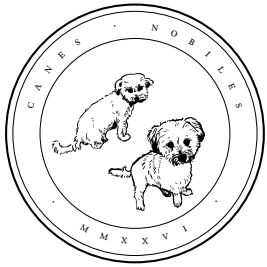

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ARISTOTLE

ΠΕΡΙ ΖΩΙΩΝ ΓΕΝΕΣΕΩΣ

Generation of Animals

BOOK I

I · THE PARTS FOR GENERATION

The other parts of animals have been explained by their final cause; the parts for generation remain, and the moving cause. Of the four causes, the end and the account are nearly one, and the matter of animals is their parts. The sexes are found in most blooded animals and some bloodless ones. Some animals come from a male and female coupling, others from rotting earth and residues, and these generate another kind, neither male nor female, since nature flees the infinite. The attached testaceans, like plants, have sexes only by likeness, as the fig and wild fig do. Plants come from seed or spontaneously, as mistletoe does.

Ἐπεὶ δὲ περὶ τῶν ἄλλων μορίων εἴρηται τῶν ἐν τοῖς
Since and about the other parts it-has-been-said the in the
ζῴοις καὶ κοινῇ καὶ καθ' ἕκαστον γένος περὶ τῶν ἰδίων
animals both in-common and by each kind about the peculiar
χωρίς, τίνα τρόπον διὰ τὴν τοιαύτην αἰτίαν ἐστὶν
separately in-what way because-of the such cause is
ἕκαστον, λέγω δὲ ταύτην τὴν ἕνεκά του· ὑπόκεινται
each I-mean and this the for-the-sake-of something are-laid-down
γὰρ αἰτίαι τέτταρες, τό τε οὗ ἕνεκα ὡς τέλος, καὶ
for causes four the both of-which for-the-sake as end and
ὁ λόγος τῆς οὐσίας. Ταῦτα μὲν οὖν ὡς ἕν τι σχεδὸν
the account of-the substance These indeed then as one something nearly
ὑπολαβεῖν δεῖ, τρίτον δὲ καὶ τέταρτον ἡ ὕλη καὶ
to-suppose one-must third and and fourth the matter and
ὅθεν ἡ ἀρχὴ τῆς κινήσεως. Περὶ μὲν οὖν τῶν ἄλλων
whence the principle of-the motion About indeed then the others
εἴρηται (ὅ τε γὰρ λόγος καὶ τὸ οὗ ἕνεκα ὡς
it-has-been-said the both for account and the of-which for-the-sake as
τέλος ταὐτόν, καὶ ὕλη τοῖς ζῴοις τὰ μέρη, παντὶ μὲν τῷ
end the-same and matter for-the animals the parts for-all indeed the

ὅλῳ τὰ ἀνομοιομερῆ, τοῖς δ' ἀνομοιομερέσι τὰ ὁμοιομερῆ,
whole the non-uniform for-the and non-uniform the uniform
τούτοις δὲ τὰ καλούμενα στοιχεῖα τῶν σωμάτων), λοιπὸν
for-these and the so-called elements of-the bodies remaining
δὲ τῶν μὲν μορίων τὰ πρὸς τὴν γένεσιν συντελοῦντα
and of-the indeed parts the toward the generation contributing
τοῖς ζῴοις, περὶ ὧν οὐθὲν διώρισται πρότερον, περὶ
for-the animals about which nothing has-been-determined before about
αἰτίας δὲ τῆς κινούσης, τίς αὕτη.
cause and the moving what this

Τὸ δὲ περὶ ταύτης σκοπεῖν καὶ τὸ περὶ τῆς γενέσεως τῆς
The and about this to-examine and the about the generation the
ἑκάστου τρόπον τινὰ ταὐτόν ἐστιν· διόπερ ὁ λόγος εἰς ἓν
of-each in-a-way some the-same is wherefore the discourse into one
συνήγαγε, τῶν μὲν περὶ τὰ μόρια τελευταῖα ταῦτα, τῶν
brought-together of-the indeed about the parts last these of-the
δὲ περὶ γενέσεως τὴν ἀρχὴν ἐχομένην τούτων τάξας.
and about generation the beginning next-to these having-arranged

Τῶν δὴ ζῴων τὰ μὲν ἐκ συνδυασμοῦ γίνεται θήλεος
Of-the indeed animals the-ones indeed from coupling come-to-be of-female
καὶ ἄρρενος, ἐν ὅσοις γένεσι τῶν ζῴων ἐστὶ τὸ θῆλυ καὶ
and of-male in as-many-as kinds of-the animals is the female and
τὸ ἄρρεν. Οὐ γὰρ ἐν πᾶσίν ἐστιν, ἀλλ' ἐν μὲν τοῖς ἐναίμοις
the male Not for in all it-is but in indeed the blooded
ἔξω ὀλίγων ἅπασι τὸ μὲν ἄρρεν τὸ δὲ θῆλυ τελειωθέν
except few in-all the-one indeed male the-other and female completed
ἐστι, τῶν δ' ἀναίμων τὰ μὲν ἔχει τὸ θῆλυ καὶ τὸ ἄρρεν,
is of-the and bloodless the-ones indeed have the female and the male
ὥστε τὰ ὁμογενῆ γεννᾶν, τὰ δὲ γεννᾷ μέν, οὐ μέντοι τά
so-that the same-kind to-generate the-others and generate indeed not however the
γε ὁμογενῆ· τοιαῦτα δ' ἐστὶν ὅσα γίνεται μὴ ἐκ ζῴων
at-least same-kind such and are as-many-as come-to-be not from animals

συνδυαζομένων, ἀλλ᾽ ἐκ γῆς σηπομένης καὶ περιττωμάτων.
coupling but from earth rotting and residues
Ὡς δὲ κατὰ παντὸς εἰπεῖν, ὅσα μὲν κατὰ τόπον
As and in-respect-of all to-say as-many-as indeed in-respect-of place
μεταβλητικὰ τῶν ζῴων ὄντα τὰ μὲν νευστικὰ τὰ
changing of-the animals being the-ones indeed swimming the-others
δὲ πτηνὰ τὰ δὲ πεζευτικὰ τοῖς σώμασιν, ἐν ἐνίοις
and winged the-others and walking in-the bodies in some
μὲν τούτων ἅπαν τὸ γένος ἔχει τὸ θῆλυ καὶ τὸ ἄρρεν, οὐ
indeed of-these all the kind has the female and the male not
μόνον ἐν τοῖς ἐναίμοις, ἀλλὰ καὶ τῶν ἀναίμων ἔν τισιν.
only in the blooded but also of-the bloodless in some
Καὶ τούτων τοῖς μὲν καθ᾽ ὅλον τὸ γένος, οἷον
And of-these in-some indeed in-respect-of whole the kind such-as
τοῖς μαλακίοις καὶ τοῖς μαλακοστράκοις· ἐν δὲ τῷ τῶν
in-the cephalopods and in-the crustaceans in and the of-the
ἐντόμων γένει τὰ πλεῖστα. Τούτων δ᾽ αὐτῶν ὅσα
insects kind the most Of-these and themselves as-many-as
μὲν ἐκ συνδυασμοῦ γίνεται τῶν συγγενῶν ζῴων, καὶ
indeed from coupling come-to-be of-the akin animals also
αὐτὰ γεννᾷ κατὰ τὴν συγγένειαν· ὅσα δὲ μὴ ἐκ
themselves generate according-to the kinship as-many-as and not from
ζῴων ἀλλ᾽ ἐκ σηπομένης τῆς ὕλης, ταῦτα δὲ γεννᾷ μὲν
animals but from rotting the matter these and generate indeed
ἕτερον δὲ γένος, καὶ τὸ γιγνόμενον οὔτε θῆλύ ἐστιν οὔτε
other but kind and the coming-to-be neither female is nor
ἄρρεν. Τοιαῦτα δ᾽ ἐστὶν ἔνια τῶν ἐντόμων. Καὶ τοῦτο
male Such and are some of-the insects And this
συμβέβηκεν εὐλόγως· εἰ γὰρ ὅσα μὴ γίγνεται ἐκ
has-happened reasonably if for as-many-as not come-to-be from
ζῴων, ἐκ τούτων ἐγίνετο ζῷα συνδυαζομένων, εἰ μὲν
animals from these came-to-be animals coupling if indeed

ὁμοιογενῆ, καὶ τὴν ἐξ ἀρχῆς τοιαύτην ἔδει τῶν
of-like-kind also the from beginning such would-have-had-to of-the
τεκνωσάντων εἶναι γένεσιν. Τοῦτο δ' εὐλόγως ἀξιοῦμεν·
begetters to-be generation This and reasonably we-claim
φαίνεται γὰρ συμβαῖνον οὕτως ἐπὶ τῶν ἄλλων ζῴων.
appears for happening so in-the-case-of the other animals
Εἰ δ' ἀνόμοια μὲν δυνάμενα δὲ συνδυάζεσθαι, πάλιν ἐκ
If but unlike indeed being-able but to-couple again from
τούτων ἑτέρα τις ἂν ἐγίνετο φύσις, καὶ πάλιν ἄλλη
these other some — would-come-to-be nature and again another
τις ἐκ τούτων, καὶ τοῦτ' ἐπορεύετ' ἂν εἰς ἄπειρον.
some from these and this would-proceed — to infinity
Ἡ δὲ φύσις φεύγει τὸ ἄπειρον· τὸ μὲν γὰρ ἄπειρον
The but nature flees the infinite the indeed for infinite
ἀτελές, ἡ δὲ φύσις ἀεὶ ζητεῖ τέλος. Ὅσα δὲ μὴ
incomplete the but nature always seeks an-end As-many-as but not
πορευτικά, καθάπερ τὰ ὀστρακόδερμα τῶν ζῴων καὶ τὰ
able-to-move-about just-as the testaceans of-the animals and the
ζῶντα τῷ προσπεφυκέναι, διὰ τὸ παραπλησίαν αὐτῶν
living by-the being-attached because-of the similar their
εἶναι τὴν οὐσίαν τοῖς φυτοῖς, ὥσπερ οὐδ' ἐν ἐκείνοις,
to-be the substance to-the plants just-as not-even in those
οὐδ' ἐν τούτοις ἐστι τὸ θῆλυ καὶ τὸ ἄρρεν, ἀλλ' ἤδη
not-even in these is the female and the male but already
καθ' ὁμοιότητα καὶ κατ' ἀναλογίαν λέγεται· μικρὰν γάρ
by likeness and by analogy it-is-said small for
τινα τοιαύτην ἔχει διαφοράν. Καὶ γὰρ ἐν τοῖς φυτοῖς
some such they-have difference And for in the plants
ὑπάρχει τὰ μὲν καρποφόρα δένδρα τοῦ αὐτοῦ γένους,
there-are the-ones indeed fruit-bearing trees of-the same kind
τὰ δ' αὐτὰ μὲν οὐ φέρει καρπόν, συμβάλλεται δὲ
the-others and themselves indeed not bear fruit contribute but

τοῖς φέρουσι πρὸς τὸ πέττειν, οἷον συμβαίνει περὶ τὴν
to-the bearing toward the concocting as happens about the
συκῆν καὶ τὸν ἐρινεόν. Ἔστι δὲ καὶ ἐπὶ τῶν φυτῶν
fig and the wild-fig There-is and also in-the-case-of the plants
τὸν αὐτὸν τρόπον· τὰ μὲν γὰρ ἐκ σπέρματος γίνεται,
the same way the indeed for from seed come-to-be
τὰ δ' ὥσπερ αὐτοματιζούσης τῆς φύσεως. Γίνεται
the-others but as-if spontaneously-acting the nature They-come-to-be
γὰρ ἢ τῆς γῆς σηπομένης ἢ μορίων τινῶν ἐν τοῖς
for either the earth rotting or of-parts some in the
φυτοῖς. Ἔνια γὰρ αὐτὰ μὲν οὐ συνίσταται καθ' αὑτὰ
plants Some for themselves indeed not are-constituted by themselves
χωρίς, ἐν ἑτέροις δ' ἐγγίνεται δένδρεσιν, οἷον ὁ ἰξός.
separately in others but come-to-be-in trees such-as the mistletoe

II · MALE AND FEMALE

Plants aside, the generation of each animal is to be traced in order. Male and female are its principles, the male of motion, the female of matter, as the seed shows: the male generates in another, the female in itself, so the earth is called mother and heaven and sun fathers. They differ in account by power and to perception by parts, the uterus and the testicles or ducts; and since a small principle changed changes much, the castrated turn nearly female.

Περὶ μὲν οὖν φυτῶν, αὐτὰ καθ' αὑτὰ χωρὶς ἐπισκεπτέον·
About indeed then plants themselves by themselves separately it-must-be-examined
περὶ δὲ τῶν ἄλλων ζῴων τῆς γενέσεως λεκτέον κατὰ
about and the other animals the generation must-be-said according-to
τὸν ἐπιβάλλοντα λόγον καθ' ἕκαστον αὐτῶν, ἀπὸ τῶν
the fitting account by each of-them from the
εἰρημένων συνείροντας. Καθάπερ γὰρ εἴπομεν, τῆς γενέσεως
said connecting Just-as for we-said of-the generation

ἀρχὰς ἄν τις οὐχ ἥκιστα θείη τὸ θῆλυ καὶ τὸ ἄρρεν,
as-principles — anyone not least would-posit the female and the male
τὸ μὲν ἄρρεν ὡς τῆς κινήσεως καὶ τῆς γενέσεως ἔχον τὴν
the indeed male as of-the motion and of-the generation having the
ἀρχήν, τὸ δὲ θῆλυ ὡς ὕλης. Τοῦτο δὲ μάλιστ' ἄν τις
principle the but female as of-matter This and most — anyone
πιστεύσειε θεωρῶν πῶς γίνεται τὸ σπέρμα καὶ πόθεν· ἐκ
would-believe observing how comes-to-be the seed and whence from
τούτου μὲν γὰρ τὰ φύσει γινόμενα συνίσταται, τοῦτο δὲ
this indeed for the by-nature coming-to-be are-constituted this and
πῶς ἀπὸ τοῦ θήλεος καὶ τοῦ ἄρρενος συμβαίνει γίγνεσθαι,
how from the female and the male happens to-come-to-be
δεῖ μὴ λανθάνειν. Τῷ γὰρ ἀποκρίνεσθαι τὸ τοιοῦτον
it-must not to-escape-notice By-the for being-secreted the such
μόριον ἀπὸ τοῦ θήλεος καὶ τοῦ ἄρρενος, καὶ ἐν τούτοις τὴν
part from the female and the male and in these the
ἀπόκρισιν εἶναι καὶ ἐκ τούτων, διὰ τοῦτο τὸ θῆλυ καὶ
secretion to-be and from these because-of this the female and
τὸ ἄρρεν ἀρχαὶ τῆς γενέσεώς εἰσιν. Ἄρρεν μὲν γὰρ λέγομεν
the male principles of-the generation are Male indeed for we-call
ζῷον τὸ εἰς ἄλλο γεννῶν, θῆλυ δὲ τὸ εἰς αὐτό· διὸ
animal the-one into other generating female and the-one into itself wherefore
καὶ ἐν τῷ ὅλῳ τὴν τῆς γῆς φύσιν ὡς θῆλυ καὶ μητέρα
also in the whole the of-the earth nature as female and mother
νομίζουσιν, οὐρανὸν δὲ καὶ ἥλιον ἤ τι τῶν ἄλλων τῶν
they-consider heaven and and sun or something of-the others of-the
τοιούτων ὡς γεννῶντας καὶ πατέρας προσαγορεύουσιν.
such as generating and fathers they-address
Τὸ δ' ἄρρεν καὶ τὸ θῆλυ διαφέρει κατὰ μὲν τὸν λόγον
The and male and the female differ according-to indeed the account
τῷ δύνασθαι ἕτερον ἑκάτερον, κατὰ δὲ τὴν αἴσθησιν
by-the being-able other each according-to and the perception

μορίοις τισίν, κατὰ μὲν τὸν λόγον τῷ ἄρρεν μὲν
by-parts some according-to indeed the account by-the male indeed
εἶναι τὸ δυνάμενον γεννᾶν εἰς ἕτερον, καθάπερ ἐλέχθη
to-be the being-able to-generate into another just-as was-said
πρότερον, τὸ δὲ θῆλυ τὸ εἰς αὐτό, καὶ ἐξ οὗ γίνεται
before the but female the-one into itself and out-of which comes-to-be
ἐνυπάρχον ἐν τῷ γεννῶντι τὸ γεννώμενον. Ἐπεὶ δὲ δυνάμει
being-present-in in the generator the generated Since and by-power
διώρισται καὶ ἔργῳ τινί, δεῖται δὲ πρὸς πᾶσαν
it-has-been-distinguished and by-function some needs and for every
ἐργασίαν ὀργάνων, ὄργανα δὲ ταῖς δυνάμεσι τὰ μέρη τοῦ
work instruments instruments and for-the powers the parts of-the
σώματος, ἀναγκαῖον εἶναι καὶ πρὸς τὴν τέκνωσιν καὶ τὸν
body necessary to-be also for the begetting and the
συνδυασμὸν μόρια, καὶ ταῦτα διαφέροντ' ἀλλήλων, καθὸ
coupling parts and these differing from-one-another insofar-as
τὸ ἄρρεν διοίσει τοῦ θήλεος. Εἰ γὰρ καὶ καθ' ὅλου
the male will-differ from-the female If for even in-respect-of whole
λέγεται τοῦ ζῴου τοῦ μὲν τὸ θῆλυ τοῦ δὲ τὸ ἄρρεν, ἀλλ'
is-said of-the animal of-the indeed the female of-the and the male but
οὐ κατὰ πᾶν γε τὸ αὐτὸ θῆλυ καὶ ἄρρεν ἐστίν, ἀλλὰ
not in-respect-of all at-least the same female and male is but
κατά τινα δύναμιν καὶ κατά τι μόριον, ὥσπερ καὶ
in-respect-of some power and in-respect-of some part just-as also
τὸ ὁρατικὸν καὶ πορευτικόν, ὅπερ καὶ φαίνεται κατὰ τὴν
the seeing and walking which-very also appears to the
αἴσθησιν. Τοιαῦτα δὲ τυγχάνει μόρια ὄντα τοῦ μὲν θήλεος
perception Such and happen parts being of-the indeed female
αἱ καλούμεναι ὑστέραι, τοῦ δ' ἄρρενος τὰ περὶ τοὺς
the so-called uteri of-the and male the about the

ὄρχεις καὶ τοὺς περινέους ἐν πᾶσι τοῖς ἐναίμοις· τὰ μὲν
testes and the perinea in all the blooded the-ones indeed
γὰρ ὄρχεις ἔχει αὐτῶν, τὰ δὲ τοὺς τοιούτους πόρους.
for testes have of-them the-others and the such ducts
Εἰσὶ δὲ διαφοραὶ τοῦ θήλεος καὶ ἄρρενος καὶ ἐν τοῖς
There-are and differences of-the female and male also in the
ἀναίμοις, ὅσα αὐτῶν ἔχει ταύτην τὴν ἐναντίωσιν.
bloodless as-many-as of-them have this the opposition
Διαφέρει δ' ἐν τοῖς ἐναίμοις τὰ μέρη τὰ πρὸς τὴν μίξιν
Differ and in the blooded the parts the for the mixing
τοῖς σχήμασιν. Δεῖ δὲ νοεῖν ὅτι μικρᾶς ἀρχῆς
in-the shapes One-must and to-understand that small principle
μετακινουμένης πολλὰ συμμεταβάλλειν εἴωθε τῶν μετὰ τὴν
being-moved many to-change-together is-wont of-the after the
ἀρχήν. Δῆλον δὲ τοῦτο ἐπὶ τῶν ἐκτεμνομένων· τοῦ
principle Clear and this in-the-case-of the castrated of-the
γεννητικοῦ γὰρ μορίου διαφθειρομένου μόνον ὅλη σχεδὸν ἡ
generative for part being-destroyed only whole nearly the
μορφὴ συμμεταβάλλει τοσοῦτον ὥστε ἢ θῆλυ δοκεῖν εἶναι
shape changes-together so-much so-that either female to-seem to-be
ἢ μικρὸν ἀπολείπειν, ὡς οὐ κατὰ τὸ τυχὸν μόριον οὐδὲ
or little to-fall-short as not by the chance part nor
κατὰ τὴν τυχοῦσαν δύναμιν θῆλυ ὂν καὶ ἄρρεν τὸ ζῷον.
by the chance power female being and male the animal
Φανερὸν οὖν ὅτι ἀρχή τις οὖσα φαίνεται τὸ θῆλυ καὶ
Evident then that principle some being appears the female and
τὸ ἄρρεν· πολλὰ γοῦν συμμεταβάλλει μεταβαλλόντων
the male many at-any-rate change-together changing
ᾗ θῆλυ καὶ ἄρρεν, ὡς ἀρχῆς μεταπιπτούσης.
insofar-as female and male as of-principle shifting

III · THE TESTICLES

The parts for generation differ among the blooded animals. Fish and snakes have no testicles but two seminal ducts; birds and the egg-laying quadrupeds that breathe have them inside by the loin near the kidneys; the live-bearers have them in front, inside at the belly's end in the dolphin, outside hanging free in man or by the rump in swine. The uterus is always double, low by the joints or up by the diaphragm; the crustaceans, cephalopods, and larger insects have a forked one too, though the octopus's seems single.

Ἔχει δὲ τὰ περὶ τοὺς ὄρχεις καὶ τὰς ὑστέρας οὐχ ὁμοίως
Have and the about the testes and the uteri not likewise
πᾶσι τοῖς ἐναίμοις ζῴοις, καὶ πρῶτον τὰ περὶ τοὺς ὄρχεις
all the blooded animals and first the about the testes
τοῖς ἄρρεσιν. Τὰ μὲν γὰρ ὅλως ὄρχεις οὐκ ἔχει τῶν
in-the males The indeed for at-all testes not have of-the
τοιούτων ζῴων, οἷον τό τε τῶν ἰχθύων γένος καὶ τὸ
such animals such-as the both of-the fish kind and the
τῶν ὄφεων, ἀλλὰ πόρους μόνον δύο σπερματικούς· τὰ
of-the snakes but ducts only two seminal the-others
δ' ἔχει μὲν ὄρχεις, ἐντὸς δ' ἔχει τούτους πρὸς τῇ ὀσφύϊ
and have indeed testes inside but have these at the loin
κατὰ τὴν τῶν νεφρῶν χώραν, ἀπὸ δὲ τούτων ἑκατέρου
at the of-the kidneys place from and these each
πόρον, ὥσπερ ἐν τοῖς μὴ ἔχουσιν ὄρχεις, συνάπτοντας
a-duct just-as in the not having testes joining
εἰς ἕν, καθάπερ καὶ ἐπ' ἐκείνων, οἷον οἵ τε ὄρνιθες
into one just-as also in-the-case-of those such-as the both birds
πάντες καὶ τὰ ᾠοτοκοῦντα τετράποδα τῶν δεχομένων τὸν
all and the egg-laying quadrupeds of-the receiving the
ἀέρα καὶ πλεύμονα ἐχόντων. Καὶ γὰρ ταῦτα πάντα ἐντὸς
air and lung having And for these all inside

ἔχει πρὸς τῇ ὀσφύϊ τοὺς ὄρχεις, καὶ δύο πόρους ἀπὸ
have at the loin the testes and two ducts from
τούτων ὁμοίως τοῖς ὄφεσιν, οἷον σαῦροι καὶ χελῶναι καὶ
these likewise to-the snakes such-as lizards and tortoises and
τὰ φολιδωτὰ πάντα. Τὰ δὲ ζῳοτόκα πάντα μὲν ἐν τῷ
the scaly all The but live-bearing all indeed in the
ἔμπροσθεν ἔχει τοὺς ὄρχεις, ἀλλ᾽ ἔνια αὐτῶν ἔσω πρὸς
front have the testes but some of-them inside at
τῷ τέλει τῆς γαστρός, οἷον ὁ δελφίς, καὶ οὐ πόρους
the end of-the belly such-as the dolphin and not ducts
ἀλλ᾽ αἰδοῖον ἀπὸ τούτων περαῖνον εἰς τὸ ἔξω, καθάπερ οἱ
but a-genital from these reaching to the outside just-as the
βόες, τὰ δ᾽ ἔξω καὶ τούτων τὰ μὲν ἀπηρτημένους,
oxen the-others and outside and of-these the-ones indeed hanging-free
ὥσπερ ἄνθρωπος, τὰ δὲ πρὸς τῇ ἕδρᾳ, καθάπερ οἱ ὗες.
just-as man the-others and at the rump just-as the swine
Διώρισται δὲ περὶ αὐτῶν ἀκριβέστερον ἐν ταῖς ἱστορίαις
Has-been-determined and about them more-exactly in the inquiries
ταῖς περὶ τῶν ζῴων. Αἱ δ᾽ ὑστέραι πᾶσαι μέν εἰσι
the about the animals The and uteri all indeed are
διμερεῖς, καθάπερ καὶ οἱ ὄρχεις τοῖς ἄρρεσι δύο πᾶσιν·
two-parted just-as also the testes in-the males two in-all
ταύτας δ᾽ ἔχουσι τὰ μὲν πρὸς τοῖς ἄρθροις, καθάπερ αἵ
these and have the-ones indeed at the joints just-as the
τε γυναῖκες καὶ πάντα τὰ ζῳοτοκοῦντα μὴ μόνον θύραζε
both women and all the live-bearing not only outside
ἀλλὰ καὶ ἐν αὑτοῖς, καὶ οἱ ἰχθύες ὅσοι ᾠοτοκοῦσιν εἰς
but also in themselves and the fish as-many-as lay-eggs into
τοὐμφανές, τὰ δὲ πρὸς τῷ ὑποζώματι, καθάπερ οἵ τ᾽
the-open the-others and at the diaphragm just-as the both
ὄρνιθες πάντες καὶ τῶν ἰχθύων οἱ ζῳοτοκοῦντες. Ἔχουσι
birds all and of-the fish the live-bearing Have

δὲ δικρόας καὶ τὰ μαλακόστρακα τὰς ὑστέρας καὶ τὰ
and two-forked also the crustaceans the uteri and the
μαλάκια· τὰ γὰρ καλούμενα τούτων ᾠὰ τοὺς περιέχοντας
cephalopods the for so-called of-these eggs the surrounding
ὑμένας ὑστερικοὺς ἔχει. Μάλιστα δὲ ἀδιόριστον ἐπὶ
membranes uterine have Most and indistinct in-the-case-of
τῶν πολυπόδων ἐστίν, ὥστε δοκεῖν μίαν εἶναι· τούτου δ'
the octopuses it-is so-that to-seem one to-be of-this and
αἴτιον ὁ τοῦ σώματος ὄγκος πάντῃ ὅμοιος ὤν. Δίκροαι
cause the of-the body bulk everywhere alike being Two-forked
δὲ καὶ αἱ τῶν ἐντόμων εἰσὶν ἐν τοῖς μέγεθος ἔχουσιν· ἐν δὲ
and also the of-the insects are in the size having in and
τοῖς ἐλάττοσιν ἄδηλοι διὰ τὴν μικρότητα τοῦ σώματος.
the smaller invisible because-of the smallness of-the body

IV · WHY TESTICLES EXIST

Nature does everything from necessity or for the better. The testicles are not necessary, since fish and snakes generate without them, but exist for the better. As straight-gutted animals are greedier for food, so those with ducts only or testicles inside couple faster; in the more temperate the ducts coil, and the testicles steady the seminal residue, hanging on them like loom weights: removed, the ducts draw up and the castrated cannot generate, though a bull mounting just after castration did. In birds they slow the seed's outlet, swelling at mating and nearly vanishing after.

Τὰ μὲν οὖν εἰρημένα μόρια τοῖς ζῴοις τοῦτον ἔχει
The indeed then said parts in-the animals this have
τὸν τρόπον· περὶ δὲ τῆς ἐν τοῖς ἄρρεσι διαφορᾶς τῶν
the way about and the in the males difference of-the
σπερματικῶν ὀργάνων, εἴ τις μέλλει θεωρήσειν τὰς αἰτίας
seminal organs if anyone is-going to-study the causes

δι᾽ ἅς εἰσιν, ἀνάγκη λαβεῖν πρῶτον τίνος ἕνεκεν ἡ
because-of which they-are necessary to-grasp first of-what for-the-sake the
τῶν ὄρχεών ἐστι σύστασις. Εἰ δὴ πᾶν ἡ φύσις ἢ
of-the testes is structure If indeed everything the nature either
διὰ τὸ ἀναγκαῖον ποιεῖ ἢ διὰ τὸ βέλτιον, κἂν τοῦτο τὸ
because-of the necessary makes or because-of the better also this the
μόριον εἴη διὰ τούτων θάτερον. Ὅτι μὲν τοίνυν οὐκ
part would-be because-of these one-of-the-two That indeed then not
ἀναγκαῖον πρὸς τὴν γένεσιν, φανερόν· πᾶσι γὰρ ἂν ὑπῆρχε
necessary for the generation evident to-all for — it-would-belong
τοῖς γεννῶσι, νῦν δ᾽ οὔθ᾽ οἱ ὄφεις ἔχουσιν ὄρχεις οὔθ᾽ οἱ
to-the generating-ones now but neither the snakes have testes nor the
ἰχθύες· ὠμμένοι γάρ εἰσι συνδυαζόμενοι καὶ πλήρεις ἔχοντες
fish seen for they-are coupling and full having
θοροῦ τοὺς πόρους. Λείπεται τοίνυν βελτίονός τινος χάριν.
of-milt the ducts It-remains then of-better something for-the-sake
Ἔστι δὲ τῶν μὲν πλείστων ζῴων ἔργον σχεδὸν οὐθὲν
It-is and of-the indeed most animals work nearly nothing
ἄλλο πλὴν ὥσπερ τῶν φυτῶν σπέρμα καὶ καρπός. Ὥσπερ
other except just-as of-the plants seed and fruit Just-as
δ᾽ ἐν τοῖς περὶ τὴν τροφὴν τὰ εὐθυέντερα λαβρότερα πρὸς
and in the about the nourishment the straight-gutted more-voracious toward
τὴν ἐπιθυμίαν τὴν τῆς τροφῆς, οὕτω καὶ τὰ μὴ ἔχοντα
the desire the of-the nourishment so also the not having
ὄρχεις πόρους δὲ μόνον, ἢ ἔχοντα μὲν ἐντὸς δ᾽ ἔχοντα,
testes ducts but only or having indeed inside but having
πάντα ταχύτερα πρὸς τὴν ἐνέργειαν τῶν συνδυασμῶν.
all quicker toward the activity of-the couplings
Ἃ δὲ δεῖ σωφρονέστερα εἶναι, ὥσπερ ἐκεῖ οὐκ εὐθυέντερα,
Which but must more-temperate to-be just-as there not straight-gutted
καὶ ἐνταῦθ᾽ ἕλικας ἔχουσιν οἱ πόροι πρὸς τὸ μὴ λάβρον
also here coils have the ducts toward the not voracious

μηδὲ ταχεῖαν εἶναι τὴν ἐπιθυμίαν. Οἱ δ' ὄρχεις εἰσὶ πρὸς
nor quick to-be the desire The and testes are for
τοῦτο μεμηχανημένοι· τοῦ γὰρ σπερματικοῦ περιττώματος
this contrived of-the for seminal residue
στασιμωτέραν ποιοῦσι τὴν κίνησιν, ἐν μὲν τοῖς ζῳοτόκοις,
steadier they-make the motion in indeed the live-bearing
οἷον ἵπποις τε καὶ τοῖς ἄλλοις τοῖς τοιούτοις, καὶ ἐν
such-as horses both and the others the such and in
ἀνθρώποις σώζοντες τὴν ἐπαναδίπλωσιν. Ὅν δὲ τρόπον
men preserving the doubling-back In-what but way
ἔχει αὕτη, ἐκ τῶν ἱστοριῶν τῶν περὶ τὰ ζῷα δεῖ
has this from the inquiries the about the animals one-must
θεωρεῖν. Οὐθὲν γάρ εἰσι μόριον τῶν πόρων οἱ ὄρχεις,
to-study Nothing for are part of-the ducts the testes
ἀλλὰ πρόσκεινται, καθάπερ τὰς λαιὰς προσάπτουσιν
but they-are-attached just-as the loom-weights attach
αἱ ὑφαίνουσαι τοῖς ἱστοῖς· ἀφαιρουμένων γὰρ αὐτῶν
the weaving-women to-the looms being-removed for them
ἀνασπῶνται οἱ πόροι ἐντός, ὥστ' οὐ δύνανται γεννᾶν τὰ
are-drawn-up the ducts inside so-that not they-can to-generate the
ἐκτεμνόμενα, ἐπεὶ εἰ μὴ ἀνεσπῶντο, ἐδύναντο ἄν, καὶ ἤδη
castrated since if not they-were-drawn-up they-could — and already
ταῦρός τις μετὰ τὴν ἐκτομὴν εὐθέως ὀχεύσας ἐπλήρωσε
bull some after the castration at-once having-mounted impregnated
διὰ τὸ μήπω τοὺς πόρους ἀνεσπάσθαι. Τοῖς δ'
because-of the not-yet the ducts to-have-been-drawn-up In-the and
ὄρνισι καὶ τοῖς ᾠοτόκοις τῶν τετραπόδων δέχονται τὴν
birds and in-the egg-laying of-the quadrupeds receive the
σπερματικὴν περίττωσιν, ὥστε βραδυτέραν εἶναι τὴν ἔξοδον
seminal residue so-that slower to-be the outlet
ἢ τοῖς ἰχθύσιν. Φανερὸν δ' ἐπὶ τῶν ὀρνίθων· περὶ γὰρ
than in-the fish Evident and in-the-case-of the birds about for

τὰς ὀχείας πολὺ μείζους ἴσχουσι τοὺς ὄρχεις, καὶ ὅσα
the copulations much larger they-have the testes and as-many-as
γε τῶν ὀρνέων καθ' ὥραν μίαν ὀχεύει, ὅταν ὁ χρόνος
at-least of-the birds at season one mount when the time
οὗτος παρέλθῃ, οὕτω μικροὺς ἔχουσιν ὥστε σχεδὸν ἀδήλους
this pass so small they-have so-that nearly invisible
εἶναι, περὶ δὲ τὴν ὀχείαν σφόδρα μεγάλους. Θᾶττον μὲν
to-be about but the copulation very large Quicker indeed
οὖν ὀχεύουσι τὰ ἐντὸς ἔχοντα· καὶ γὰρ τὰ ἐκτὸς ἔχοντα οὐ
then mount the inside having and for the outside having not
πρότερον τὸ σπέρμα ἀφίησι πρὶν ἀνασπάσαι τοὺς ὄρχεις.
before the seed emit before to-draw-up the testes

V · THE ORGAN OF COUPLING

The quadrupeds have a coupling organ, their legs allowing it; birds and the footless do not, their legs lying under the belly or absent, so they lack testicles or have them elsewhere. Outside testicles gather the seed until motion heats the organ, not ready at a touch as in fish. All live-bearers have them in front or outside but the hedgehog, which has them by the loin for the birds' reason: its spines make it couple upright, and quickly.

Ἔτι δὲ τὸ ὄργανον τὸ πρὸς τὸν συνδυασμὸν τὰ μὲν
Further and the organ the for the coupling the indeed
τετράποδα ἔχει· ἐνδέχεται γὰρ αὐτοῖς ἔχειν· τοῖς δ' ὄρνισι
quadrupeds have it-is-possible for for-them to-have for-the but birds
καὶ τοῖς ἄποσιν οὐκ ἐνδέχεται διὰ τὸ τῶν μὲν τὰ
and for-the footless not it-is-possible because-of the of-the-ones indeed the
σκέλη ὑπὸ μέσην εἶναι τὴν γαστέρα, τὰ δ' ὅλως
legs under middle to-be the belly the-others and altogether
ἀσκελῆ εἶναι, τὴν δὲ τοῦ αἰδοίου φύσιν ἠρτῆσθαι ἐντεῦθεν
legless to-be the and of-the genital nature to-be-attached thence

καὶ τῇ θέσει κεῖσθαι ἐνταῦθα. Διὸ καὶ ἐν τῇ ὁμιλίᾳ ἡ
and in-the position to-lie there Wherefore also in the intercourse the
σύντασις γίνεται τῶν σκελῶν· τό τε γὰρ ὄργανον νευρῶδες
straining occurs of-the legs the both for organ sinewy
καὶ ἡ φύσις τῶν σκελῶν νευρώδης. Ὥστ' ἐπεὶ τοῦτ' οὐκ
and the nature of-the legs sinewy So-that since this not
ἐνδέχεται ἔχειν, ἀνάγκη καὶ ὄρχεις ἢ μὴ ἔχειν ἢ μὴ ἐνταῦθ'
it-is-possible to-have necessary also testes either not to-have or not there
ἔχειν· τοῖς γὰρ ἔχουσιν ἡ αὐτὴ θέσις ἀμφοτέρων αὐτῶν.
to-have for-the for having the same position of-both them
Ἔτι δὲ τοῖς γε τοὺς ὄρχεις ἔχουσιν ἔξω διὰ τῆς
Further and for-those at-least the testes having outside through the
κινήσεως θερμαινομένου τοῦ αἰδοίου προέρχεται τὸ σπέρμα
motion being-heated the genital comes-forth the seed
συναθροισθέν, ἀλλ' οὐχ ὡς ἕτοιμον ὂν εὐθὺς θιγοῦσιν,
collected but not as ready being at-once to-those-touching
ὥσπερ τοῖς ἰχθύσιν. Πάντα δ' ἔχει τὰ ζῳοτόκα τοὺς
just-as for-the fish All and have the live-bearing the
ὄρχεις ἐν τῷ πρόσθεν ἢ ἔξω, πλὴν ἐχίνου· οὗτος δὲ πρὸς
testes in the front or outside except hedgehog this and at
τῇ ὀσφύϊ μόνος, διὰ τὴν αὐτὴν αἰτίαν δι' ἥνπερ καὶ
the loin alone because-of the same cause through which-very also
οἱ ὄρνιθες. Ταχὺν γὰρ ἀναγκαῖον γίνεσθαι τὸν συνδυασμὸν
the birds Quick for necessary to-be the coupling
αὐτῶν· οὐ γὰρ ὥσπερ τὰ τετράποδα ἐπὶ τὰ πρανῆ
of-them not for just-as the quadrupeds onto the prone
ἐπιβαίνει, ἀλλ' ὀρθοὶ μίγνυνται διὰ τὰς ἀκάνθας. Δι'
mount but upright they-mingle because-of the spines Because-of
ἣν μὲν οὖν αἰτίαν ἔχουσι τὰ ἔχοντα ὄρχεις, εἴρηται,
which indeed then cause have the having testes it-has-been-said
καὶ δι' ἣν αἰτίαν τὰ μὲν ἔξω τὰ δ' ἐντός.
and because-of which cause the-ones indeed outside the-others and inside

Fish and snakes lack that organ because they have only what is necessary, and because their coupling must be quick: fish couple lying alongside one another and part swiftly, since emission needs the breath held, and they, taking in no sea meanwhile, are easily destroyed. Their seed is already concocted by the season and held ready all together, so they have no testicles, only straight, simple ducts, like the bloodless part of the quadrupeds' coiled duct, through which the seed passes quickly.

Ὅσα δὲ μὴ ἔχει, καθάπερ εἴρηται, διά τε τὸ μὴ εὖ
As-many-as and not have just-as has-been-said because-of both the not well
ἀλλὰ τὸ ἀναγκαῖον μόνον οὐκ ἔχει τοῦτο τὸ μόριον, καὶ
but the necessary only not have this the part and
διὰ τὸ ἀναγκαῖον εἶναι ταχεῖαν γίνεσθαι τὴν ὀχείαν·
because-of the necessary to-be quick to-come-about the copulation
τοιαύτη δ' ἐστὶν ἡ τῶν ἰχθύων φύσις καὶ ἡ τῶν ὄφεων.
such and is the of-the fish nature and the of-the snakes
Οἱ μὲν γὰρ ἰχθύες ὀχεύουσι παραπίπτοντες καὶ ἀπολύονται
The indeed for fish mount falling-alongside and are-released
ταχέως. Ὥσπερ γὰρ ἐπὶ τῶν ἀνθρώπων καὶ πάντων
quickly Just-as for in-the-case-of the men and all
τῶν τοιούτων ἀνάγκη κατασχόντας τὸ πνεῦμα προΐεσθαι
the such necessary having-held the breath to-emit
τὴν γονήν· τοῦτο δ' ἐκείνοις συμβαίνει μὴ δεχομένοις τὴν
the semen this and for-those happens not receiving the
θάλατταν, εἰσὶ δὲ εὔφθαρτοι τοῦτο μὴ ποιοῦντες. Οὔκουν
sea they-are and easily-destroyed this not doing Therefore-not
δεῖ ἐν τῷ συνδυασμῷ τὸ σπέρμα πέττειν αὐτούς, ὥσπερ
must in the coupling the seed to-concoct them just-as
τὰ πεζὰ καὶ ζῳοτόκα, ἀλλ' ὑπὸ τῆς ὥρας τὸ σπέρμα
the land and live-bearing but by the season the seed
πεπεμμένον ἀθρόον ἔχουσιν, ὥστε μὴ ἐν τῷ θιγγάνειν
concocted all-together they-have so-that not in the touching

ἀλλήλων ποιεῖν, ἀλλὰ προΐεσθαι πεπεμμένον. Διὸ ὄρχεις
one-another to-make but to-emit concocted Wherefore testes
οὐκ ἔχουσιν, ἀλλ᾽ εὐθεῖς καὶ ἁπλοῦς τοὺς πόρους, οἷον
not they-have but straight and simple the ducts as
μικρὸν μόριον τοῖς τετράποσιν ὑπάρχει περὶ τοὺς ὄρχεις.
small part for-the quadrupeds belongs about the testes
Τῆς γὰρ ἐπαναδιπλώσεως τοῦ πόρου τὸ μὲν ἔναιμον μέρος
Of-the for doubling-back of-the duct the indeed blooded part
ἐστὶ τὸ δ᾽ ἄναιμον, ὃ δέχεται καὶ δι᾽ οὗ ἤδη σπέρμα
is the but bloodless which receives and through which already seed
ὂν πορεύεται, ὥσθ᾽ ὅταν ἐνταῦθα ἔλθῃ ἡ γονή, ταχεῖα
being passes so-that when there it-come the semen quick
καὶ τούτοις γίνεται ἡ ἀπόλυσις. Τοῖς δ᾽ ἰχθύσι τοιοῦτος
also for-these becomes the release For-the and fish such
ὁ πόρος πᾶς ἐστὶν οἷος ἐπὶ τῶν ἀνθρώπων καὶ τῶν
the duct whole is as in-the-case-of the men and the
τοιούτων ζῴων κατὰ τὸ ἕτερον μέρος τῆς ἐπαναδιπλώσεως.
such animals at the other part of-the doubling-back

VII · HOW SNAKES COUPLE

Snakes coil round each other to couple, and have no organ, having no legs, and no testicles, being so long that seed halted on the way would cool, as in animals with a large organ, which are less fertile. Too long to fit by a small part, they twine their pliant bodies, and part more slowly than fish.

Οἱ δὲ ὄφεις ὀχεύονται περιελιττόμενοι ἀλλήλοις, οὐκ ἔχουσι
The and snakes copulate twining-round one-another not they-have
δ᾽ ὄρχεις οὐδ᾽ αἰδοῖον, ὥσπερ εἴρηται πρότερον, αἰδοῖον μὲν
but testes nor genital just-as has-been-said before genital indeed
ὅτι οὐδὲ σκέλη, ὄρχεις δὲ διὰ τὸ μῆκος, ἀλλὰ πόρους,
because not-even legs testes and because-of the length but ducts

ὥσπερ οἱ ἰχθύες· διὰ γὰρ τὸ εἶναι αὐτῶν προμήκη τὴν
just-as the fish because-of for the to-be their elongated the
φύσιν, εἰ ἔτι ἐπίστασις ἐγίγνετο περὶ τοὺς ὄρχεις, ἐψύχετ'
nature if further halting arose about the testes would-be-cooled
ἂν ἡ γονὴ διὰ τὴν βραδυτῆτα. Ὅπερ συμβαίνει καὶ
— the semen because-of the slowness Which-very happens also
ἐπὶ τῶν μέγα τὸ αἰδοῖον ἐχόντων· ἀγονώτεροι γάρ εἰσι
in-the-case-of those great the genital having less-fertile for they-are
τῶν μετριαζόντων διὰ τὸ μὴ γόνιμον εἶναι τὸ σπέρμα τὸ
than-the moderate because-of the not fertile to-be the seed the
ψυχρόν, ψύχεσθαι δὲ τὸ φερόμενον λίαν μακράν. Δι' ἣν
cold to-be-cooled and the carried too far Because-of which
μὲν οὖν αἰτίαν τὰ μὲν ὄρχεις ἔχει τὰ δ' οὐκ ἔχει τῶν
indeed then cause the-ones indeed testes have the-others and not have of-the
ζῴων, εἴρηται· περιπλέκονται δ' ἀλλήλοις οἱ ὄφεις διὰ
animals it-has-been-said twine and one-another the snakes because-of
τὴν ἀφυΐαν τῆς παραπτώσεως. Μικρῷ γὰρ προσαρμόττοντες
the unfitness of-the falling-alongside With-small for fitting
μορίῳ λίαν μακροὶ ὄντες οὐκ εὐσυνάρμοστοί εἰσιν· ἐπεὶ
part too long being not easy-to-fit-together they-are since
οὖν οὐκ ἔχουσι μόρια οἷς περιλήψονται, ἀντὶ τούτων
then not they-have parts with-which they-will-grasp instead-of these
τῇ ὑγρότητι χρῶνται τοῦ σώματος, περιελιττόμενοι
with-the pliancy they-use of-the body twining-round
ἀλλήλοις. Διὸ καὶ δοκοῦσι βραδύτερον ἀπολύεσθαι τῶν
one-another Wherefore also they-seem slower to-be-released than-the
ἰχθύων, οὐ μόνον διὰ τὸ μῆκος τῶν πόρων ἀλλὰ καὶ
fish not only because-of the length of-the ducts but also
διὰ τὴν περὶ ταῦτα σκευωρίαν.
because-of the about these elaborateness

The uterus is a puzzle, since it lies in contrary places: in man and the walking animals low by the joints, in the live-bearing selachians high by the diaphragm; among the egg-layers, low in fish, high in birds and the egg-laying quadrupeds. The cause is the kind of egg each produces: fish, being prolific, emit incomplete eggs that are completed and grow outside, while birds and the egg-laying quadrupeds lay complete eggs, whose hard shell needs the heat of the region by the diaphragm, where nourishment too is concocted. Where nothing hinders it, the uterus lies low by nature, since the end of the body is there.

Τοῖς δὲ θήλεσι τὰ περὶ τὰς ὑστέρας ἀπορήσειεν ἄν τις
For-the and females the about the uteri would-be-puzzled — someone
ὂν τρόπον ἔχει· πολλαὶ γὰρ ὑπεναντιώσεις ὑπάρχουσιν
in-what way it-is many for oppositions belong
αὐτοῖς. Οὔτε γὰρ τὰ ζῳοτοκοῦντα ὁμοίως ἔχει πάντα, ἀλλ᾽
to-them Neither for the live-bearing likewise have all but
ἄνθρωποι μὲν καὶ τὰ πεζὰ πάντα κάτω πρὸς τοῖς ἄρθροις,
men indeed and the land all below at the joints
τὰ δὲ σελάχη ζῳοτοκοῦντα ἄνω πρὸς τῷ ὑποζώματι, οὔτε
the but selachians live-bearing above at the diaphragm nor
τὰ ᾠοτοκοῦντα, ἀλλ᾽ οἱ μὲν ἰχθύες κάτω καθάπερ ἄνθρωπος
the egg-laying but the indeed fish below just-as man
καὶ τὰ ζῳοτοκοῦντα τῶν τετραπόδων, οἱ δ᾽ ὄρνιθες ἄνω,
and the live-bearing of-the quadrupeds the but birds above
καὶ ὅσα ᾠοτοκεῖ τῶν τετραπόδων. Οὐ μὴν ἀλλ᾽ ἔχουσι
and as-many-as lay-eggs of-the quadrupeds Not truly but have
καὶ αὗται αἱ ὑπεναντιώσεις κατὰ λόγον, πρῶτον μὲν
also these the oppositions according-to reason first indeed
γὰρ τὰ ᾠοτοκοῦντα ᾠοτοκεῖ διαφερόντως. Τὰ μὲν
for the egg-laying lay-eggs differently The-ones indeed
γὰρ ἀτελῆ προΐεται τὰ ᾠά, οἷον οἱ ἰχθύες. Ἔξω γὰρ
for incomplete emit the eggs such-as the fish Outside for

ἐπιτελεῖται καὶ λαμβάνει αὔξησιν τὰ τῶν ἰχθύων. Αἴτιον
is-completed and takes growth the of-the fish Cause
δ' ὅτι πολύγονα ταῦτα, καὶ τοῦτ' ἔργον αὐτῶν ὥσπερ τῶν
and that prolific these and this work of-them just-as of-the
φυτῶν. Εἰ οὖν ἐν αὑτοῖς ἐτελεσιούργουν, ἀναγκαῖον ὀλίγα
plants If then in themselves they-completed necessary few
τῷ πλήθει εἶναι· νῦν δὲ τοσαῦτα ἴσχουσιν ὥστε δοκεῖν ᾠὸν
in-the number to-be now but so-many they-have so-that to-seem egg
εἶναι τὴν ὑστέραν ἑκατέραν ἔν γε τοῖς μικροῖς ἰχθυδίοις.
to-be the uterus each in at-least the small little-fish
Ταῦτα γὰρ πολυγονώτατά ἐστιν, ὥσπερ καὶ ἐπὶ τῶν
These for most-prolific are just-as also in-the-case-of the
ἄλλων τῶν ἀνάλογον τούτοις ἐχόντων τὴν φύσιν, καὶ ἐν
others the analogously to-these having the nature both in
φυτοῖς καὶ ἐν ζῴοις· ἡ γὰρ τοῦ μεγέθους αὔξησις τρέπεται
plants and in animals the for of-the size growth is-turned
εἰς τὸ σπέρμα τούτοις. Οἱ δ' ὄρνιθες καὶ τὰ τετράποδα τῶν
into the seed for-these The but birds and the quadrupeds of-the
ᾠοτόκων τέλεια ᾠὰ τίκτουσιν, ἃ δεῖ πρὸς τὸ σώζεσθαι
egg-layers complete eggs bear which must for the being-preserved
σκληρόδερμα εἶναι· μαλακόδερμα γάρ, ἕως ἂν αὔξησιν ἔχῃ,
hard-skinned to-be soft-skinned for until — growth it-have
ἐστίν. Τὸ δ' ὄστρακον γίνεται ὑπὸ θερμότητος ἐξικμαζούσης
it-is The and shell comes-to-be by heat drawing-off
τὸ ὑγρὸν ἐκ τοῦ γεώδους. Ἀναγκαῖον οὖν θερμὸν εἶναι τὸν
the moist from the earthy Necessary then hot to-be the
τόπον ἐν ᾧ τοῦτο συμβήσεται. Τοιοῦτος δ' ὁ περὶ τὸ
place in which this will-happen Such and the about the
ὑπόζωμα· καὶ γὰρ τὴν τροφὴν πέττει οὗτος. Εἰ οὖν τὰ ᾠὰ
diaphragm and for the nourishment concocts this If then the eggs
ἀνάγκη ἐν τῇ ὑστέρᾳ εἶναι, καὶ τὴν ὑστέραν ἀνάγκη πρὸς
necessary in the uterus to-be also the uterus necessary at

τῷ ὑποζώματι εἶναι τοῖς τέλεια τὰ ᾠὰ τίκτουσι, τοῖς δ'
the diaphragm to-be for-those complete the eggs bearing for-those but
ἀτελῆ κάτω· πρὸ ὁδοῦ γὰρ οὕτως ἔσται. Καὶ πέφυκε δὲ
incomplete below on-the way for so it-will-be Also is-natural and
μᾶλλον ἡ ὑστέρα κάτω εἶναι ἢ ἄνω, ὅπου μή τι ἐμποδίζει
more the uterus below to-be than above where not some hinders
ἕτερον ἔργον τῆς φύσεως· κάτω γὰρ αὐτῆς καὶ τὸ πέρας
other work of-the nature below for of-it also the end
ἐστίν· ὅπου δὲ τὸ πέρας, τὸ ἔργον· αὐτὴ δ' οὗ τὸ ἔργον.
is where and the end the work it and where the work

IX · THE LIVE-BEARERS

The live-bearing animals differ among themselves: some bear live both inside and out, such as man, horse, dog, every animal with hair, and among the aquatic the dolphins, whales, and such cetaceans.

Ἔχει δὲ καὶ τὰ ζωοτοκοῦντα πρὸς ἄλληλα διαφοράν.
Have and also the live-bearing toward one-another difference
Τὰ μὲν γὰρ οὐ μόνον θύραζε ζωοτοκεῖ ἀλλὰ καὶ ἐν
The-ones indeed for not only outside bear-live but also in
αὑτοῖς, οἷον ἄνθρωποί τε καὶ ἵπποι καὶ κύνες καὶ πάντα
themselves such-as men both and horses and dogs and all
τὰ τρίχας ἔχοντα, καὶ τῶν ἐνύδρων δελφῖνές τε, καὶ
the hair having and of-the water-animals dolphins both and
φάλαιναι καὶ τὰ τοιαῦτα κήτη.
whales and the such cetaceans

The selachians and the vipers bear live outwardly but first produce an egg within. The egg they produce is complete, since an animal comes only from a complete egg; they do not lay it outside because they are cold by nature, not hot as some say.

Τὰ δὴ σελάχη καὶ οἱ ἔχεις θύραζε μὲν ζῳοτοκοῦσιν, ἐν
The indeed selachians and the vipers outside indeed bear-live in
αὑτοῖς δ' ᾠοτοκοῦσι πρῶτον. Ὠοτοκοῦσι δὲ τέλειον ᾠόν·
themselves but lay-eggs first They-lay-eggs and complete egg
οὕτως γὰρ γεννᾶται ἐκ τοῦ ᾠοῦ τὸ ζῷον, ἐξ ἀτελοῦς
so for is-generated from the egg the animal from incomplete
δὲ οὐθέν. Θύραζε δὲ οὐκ ᾠοτοκοῦσι διὰ τὸ ψυχρὰ τὴν
but nothing Outside but not they-lay-eggs because-of the cold the
φύσιν εἶναι καὶ οὐχ ὥς τινές φασι θερμά.
nature to-be and not as some say hot

XI · THE SOFT-SHELLED EGG

These animals make soft-shelled eggs, since their little heat cannot dry the outer layer, and soft eggs laid outside would perish. The young hatch as in birds, then come down and become animals by the joints, so the selachians' uterus shares both kinds, from the diaphragm down. Those bearing live at once all have it low: nothing hinders it, they do not generate twice, the vital place by the diaphragm could not bear an embryo's weight and motion, and the long passage would make birth hard, as for women whose uterus is drawn up. Such uteri are fleshy, those by the diaphragm membranous; in animals that generate twice, the eggs lie high and the young low.

Μαλακόδερμα γοῦν τὰ ᾠὰ γεννῶσιν· διὰ γὰρ τὸ
Soft-skinned at-any-rate the eggs they-generate because-of for the
εἶναι ὀλιγόθερμα οὐ ξηραίνει αὐτῶν ἡ φύσις τὸ ἔσχατον.
to-be little-hot not dries their the nature the outermost
Διὰ μὲν οὖν τὸ ψυχρὰ εἶναι μαλακόδερμα γεννῶσι,
Because-of indeed then the cold to-be soft-skinned they-generate
διὰ δὲ τὸ μαλακόδερμα οὐ θύραζε· διεφθείρετο γὰρ ἄν.
because-of and the soft-skinned not outside would-be-destroyed for —
Ὅταν δὲ ζῷον ἐκ τοῦ ᾠοῦ γίγνηται, τὸν αὐτὸν τρόπον
When and animal from the egg come-to-be the same way
τὰ πλεῖστα γίγνεται ὅνπερ ἐν τοῖς ὄρνισιν· καταβαίνει
the most comes-to-be in-which-very in the birds goes-down
γὰρ κάτω, καὶ γίγνεται ζῷα πρὸς τοῖς ἄρθροις, καθάπερ
for downward and becomes animals at the joints just-as
καὶ τοῖς ἐξ ἀρχῆς εὐθὺς ζωοτοκοῦσιν. Διὸ καὶ τὴν
also in-the from beginning at-once bearing-live Wherefore also the
ὑστέραν τὰ τοιαῦτα ἔχει ἀνομοίαν καὶ τοῖς ζωοτόκοις καὶ
uterus the such have unlike both to-the live-bearing and
τοῖς ᾠοτόκοις, διὰ τὸ ἀμφοτέρων μετέχειν τῶν εἰδῶν·
to-the egg-laying because-of the of-both to-share the forms

καὶ γὰρ πρὸς τῷ ὑποζώματι ἔχουσι καὶ κάτω παρήκουσαν
both for at the diaphragm they-have and below extending
πάντα τὰ σελαχώδη. Δεῖ δὲ καὶ περὶ ταύτης καὶ περὶ
all the selachians It-is-needful and also about this and about
τῶν ἄλλων ὑστερῶν, ὃν τρόπον ἔχουσιν, ἔκ τε τῶν
the other uteri in-what way they-are from both the
ἀνατομῶν τεθεωρηκέναι καὶ τῶν ἱστοριῶν. Ὥστε διὰ
dissections to-have-studied and the inquiries So-that because-of
μὲν τὸ ᾠοτόκα εἶναι τελείων ᾠῶν ἄνω ἔχει, διὰ
indeed the egg-laying to-be of-complete eggs above they-have because-of
δὲ τὸ ζῳοτοκεῖν κάτω, καὶ ἀμφοτέρων μετειλήφασιν.
and the bearing-live below and of-both they-have-taken-share
Τὰ δ' εὐθὺς ζῳοτοκοῦντα πάντα κάτω· οὐ γὰρ ἐμποδίζει τῆς
The but at-once bearing-live all below not for hinders of-the
φύσεως οὐδὲν ἔργον, οὐδὲ διττογονεῖ, πρὸς δὲ τούτοις
nature no work nor do-they-generate-twice in-addition-to and these
ἀδύνατον ζῷα γίγνεσθαι πρὸς τοῖς ὑποζώμασιν· τὰ μὲν
impossible animals to-come-to-be at the diaphragms the indeed
γὰρ ἔμβρυα βάρος ἔχειν ἀναγκαῖον, καὶ κίνησιν, ὁ δὲ τόπος
for embryos weight to-have necessary and motion the but place
ἐπίκαιρος ὢν τοῦ ζῆν οὐκ ἂν δύναιτο ταῦθ' ὑπενεγκεῖν.
vital being for-the living not — could these to-bear
Ἔτι δ' ἀνάγκη δυστοκίαν εἶναι διὰ τὸ μῆκος τῆς φορᾶς,
Further and necessary difficult-birth to-be because-of the length of-the passage
ἐπεὶ καὶ νῦν ἐπὶ τῶν γυναικῶν, ἐὰν περὶ τὸν τόκον
since even now in-the-case-of the women if about the birth
ἀνασπάσωσι χασμησάμεναι ἤ τι τοιοῦτον ποιήσασαι,
they-draw-up having-yawned or something such having-done
δυστοκοῦσιν. Καὶ κεναὶ δ' οὖσαι αἱ ὑστέραι ἄνω
they-have-difficult-birth Also empty and being the uteri upward
προσιστάμεναι πνίγουσιν· καὶ γὰρ ἀνάγκη τὰς μελλούσας
pressing choke and for necessary the being-about

ζῷον ἔξειν ἰσχυροτέρας εἶναι, διὸ σαρκώδεις εἰσὶν αἱ
animal to-hold stronger to-be wherefore fleshy are the
τοιαῦται πᾶσαι, αἱ δὲ πρὸς τοῖς ὑποζώμασιν ὑμενώδεις.
such all the but at the diaphragms membranous
Καὶ ἐπ' αὐτῶν δὲ τῶν διγονίαν ποιουμένων ζῴων
Also in-the-case-of themselves and the double-generation making animals
φανερὸν τοῦτο συμβαῖνον· τὰ μὲν γὰρ ᾠὰ ἄνω καὶ ἐν τῷ
evident this happening the indeed for eggs above and in the
πλαγίῳ ἴσχουσι, τὰ δὲ ζῷα ἐν τῷ κάτω μέρει τῆς ὑστέρας.
side they-hold the but animals in the lower part of-the uterus
Δι' ἣν μὲν οὖν αἰτίαν ὑπεναντίως ἔχουσι τὰ περὶ τὰς
Because-of which indeed then cause oppositely have the about the
ὑστέρας ἔνια τῶν ζῴων, καὶ ὅλως διὰ τί τοῖς μὲν
uteri some of-the animals and generally because-of what for-the-ones indeed
κάτω τοῖς δὲ ἄνω πρὸς τῷ ὑποζώματί εἰσιν, εἴρηται.
below for-the-others and above at the diaphragm they-are it-has-been-said

XII · UTERUS INSIDE, TESTICLES OUT

The uterus is always inside because what grows there needs guarding, shelter, and concoction, and the outside of the body is cold and easily harmed. The testicles too need covering, for safety and for concocting the seed, which chilled could not be drawn up and emitted: where they show, the skin called the scrotum covers them, and where the skin is too hard, as in the fish-skinned and scaly, the dolphins and cetaceans, the birds, the elephant, and the hedgehog, they lie inside. The uteri lie in contrary places; in live-bearers such as man, ox, and dog they lie low on the belly, since no weight should press on them.

Διότι δὲ τὰς μὲν ὑστέρας ἔχουσι πάντα ἐντός, τοὺς δ'
Why and the indeed uteri have all inside the but
ὄρχεις τὰ μὲν ἐκτὸς τὰ δ' ἐντός, αἴτιον τοῦ μὲν τὰς
testes the-ones indeed outside the-others and inside cause of-the indeed the
ὑστέρας ἐντὸς εἶναι πᾶσιν, ὅτι ἐν ταύταις ἐστὶ τὸ γινόμενον,
uteri inside to-be in-all that in these is the coming-to-be
ὃ δεῖται φυλακῆς καὶ σκέπης καὶ πέψεως, ὁ δ' ἐκτὸς
which needs guarding and covering and concoction the but outside
τοῦ σώματος τόπος εὔβλαπτος καὶ ψυχρός. Οἱ δ' ὄρχεις
of-the body place easily-harmed and cold The and testes
τοῖς μὲν ἐντὸς τοῖς δ' ἐκτὸς διὰ τὸ δεῖσθαι καὶ
for-the-ones indeed inside for-the-others and outside because-of the to-need also
τούτους σκέπης καὶ καλύμματος πρός τε σωτηρίαν καὶ
these covering and wrapping for both preservation and
πρὸς τὴν τοῦ σπέρματος πέψιν· ἀδύνατον γὰρ ἐψυγμένους
for the of-the seed concoction impossible for chilled
καὶ πεπηγότας ἀνασπᾶσθαι καὶ προΐεσθαι τὴν γονήν.
and congealed to-be-drawn-up and to-emit the semen
Διόπερ ὅσοις ἐν φανερῷ εἰσὶν οἱ ὄρχεις, ἔχουσι σκέπην
Wherefore for-as-many-as in view are the testes they-have covering
δερματικὴν τὴν καλουμένην ὀσχέαν. Ὅσοις δ' ἡ τοῦ
of-skin the so-called scrotum For-as-many-as but the of-the

δέρματος φύσις ἐναντιοῦται διὰ σκληρότητα πρὸς τὸ μὴ
skin nature is-opposed because-of hardness to the not
περιληπτικὴν εἶναι μηδὲ μαλθακὴν καὶ δερματικήν, οἷον
enveloping to-be nor soft and skin-like such-as
τοῖς τ' ἰχθυώδες ἔχουσι τὸ δέρμα καὶ τοῖς φολιδωτόν,
to-the both fish-like having the skin and to-the scaly
τούτοις δ' ἀναγκαῖον ἐντὸς ἔχειν. Διόπερ οἵ τε δελφῖνες
for-these and necessary inside to-have Wherefore the both dolphins
καὶ ὅσα τῶν κητωδῶν ὄρχεις ἔχουσιν, ἐντὸς ἔχουσι,
and as-many-as of-the cetaceans testes have inside have
καὶ τὰ ᾠοτόκα καὶ τετράποδα τῶν φολιδωτῶν.
and the egg-laying and quadrupeds of-the scaly
Καὶ τὸ τῶν ὀρνίθων δὲ δέρμα σκληρόν, ὥστε κατὰ
Also the of-the birds and skin hard so-that in-respect-of
μέγεθος ἀσύμμετρον εἶναι περιλαβεῖν, καὶ ταύτην αἰτίαν
size unfitting to-be to-envelop and this cause
εἶναι πᾶσι τούτοις πρὸς ταῖς εἰρημέναις πρότερον ἐκ
to-be for-all these in-addition-to the said before from
τῶν περὶ τὰς ὀχείας συμβαινόντων ἀναγκαίων. Διὰ τὴν
the about the copulations happenings necessary Because-of the
αὐτὴν δ' αἰτίαν καὶ ὁ ἐλέφας καὶ ὁ ἐχῖνος ἔχουσιν ἐντὸς
same and cause also the elephant and the hedgehog have inside
τοὺς ὄρχεις· οὐδὲ γὰρ τούτοις εὐφυὲς τὸ δέρμα πρὸς τὸ
the testes not-even for for-these well-suited the skin for the
χωριστὸν ἔχειν τὸ σκεπαστικὸν μόριον. Κεῖνται δὲ καὶ τῇ
separate to-have the covering part Lie and also in-the
θέσει ὑπεναντίως αἱ ὑστέραι τοῖς τε ζῳοτοκοῦσιν ἐν αὑτοῖς
position oppositely the uteri for-the both bearing-live in themselves
καὶ τοῖς ᾠοτοκοῦσι θύραζε, καὶ τούτων τοῖς τε τὰς ὑστέρας
and for-the laying-eggs outside and of-these for-the both the uteri
ἔχουσι κάτω καὶ τοῖς πρὸς τῷ ὑποζώματι, οἷον τοῖς ἰχθύσι
having below and for-those at the diaphragm such-as for-the fish

πρός τε τοὺς ὄρνιθας καὶ τὰ ᾠοτόκα τῶν τετραπόδων, καὶ
against both the birds and the egg-laying of-the quadrupeds and
τοῖς κατ᾽ ἀμφοτέρους τοὺς τρόπους γεννῶσιν, ἐν ἑαυτοῖς
for-those in both the ways generating in themselves
μὲν ᾠοτοκοῦσιν, εἰς δὲ τὸ φανερὸν ζῳοτοκοῦσιν. Τὰ μὲν
indeed they-lay-eggs into but the open they-bear-live The indeed
γὰρ ζῳοτοκοῦντα καὶ ἐν αὐτοῖς καὶ ἐκτὸς ἐπὶ τῆς γαστρὸς
for live-bearing both in themselves and outside on the belly
ἔχει τὰς ὑστέρας, οἷον ἄνθρωπος καὶ βοῦς καὶ κύων καὶ
have the uteri such-as man and ox and dog and
τἆλλα τὰ τοιαῦτα· πρὸς γὰρ τὴν τῶν ἐμβρύων σωτηρίαν καὶ
the-other the such for for the of-the embryos preservation and
αὔξησιν συμφέρει μηθὲν ἐπεῖναι βάρος ἐπὶ ταῖς ὑστέραις.
growth it-is-of-advantage nothing to-be-on weight on the uteri

XIII · THE PASSAGES

Besides the passage for the dry residue, all these animals have genitals for the moist residue, carrying the seed in males, the fetus in females. The egg-laying fish have the uterus by the loin, and egg-layers without a genital, even tortoises with a bladder, use the dry residue's passage. The passages are double for generation, the moist residue sharing the seed's; ducts and uteri must be fixed, in front in the live-bearers, at the loin and back in the egg-layers, and both ways in those that do both. The males' ducts are fixed by the spine; the dolphin's testicles lie hidden in the belly.

Ἔστι δὲ καὶ ἕτερος ὁ πόρος δι᾽ οὗ ἥ τε ξηρὰ
There-is and also other the duct through which the both dry
περίττωσις ἐξέρχεται καὶ δι᾽ οὗ ἡ ὑγρὰ τούτοις πᾶσιν.
residue goes-out and through which the moist for-these all
Διὸ ἔχουσιν αἰδοῖα τὰ τοιαῦτα πάντα καὶ τὰ ἄρρενα καὶ
Wherefore have genitals the such all both the males and

τὰ θήλεα, καθ' ὃ ἐκκρίνεται τὸ περίττωμα τὸ ὑγρὸν καὶ
the females by which is-excreted the residue the moist and
τοῖς μὲν ἄρρεσι τὸ σπέρμα, τοῖς δὲ θήλεσι τὸ κύημα. Οὗτος
in-the indeed males the seed in-the but females the fetus This
δ' ἐπάνω καὶ ἐν τοῖς προσθίοις ὑπάρχει ὁ πόρος τῆς ξηρᾶς
and above and in the front-parts is the duct of-the dry
τροφῆς. Ὅσα δ' ᾠοτοκεῖ μὲν ἀτελὲς δ' ᾠόν, οἷον ὅσοι
nourishment As-many-as but lay-eggs indeed incomplete but egg such-as as-many-as
τῶν ἰχθύων ᾠοτοκοῦσιν, οὗτοι δ' οὐχ ὑπὸ τῇ γαστρὶ ἀλλὰ
of-the fish lay-eggs these but not under the belly but
πρὸς τῇ ὀσφύϊ ἔχουσι τὰς ὑστέρας. Οὔτε γὰρ ἐμποδίζει ἡ
at the loin have the uteri Neither for hinders the
τοῦ ᾠοῦ αὔξησις, διὰ τὸ ἔξω τελειοῦσθαι καὶ προϊέναι τὸ
of-the egg growth because-of the outside to-be-completed and to-go-forth the
αὐξανόμενον· ὅ τε πόρος ὁ αὐτός ἐστι καὶ ἐν τοῖς μὴ ἔχουσι
growing the and duct the same is also in the not having
γεννητικὸν αἰδοῖον, ὁ τῆς ξηρᾶς τροφῆς πᾶσι τοῖς ᾠοτόκοις
generative genital the of-the dry nourishment for-all the egg-laying
καὶ τοῖς ἔχουσιν αὐτῶν κύστιν, οἷον ταῖς χελώναις.
even for-those having of-them bladder such-as for-the tortoises
Τῆς γενέσεως γὰρ ἕνεκεν, οὐ τῆς τοῦ ὑγροῦ περιττώματος
Of-the generation for for-the-sake not of-the of-the moist residue
ἐκκρίσεως εἰσὶ διττοὶ οἱ πόροι· διὰ δὲ τὸ ὑγρὰν εἶναι τὴν
excretion are double the ducts because-of and the moist to-be the
φύσιν τοῦ σπέρματος καὶ ἡ τῆς ὑγρᾶς τροφῆς περίττωσις
nature of-the seed also the of-the moist nourishment residue
κεκοινώνηκε τοῦ αὐτοῦ πόρου. Δῆλον δὲ τοῦτο ἐκ τοῦ
has-shared of-the same duct Clear and this from the
σπέρμα μὲν πάντα φέρειν τὰ ζῷα, περίττωμα δὲ μὴ πᾶσι
seed indeed all to-bear the animals residue but not in-all
γίνεσθαι ὑγρόν. Ἐπεὶ οὖν δεῖ καὶ τοὺς τῶν ἀρρένων
to-come-to-be moist Since then it-is-needful both the of-the males

πόρους τοὺς σπερματικοὺς ἐρηρεῖσθαι καὶ μὴ πλανᾶσθαι,
ducts the seminal to-be-fixed and not to-wander
καὶ τοῖς θήλεσι τὰς ὑστέρας, τοῦτο δ' ἀναγκαῖον ἢ
and for-the females the uteri this and necessary either
πρὸς τὰ πρόσθια τοῦ σώματος ἢ πρὸς τὰ πρανῆ
toward the front of-the body or toward the back
συμβαίνειν, τοῖς μὲν ζῳοτόκοις διὰ τὰ ἔμβρυα ἐν τοῖς
to-happen for-the indeed live-bearing because-of the embryos in the
προσθίοις αἱ ὑστέραι, τοῖς δ' ᾠοτόκοις πρὸς τῇ ὀσφύϊ καὶ
front the uteri for-the but egg-laying at the loin and
τοῖς πρανέσιν. Ὅσα δ' ᾠοτοκήσαντα ἐν αὑτοῖς ζῳοτοκεῖ
the back As-many-as but having-laid-eggs in themselves bear-live
ἐκτός, ταῦτα δ' ἀμφοτέρως ἔχει διὰ τὸ μετειληφέναι
outside these and in-both-ways have because-of the to-have-shared
ἀμφοτέρων καὶ εἶναι καὶ ζῳοτόκα καὶ ᾠοτόκα. Τὰ μὲν
of-both and to-be both live-bearing and egg-laying The indeed
γὰρ ἄνω τῆς ὑστέρας, καὶ ᾗ γίγνεται τὰ ᾠά, ὑπὸ τὸ
for upper of-the uterus and where come-to-be the eggs under the
ὑπόζωμα πρὸς τῇ ὀσφύϊ ἐστὶ καὶ τοῖς πρανέσι, προϊούσης
diaphragm at the loin is and the back advancing
δὲ κάτω ἐπὶ τῇ γαστρί· ταύτῃ γὰρ ζῳοτοκεῖ ἤδη.
and downward on the belly here for it-bears-live already
Ὁ δὲ πόρος εἷς καὶ τούτοις τῆς τε ξηρᾶς περιττώσεως
The and duct one also for-these of-the both dry residue
καὶ τῆς ὀχείας· οὐθὲν γὰρ ἔχει τούτων αἰδοῖον, καθάπερ
and of-the copulation none for has of-these genital just-as
εἴρηται πρότερον, ἀπηρτημένον. Ὁμοίως δ' ἔχουσι καὶ οἱ
has-been-said before hanging-free Likewise and have also the
τῶν ἀρρένων πόροι, καὶ τῶν ἐχόντων καὶ τῶν μὴ ἐχόντων
of-the males ducts both of-the having and of-the not having
ὄρχεις, ταῖς τῶν ᾠοτόκων ὑστέραις. Πᾶσι γὰρ πρὸς τοῖς
testes to-the of-the egg-laying uteri For-all for at the

πρανέσι προσπεφύκασι καὶ κατὰ τὸν τόπον τῆς ῥάχεως.
back they-are-attached and at the place of-the spine
Δεῖ μὲν γὰρ μὴ πλανᾶσθαι ἀλλ᾽ ἑδραίους εἶναι, τοιοῦτος
It-is-needful indeed for not to-wander but fixed to-be such
δ᾽ ὁ ὄπισθεν τόπος· οὗτος γὰρ τὸ συνεχὲς παρέχει καὶ
and the behind place this for the continuity provides and
τὴν στάσιν. Τοῖς μὲν οὖν ἐντὸς ἔχουσι τοὺς ὄρχεις εὐθὺς
the steadiness For-the indeed then inside having the testes at-once
ἐρηρεισμένοι εἰσὶν ἅμα τοῖς πόροις, καὶ τοῖς ἐκτὸς δ᾽
fixed they-are together-with the ducts and for-the outside and
ὁμοίως· εἶτ᾽ ἀπαντῶσιν εἰς ἓν πρὸς τὸν τοῦ αἰδοίου τόπον.
likewise then they-meet into one at the of-the genital place
Ὁμοίως δὲ καὶ τοῖς δελφῖσιν οἱ πόροι ἔχουσιν· ἀλλὰ τοὺς
Likewise and also in-the dolphins the ducts are but the
ὄρχεις ἔχουσι κεκρυμμένους ὑπὸ τὸ περὶ τὴν γαστέρα κύτος.
testes they-have hidden under the about the belly cavity
Πῶς μὲν οὖν ἔχουσι τῇ θέσει περὶ τὰ μόρια τὰ συντελοῦντα
How indeed then they-are in-the position about the parts the contributing
πρὸς τὴν γένεσιν, καὶ διὰ τίνας αἰτίας, εἴρηται·
toward the generation and because-of what causes it-has-been-said

Among the bloodless animals the parts for generation are not the same as in the blooded, nor among themselves. There are four kinds: crustaceans, cephalopods, insects, and testaceans; whether the last couple is unclear, though most evidently do not. The crustaceans couple like the animals that pass urine backward, one lying on its back and the other on its belly, interlocking their tails, which are too long to let one mount the other. The males have thin seminal ducts, the females a membranous uterus beside the gut, split on either side, in which the egg forms.

Τῶν δ' ἄλλων ζῴων τῶν ἀναίμων οὐχ ὁ αὐτὸς τρόπος
Of-the and other animals of-the bloodless not the same way
τῶν μορίων τῶν πρὸς τὴν γένεσιν συντελούντων οὔτε
of-the parts of-the toward the generation contributing neither
τοῖς ἐναίμοις οὔθ' ἑαυτοῖς. Ἔστι δὲ γένη τέτταρα τὰ
as-in-the blooded nor among-themselves There-are and kinds four the
λοιπά, ἓν μὲν τὸ τῶν μαλακοστράκων, δεύτερον δὲ τὸ
remaining one indeed the of-the crustaceans second and the
τῶν μαλακίων, τρίτον δὲ τὸ τῶν ἐντόμων, καὶ τέταρτον
of-the cephalopods third and the of-the insects and fourth
τὸ τῶν ὀστρακοδέρμων. Τούτων δὲ περὶ μὲν πάντων
the of-the testaceans Of-these and about indeed all
ἄδηλον, τὰ δὲ πλεῖστα ὅτι οὐ συνδυάζεται φανερόν·
unclear the but most that not couple evident
τίνα δὲ συνίσταται τρόπον, ὕστερον λεκτέον. Τὰ δὲ
in-what but they-are-constituted way later must-be-said The and
μαλακόστρακα συνδυάζεται μὲν ὥσπερ τὰ ὀπισθουρητικά,
crustaceans couple indeed just-as the backward-urinating
ὅταν τὸ μὲν ὕπτιον τὸ δὲ πρανὲς ἐπαλλάξῃ τὰ
when the-one indeed supine the-other and prone interlock the
οὐραῖα· τοῖς γὰρ ὑπτίοις πρὸς τὰ πρανῆ ἐπιβαίνειν
tail-parts for-the for supine on the prone to-mount

ἐμποδίζει τὰ οὐραῖα μακρὰν ἔχοντα τὴν ἀπάρτησιν τῶν
hinder the tail-parts long having the projection of-the
πτερυγίων. Ἔχουσι δ' οἱ μὲν ἄρρενες λεπτοὺς πόρους
flaps Have and the indeed males thin ducts
θορικούς, αἱ δὲ θήλειαι ὑστέρας ὑμενώδεις παρὰ τὸ ἔντερον,
seminal the but females uteri membranous beside the intestine
ἔνθεν καὶ ἔνθεν ἐσχισμένας· ἐν αἷς ἐγγίνεται τὸ ᾠόν.
on-this-side and on-that split in which comes-to-be-in the egg

XV · THE CEPHALOPODS

Cephalopods couple mouth to mouth, tentacles interlaced, since nature bent the residue's outlet to the mouth. One egg divides into many, laid incomplete as in fish. They couple where the shared duct opens under the mantle. The tentacle the fishermen say the octopus couples with only joins them; why they couple back to back is unknown.

Τὰ δὲ μαλάκια συμπλέκεται μὲν κατὰ τὸ στόμα,
The and cephalopods intertwine indeed at the mouth
ἀντερείδοντα καὶ διαπτύττοντα τὰς πλεκτάνας, συμπλέκεται
pressing-against and unfolding the tentacles intertwine
δὲ τὸν τρόπον τοῦτον ἐξ ἀνάγκης· ἡ γὰρ φύσις παρὰ
and the way this of necessity the for nature beside
τὸ στόμα τὴν τελευτὴν τοῦ περιττώματος συνήγαγε
the mouth the end of-the residue brought-together
κάμψασα, καθάπερ εἴρηται πρότερον ἐν τοῖς περὶ τῶν
having-bent just-as has-been-said before in the about the
μορίων λόγοις. Ἔχει δ' ἡ θήλεια μὲν ὑστερικὸν μόριον
parts discourses Has and the female indeed uterine part
φανερῶς ἐν ἑκάστῳ τούτων τῶν ζῴων· ᾠὸν γὰρ ἴσχει
evidently in each of-these the animals egg for it-holds

τὸ μὲν πρῶτον ἀδιόριστον, ἔπειτα διακρινόμενον γίνεται
the indeed first undistinguished then being-divided becomes
πολλά, καὶ ἀποτίκτει ἕκαστον τούτων ἀτελές, καθάπερ
many and lays each of-these incomplete just-as
καὶ οἱ ᾠοτοκοῦντες τῶν ἰχθύων. Ὁ δὲ πόρος ὁ αὐτὸς
also the egg-laying of-the fish The and duct the same
τοῦ περιττώματος καὶ τοῦ ὑστερικοῦ μορίου καὶ τοῖς
of-the residue and of-the uterine part also in-the
μαλακοστράκοις καὶ τούτοις. Ἐστὶ γὰρ ᾗ τὸν θορὸν
crustaceans and in-these It-is for where the milt
ἀφίησι διὰ τοῦ πόρου. Ταῦτα δ' ἐστὶν ἐν τοῖς ὑπτίοις
it-emits through the duct These and are in the supine
τοῦ σώματος, ᾗ τὸ κέλυφος ἀφέστηκε καὶ ἡ θάλαττα
of-the body where the mantle stands-open and the sea
εἰσέρχεται. Διὸ ὁ συνδυασμὸς κατὰ τοῦτο γίνεται τῷ
enters Wherefore the coupling at this occurs for-the
ἄρρενι πρὸς τὴν θήλειαν· ἀναγκαῖον γάρ, εἴπερ ἀφίησιν ὁ
male toward the female necessary for if-indeed emits the
ἄρρην εἴτε σπέρμα εἴτε μόριον εἴτε ἄλλην τινὰ δύναμιν,
male whether seed or part or other some power
κατὰ τὸν ὑστερικὸν πόρον πλησιάζειν. Ἡ δὲ τῆς πλεκτάνης
at the uterine duct to-approach The and of-the tentacle
τοῦ ἄρρενος διὰ τοῦ αὐλοῦ δίεσις ἐπὶ τῶν πολυπόδων,
of-the male through the funnel insertion in-the-case-of the octopuses
ᾗ φασὶν ὀχεύειν πλεκτάνῃ οἱ ἁλιεῖς, συμπλοκῆς
by-which they-say it-mounts with-the-tentacle the fishermen of-intertwining
χάριν ἐστίν, ἀλλ' οὐχ ὡς ὀργάνου χρησίμου πρὸς τὴν
for-the-sake is but not as of-organ useful for the
γένεσιν· ἔξω γάρ ἐστι τοῦ πόρου καὶ τοῦ σώματος. Ἐνίοτε
generation outside for it-is of-the duct and of-the body Sometimes

δὲ συνδυάζονται καὶ ἐπὶ τὰ πρανῆ τὰ μαλάκια· πότερον δὲ
and they-couple also on the back the cephalopods whether and
γενέσεως χάριν ἢ δι᾽ ἄλλην αἰτίαν, οὐθὲν ὤπταί πω.
of-generation for-the-sake or because-of other cause nothing has-been-seen yet

XVI · THE INSECTS

Some insects couple and are born from their own kind, as locusts, cicadas, spiders, wasps, and ants; some couple but generate only larvae, and are born from rotting moist or dry matter, as fleas, flies, and cantharids; some neither come from animals nor couple, as gnats and mosquitoes. In most that couple the female is larger, as in egg-laying fish and quadrupeds, for the bulk of the eggs; the males show no seminal ducts, and in most the female inserts a part into the male from below. Her uterine part is split beside the gut, as the locusts show. Semen comes next, then milk.

Τῶν δ᾽ ἐντόμων τὰ μὲν συνδυάζεται, καὶ ἡ γένεσις
Of-the and insects the-ones indeed couple and the generation
αὐτῶν ἐστὶν ἐκ ζῴων συνωνύμων, καθάπερ ἐπὶ τῶν
of-them is from animals of-the-same-name just-as in-the-case-of the
ἐναίμων, οἷον αἵ τε ἀκρίδες καὶ οἱ τέττιγες καὶ τὰ φαλάγγια
blooded such-as the both locusts and the cicadas and the spiders
καὶ οἱ σφῆκες καὶ οἱ μύρμηκες, τὰ δὲ συνδυάζεται μὲν
and the wasps and the ants the-others and couple indeed
καὶ γεννῶσιν, οὐχ ὁμογενῆ δ᾽ αὑτοῖς ἀλλὰ σκώληκας
and generate not same-kind but with-themselves but larvae
μόνον, οὐδὲ γίγνονται ἐκ ζῴων ἀλλ᾽ ἐκ σηπομένων
only nor come-to-be from animals but from rotting
ὑγρῶν, τὰ δὲ ξηρῶν, οἷον αἵ τε ψύλλαι καὶ αἱ μυῖαι
moist-things the-others and dry such-as the both fleas and the flies
καὶ αἱ κανθαρίδες. Τὰ δ᾽ οὔτ᾽ ἐκ ζῴων γίνονται οὔτε
and the cantharids The-others and neither from animals come-to-be nor

συνδυάζονται, καθάπερ ἐμπίδες τε καὶ κώνωπες καὶ πολλὰ
couple such-as gnats both and mosquitoes and many
τοιαῦτα γένη. Τῶν δὲ συνδυαζομένων ἐν τοῖς πλείστοις τὰ
such kinds Of-the and coupling in the most the
θήλεα μείζω τῶν ἀρρένων ἐστίν. Πόρους δὲ τὰ ἄρρενα
females larger than-the males are Ducts and the males
θορικοὺς οὐ φαίνεται ἔχοντα. Ἀφίησι δὲ ὡς ἐπὶ τὸ πλεῖστον
seminal not appear having Emits and as for the most
εἰπεῖν τὸ ἄρρεν εἰς τὸ θῆλυ οὐδὲν μόριον, ἀλλὰ τὸ θῆλυ
to-say the male into the female no part but the female
εἰς τὸ ἄρρεν κάτωθεν ἄνω. Τεθεώρηται δὲ τοῦτο ἐπὶ
into the male from-below upward It-has-been-observed and this in-the-case-of
πολλῶν, καὶ περὶ τοῦ ἀναβαίνειν ὡσαύτως, τοὐναντίον δ'
many and about the mounting likewise the-opposite but
ἐπ' ὀλίγων· ὥστε δὲ γένει διελεῖν, οὔπω συνεώραται.
in-the-case-of few so-that and by-kind to-divide not-yet it-has-been-observed
Σχεδὸν δὲ τοῦτο καὶ ἐπὶ τῶν ᾠοτόκων ἰχθύων τῶν
Nearly and this also in-the-case-of the egg-laying fish the
πλείστων ἐστί, καὶ ἐπὶ τῶν τετραπόδων καὶ ᾠοτόκων·
most is and in-the-case-of the quadrupeds and egg-laying
τὰ γὰρ θήλεα μείζω τῶν ἀρρένων ἐστὶ διὰ τὸ
the for females larger than-the males are because-of the
συμφέρον πρὸς τὸν γινόμενον αὐτοῖς ὑπὸ τῶν ᾠῶν ὄγκον
advantage toward the arising for-them from the eggs bulk
ἐν τῇ κυήσει. Τοῖς δὲ θήλεσιν αὐτῶν τὸ ταῖς ὑστέραις
in the gestation For-the and females of-them the to-the uteri
ἀνάλογον μόριον ἐσχισμένον ἐστὶ παρὰ τὸ ἔντερον, ὥσπερ
analogous part split is beside the intestine just-as
καὶ τοῖς ἄλλοις· ἐν ᾧ ἐγγίγνεται τὰ κυήματα. Δῆλον
also for-the others in which come-to-be-in the fetuses Clear
δὲ τοῦτο ἐπί τε τῶν ἀκρίδων, καὶ ὅσα μέγεθος
and this in-the-case-of both the locusts and as-many-as size

αὐτῶν ἔχει, συνδυάζεσθαι πεφυκότων· τὰ γὰρ πλεῖστα
of-them have to-couple being-natural the for most
μικρὰ λίαν τῶν ἐντόμων ἐστίν. Τὰ μὲν οὖν περὶ τὴν
small too of-the insects are The indeed then about the
γένεσιν ὄργανα τοῖς ζῴοις, περὶ ὧν οὐκ ἐλέχθη πρότερον,
generation organs for-the animals about which not was-said before
τοῦτον ἔχει τὸν τρόπον· τῶν δ' ὁμοιομερῶν ἀπελείφθη
this have the way of-the and uniform it-was-left
περὶ γονῆς καὶ γάλακτος, περὶ ὧν καιρός ἐστιν εἰπεῖν,
about semen and milk about which the-right-time is to-speak
περὶ μὲν γονῆς ἤδη, περὶ δὲ γάλακτος ἐν τοῖς ἐχομένοις.
about indeed semen now about and milk in the following

XVII · IS THE SEED FROM THE WHOLE BODY?

Blooded animals plainly emit seed; whether all males do, what the female gives, and what seed and menses are must be asked, first whether seed comes from the whole body. That claim's four proofs: the pleasure of intercourse, the mutilated born of the mutilated, likeness to parents part by part, and each part's own seed. Even scars and a father's brand in Chalcedon are inherited.

Τὰ μὲν γὰρ προΐεται φανερῶς σπέρμα τῶν ζῴων, οἷον
The-ones indeed for emit evidently seed of-the animals such-as
ὅσα αὐτῶν ἔναιμα τὴν φύσιν ἐστί, τὰ δ' ἔντομα καὶ τὰ
as-many-as of-them blooded in-the nature are the but insects and the
μαλάκια ποτέρως, ἄδηλον. Ὥστε τοῦτο θεωρητέον, πότερον
cephalopods in-which-way unclear So-that this must-be-studied whether
πάντα προΐεται σπέρμα τὰ ἄρρενα ἢ οὐ πάντα, καὶ εἰ μὴ
all emit seed the males or not all and if not
πάντα, διὰ τίν' αἰτίαν τὰ μὲν τὰ δ' οὔ· καὶ τὰ
all because-of what cause the-ones indeed the-others and not and the

θήλεα δὲ πότερον συμβάλλεται σπέρμα τι ἢ οὔ, καὶ εἰ
females and whether contribute seed some or not and if
μὴ σπέρμα, πότερον οὐδ᾽ ἄλλο οὐθέν, ἢ συμβάλλεται μέν
not seed whether not-even other anything or contribute indeed
τι, οὐ σπέρμα δέ. Ἔτι δὲ καὶ τὰ προϊέμενα σπέρμα
something not seed but Further and also the emitting seed
τί συμβάλλεται διὰ τοῦ σπέρματος πρὸς τὴν γένεσιν,
what contribute through the seed toward the generation
σκεπτέον, καὶ ὅλως τίς ἐστιν ἡ τοῦ σπέρματος φύσις
it-must-be-examined and generally what is the of-the seed nature
καὶ ἡ τῶν καλουμένων καταμηνίων, ὅσα ταύτην τὴν
and the of-the so-called menses as-many-as this the
ὑγρότητα προΐεται τῶν ζῴων. Δοκεῖ δὲ πάντα γίνεσθαι
moisture emit of-the animals It-seems and all to-come-to-be
ἐκ σπέρματος, τὸ δὲ σπέρμα ἐκ τῶν γεννώντων. Διὸ
from seed the and seed from the generating-ones Wherefore
τοῦ αὐτοῦ λόγου ἐστί, πότερον καὶ τὸ θῆλυ καὶ τὸ ἄρρεν
of-the same account it-is whether both the female and the male
προΐεται ἄμφω ἢ θάτερον μόνον, καὶ πότερον ἀπὸ παντὸς
emit both or one-of-the-two only and whether from all
ἀπέρχεται τοῦ σώματος ἢ οὐκ ἀπὸ παντός· εὔλογον γάρ,
comes-away the body or not from all reasonable for
εἰ μὴ ἀπὸ παντός, μηδ᾽ ἀπ᾽ ἀμφοτέρων τῶν γεννώντων,
if not from all not-even from both the generating-ones
διόπερ ἐπισκεπτέον, ἐπειδὴ φασί τινες ἀπὸ παντὸς
wherefore it-must-be-examined since say some from all
ἀπιέναι τοῦ σώματος, περὶ τούτου πῶς ἔχει πρῶτον.
to-come-away the body about this how it-is first
Ἔστι δὲ σχεδόν, οἷς ἄν τις χρήσαιτο τεκμηρίοις
There-are and nearly with-which — anyone would-use proofs
ὡς ἀφ᾽ ἑκάστου τῶν μορίων ἀπιόντος τοῦ σπέρματος,
that from each of-the parts coming-away the seed

τέτταρα, πρῶτον μὲν ἡ σφοδρότης τῆς ἡδονῆς· μᾶλλον
four first indeed the intensity of-the pleasure more
γὰρ ἡδὺ πλέον ταὐτὸ γινόμενον πάθος, πλέον δὲ τὸ πᾶσι
for pleasant more the-same arising affection more and the for-all
τοῖς μορίοις ἢ τὸ ἑνὶ ἢ ὀλίγοις συμβαῖνον αὐτῶν. Ἔτι
the parts than the for-one or for-few happening of-them Further
τὸ ἐκ κολοβῶν κολοβὰ γίνεσθαι· διὰ μὲν γὰρ τὸ τοῦ
the from mutilated mutilated to-come-to-be because-of indeed for the of-the
μορίου ἐνδεὲς εἶναι οὐ βαδίζειν σπέρμα ἐντεῦθέν φασιν, ὅθεν
part deficient to-be not to-go seed from-there they-say whence
δ' ἂν μὴ ἔλθῃ, τοῦτο συμβαίνειν μὴ γίνεσθαι, πρὸς δὲ
but — not it-come this to-happen not to-come-to-be in-addition-to and
τούτοις αἱ ὁμοιότητες πρὸς τοὺς γεννήσαντας· γίνονται
these the likenesses to the generators they-come-to-be
γὰρ ἐοικότες, ὥσπερ καὶ ὅλον τὸ σῶμα, καὶ μόρια μορίοις·
for resembling just-as also whole the body also parts to-parts
εἴπερ οὖν καὶ τοῦ ὅλου αἴτιον τῆς ὁμοιότητος τὸ ἀφ' ὅλου
if-indeed then also of-the whole cause of-the likeness the from whole
ἐλθεῖν τὸ σπέρμα, καὶ τοῖς μορίοις αἴτιον ἂν εἴη τὸ ἀφ'
to-come the seed also for-the parts cause — would-be the from
ἑκάστου τι τῶν μορίων ἐλθεῖν. Ἔτι δὲ καὶ εὔλογον
each something of-the parts to-come Further and also reasonable
ἂν εἶναι δόξειεν, ὥσπερ καὶ τοῦ ὅλου ἐστί τι ἐξ οὗ
— to-be would-seem just-as also of-the whole there-is something from which
γίνεται πρῶτον, οὕτω καὶ τῶν μορίων ἑκάστου, ὥστ'
it-comes-to-be first so also of-the parts each so-that
εἰ ἐκείνου σπέρμα, καὶ τῶν μορίων ἑκάστου εἴη ἄν τι
if of-that seed also of-the parts each would-be — some
σπέρμα ἴδιον, πιθανὰ δὲ καὶ τὰ τοιαῦτα μαρτύρια ταύταις
seed peculiar persuasive and also the such testimonies to-these
ταῖς δόξαις· οὐ γὰρ μόνον τὰ σύμφυτα προσεοικότες
the opinions not for only the congenital resembling

γίνονται τοῖς γονεῦσιν οἱ παῖδες, ἀλλὰ καὶ τὰ ἐπίκτητα·
become to-the parents the children but also the acquired
οὐλάς τε γὰρ ἐχόντων τῶν γεννησάντων ἤδη τινὲς ἔσχον
scars both for having the generators already some had
ἐν τοῖς αὐτοῖς τόποις τῶν ἐκγόνων τὸν τύπον τῆς οὐλῆς,
in the same places of-the offspring the mark of-the scar
καὶ στίγμα ἔχοντος ἐν τῷ βραχίονι τοῦ πατρὸς ἐπεσήμηνεν
and brand having in the arm of-the father showed
ἐν Χαλκηδόνι τῷ τέκνῳ συγκεχυμένον μέντοι καὶ οὐ
in Chalcedon on-the child confused however and not
διηρθρωμένον τὸ γράμμα. Ὅτι μὲν οὖν ἀπὸ παντὸς ἔρχεται
articulated the letter That indeed then from all comes
τὸ σπέρμα, σχεδὸν ἐκ τούτων μάλιστα πιστεύουσι τινές.
the seed nearly from these most believe some

XVIII · SEED IS NOT FROM THE WHOLE

The reverse holds. Children resemble parents in voice, nails, hair, and motion, which shed nothing, in traits not yet grown, and in remote ancestors; one seed becomes male or female; one coupling yields many young; female insects insert a part into the male. Empedocles' severed limbs could not live, the pleasure is a strong itching, and the mutilated bear sound young. Seed is no part or colliquation but a residue of the last, useful nourishment, going to every part, not from it, as exhaustion after loss, its lack in the young and old, and the fat's low fertility show.

Φαίνεται δ' ἐξετάζουσι τὸν λόγον τοὐναντίον μᾶλλον· τά
It-appears and to-those-examining the argument the-opposite rather the
τε γὰρ εἰρημένα λύειν οὐ χαλεπόν, καὶ πρὸς τούτοις
both for said to-refute not difficult and in-addition-to these
ἄλλα συμβαίνει λέγειν ἀδύνατα. Πρῶτον μὲν οὖν ὅτι
other-things it-follows to-say impossible First indeed then that

οὐθὲν σημεῖον ἡ ὁμοιότης τοῦ ἀπιέναι ἀπὸ παντός, ὅτι
no sign the likeness of-the coming-away from all because
καὶ φωνὴν καὶ ὄνυχας καὶ τρίχας ὅμοιοι γίγνονται καὶ
also voice and nails and hair like they-become and
τὴν κίνησιν, ἀφ' ὧν οὐθὲν ἀπέρχεται. Ἔνια δ' οὐκ ἔχουσί
the movement from which nothing comes-away Some and not have
πω ὅταν γεννῶσιν, οἷον τρίχωσιν πολιῶν ἢ γενείου. Ἔτι
yet when they-generate such-as growth of-gray-hair or of-beard Further
τοῖς ἄνωθεν γονεῦσιν ἐοίκασιν, ἀφ' ὧν οὐθὲν ἀπῆλθεν·
to-the remoter ancestors they-resemble from whom nothing came-away
ἀποδιδόασι γὰρ διὰ πολλῶν γενεῶν αἱ ὁμοιότητες, οἷον
give-back for through many generations the likenesses such-as
καὶ ἐν Ἤλιδι ἡ τῷ Αἰθίοπι συγγενομένη· οὐ
also in Elis the-woman with-the Ethiopian having-had-intercourse not
γὰρ ἡ θυγάτηρ ἐγένετο, ἀλλ' ὁ ἐκ ταύτης Αἰθίοψ.
for the daughter became but the-one from her Ethiopian
Καὶ ἐπὶ τῶν φυτῶν δὲ ὁ αὐτὸς λόγος· δῆλον γὰρ
And in-the-case-of the plants and the same argument clear for
ὅτι καὶ τούτοις ἀπὸ πάντων ἂν τῶν μερῶν τὸ σπέρμα
that also for-these from all — the parts the seed
γίγνοιτο. Πολλὰ δὲ τὰ μὲν οὐκ ἔχει, τὰ δὲ
would-come-to-be Many and the-ones indeed not they-have the-others and
καὶ ἀφέλοι τις ἄν, τὰ δὲ προσφύεται.
also could-take-away someone — the-others and grow-on
Ἔτι οὐδ' ἀπὸ τῶν περικαρπίων ἀπέρχεται· καίτοι καὶ
Further not-even from the seed-cases it-comes-away and-yet also
ταῦτα γίνεται τὴν αὐτὴν ἔχοντα μορφήν. Ἔτι πότερον ἀπὸ
these come-to-be the same having shape Further whether from
τῶν ὁμοιομερῶν μόνον ἀπέρχεται ἀφ' ἑκάστου, οἷον ἀπὸ
the uniform only it-comes-away from each such-as from
σαρκὸς καὶ ὀστοῦ καὶ νεύρου, ἢ καὶ ἀπὸ τῶν ἀνομοιομερῶν,
flesh and bone and sinew or also from the non-uniform

οἷον προσώπου καὶ χειρός; εἰ μὲν γὰρ ἀπ᾽ ἐκείνων μόνον,
such-as face and hand if indeed for from those only
ἐοίκασι δὲ μᾶλλον ταῦτα τοῖς γονεῦσι τὰ ἀνομοιομερῆ,
they-resemble but more these to-the parents the non-uniform
οἷον πρόσωπον καὶ χεῖρας καὶ πόδας· εἴπερ οὖν μηδὲ
such-as face and hands and feet if-indeed then not-even
ταῦτα τῷ ἀπὸ παντὸς ἀπελθεῖν, τί κωλύει μηδ᾽ ἐκεῖνα
these by-the from all to-come-away what prevents not-even those
τῷ ἀπὸ παντὸς ἀπελθεῖν ὅμοια εἶναι, ἀλλὰ δι᾽ ἄλλην
by-the from all to-come-away like to-be but because-of other
αἰτίαν; εἰ δ᾽ ἀπὸ τῶν ἀνομοιομερῶν μόνον, οὐκ ἄρα
cause if but from the non-uniform only not then
ἀπὸ πάντων. Προσήκει δὲ μᾶλλον ἀπ᾽ ἐκείνων· πρότερα
from all It-befits and more from those prior
γὰρ ἐκεῖνα, καὶ σύγκειται τὰ ἀνομοιομερῆ ἐξ ἐκείνων,
for those and are-composed the non-uniform from those
καὶ ὥσπερ πρόσωπον καὶ χεῖρας γίγνονται ἐοικότες,
and just-as face and hands they-become resembling
οὕτω καὶ σάρκας καὶ ὄνυχας. Εἰ δ᾽ ἀπ᾽ ἀμφοτέρων, τίς
so also flesh and nails If but from both what
ὁ τρόπος ἂν εἴη τῆς γενέσεως; σύγκειται γὰρ ἐκ
the manner — would-be of-the generation are-composed for from
τῶν ὁμοιομερῶν τὰ ἀνομοιομερῆ, ὥστε τὸ ἀπὸ τούτων
the uniform the non-uniform so-that the from these
ἀπιέναι τὸ ἀπ᾽ ἐκείνων ἂν εἴη ἀπιέναι καὶ τῆς
to-come-away the from those — would-be to-come-away and of-the
συνθέσεως, ὥσπερ κἂν εἰ ἀπὸ τοῦ γεγραμμένου ὀνόματος·
composition just-as even if from the written name
εἰ μὲν ἀπὸ παντός, κἂν ἀπὸ τῶν συλλαβῶν ἑκάστης, εἰ
if indeed from all even from the syllables each if
δ᾽ ἀπὸ τούτων, ἀπὸ τῶν στοιχείων καὶ τῆς συνθέσεως.
but from these from the letters and the composition

Ὥστ᾽ εἴπερ ἐκ πυρὸς καὶ τῶν τοιούτων σάρκες καὶ ὀστᾶ
So-that if-indeed from fire and the such flesh and bones
συνεστᾶσιν, ἀπὸ τῶν στοιχείων ἂν εἴη μᾶλλον· ἀπὸ
are-constituted from the elements — it-would-be rather from
γὰρ τῆς συνθέσεως πῶς ἐνδέχεται; Ἀλλὰ μὴν ἄνευ γε
for the composition how is-it-possible But truly without at-least
ταύτης οὐκ ἂν εἴη ὅμοια. Ταύτην δ᾽ εἴ τι δημιουργεῖ
this not — would-be like This but if something fashions
ὕστερον, τοῦτ᾽ ἂν εἴη τὸ τῆς ὁμοιότητος αἴτιον, ἀλλ᾽
later this — would-be the of-the likeness cause but
οὐ τὸ ἀπελθεῖν ἀπὸ παντός. Ἔτι εἰ μὲν διεσπασμένα τὰ
not the to-come-away from all Further if indeed torn-apart the
μέρη ἐν τῷ σπέρματι, πῶς ζῇ; εἰ δὲ συνεχῆ, ζῷον ἂν
parts in the seed how does-it-live if but continuous animal —
εἴη μικρόν. Καὶ τὰ τῶν αἰδοίων πῶς; Οὐ γὰρ ὅμοιον
it-would-be small And the of-the genitals how Not for like
τὸ ἀπιὸν ἀπὸ τοῦ ἄρρενος καὶ τοῦ θήλεος. Ἔτι εἰ
the coming-away from the male and the female Further if
ἀμφοτέρων ὁμοίως ἀπὸ πάντων ἀπέρχεται, δύο γίγνεται
from-both likewise from all it-comes-away two become
ζῷα· ἑκατέρων γὰρ ἅπαντα ἕξει. Διὸ καὶ Ἐμπεδοκλῆς
animals of-each for all will-have Wherefore also Empedocles
ἔοικεν, εἴπερ οὕτω λεκτέον, μάλιστα λέγειν ὁμολογούμενα
seems if-indeed so must-be-said most to-say consistent-things
τούτῳ τῷ λόγῳ, τό γε τοσοῦτον, ἀλλ᾽ εἴπερ ἑτέρᾳ
with-this the argument the at-least so-much but if-indeed in-other
πῃ, οὐ καλῶς. Φησὶ γὰρ ἐν τῷ ἄρρενι καὶ τῷ θήλει
some-way not well He-says for in the male and the female
οἷον σύμβολον ἐνεῖναι, ὅλον δ᾽ ἀπ᾽ οὐδετέρου ἀπιέναι,
as-it-were tally to-be-in whole but from neither to-come-away

ἀλλὰ διέσπασται μελέων φύσις, ἡ μὲν ἐν ἀνδρός.
but has-been-torn-apart of-limbs nature the-one indeed in of-man

Διὰ τί γὰρ τὰ θήλεα οὐ γεννᾷ ἐξ αὑτῶν, εἴπερ ἀπὸ
Because-of what for the females not generate from themselves if-indeed from
παντός τε ἀπέρχεται καὶ ἔχει ὑποδοχήν; ἀλλ' ὡς ἔοικεν
all both it-comes-away and they-have receptacle but as it-seems
ἢ οὐκ ἀπέρχεται ἀπὸ παντός, ἢ οὕτως ὥσπερ ἐκεῖνος
either not it-comes-away from all or so just-as that-man
λέγει, οὐ ταὐτὰ ἀφ' ἑκατέρου, διὸ καὶ δέονται τῆς
says not the-same-things from each wherefore also they-need the
ἀλλήλων συνουσίας. Ἀλλὰ καὶ τοῦτ' ἀδύνατον. Ὥσπερ γὰρ
of-one-another intercourse But also this impossible Just-as for
καὶ μεγάλα ὄντ' ἀδύνατον διεσπασμένα σώζεσθαι καὶ ἔμψυχα
also large being impossible torn-apart to-be-preserved and ensouled
εἶναι, καθάπερ Ἐμπεδοκλῆς γεννᾷ, ἐπὶ τῆς φιλότητος λέγων
to-be just-as Empedocles generates under the love saying

ᾗ πολλαὶ μὲν κόρσαι ἀναύχενες, ἐβλάστησαν.
where many indeed heads neckless sprouted

Εἶθ' οὕτως συμφύεσθαί φησιν. Τοῦτο δὲ φανερὸν ὅτι
Then so to-grow-together he-says This but evident that
ἀδύνατον· οὔτε γὰρ μὴ ψυχὴν ἔχοντα οὔτε μὴ ζωήν
impossible neither for not soul having nor not life
τινα δύναιτ' ἂν σώζεσθαι, οὔτε ὥσπερ ζῷα ὄντα πλείω
some could — to-be-preserved nor just-as animals being many
συμφύεσθαι ὥστ' εἶναι πάλιν ἕν. Ἀλλὰ μὴν τοῦτον τὸν
to-grow-together so-that to-be again one But truly this the
τρόπον συμβαίνει λέγειν τοῖς ἀπὸ παντὸς ἀπιέναι
way it-follows to-say for-those from all to-come-away

φάσκουσιν, ὥσπερ τότε ἐν τῇ γῇ ἐπὶ τῆς φιλότητος,
asserting just-as then in the earth under the love
οὕτω τούτοις ἐν τῷ σώματι. Ἀδύνατον γὰρ συνεχῆ τὰ
so for-these in the body Impossible for continuous the
μόρια γίγνεσθαι, καὶ ἀπιέναι εἰς ἕνα τόπον συνιόντα.
parts to-come-to-be and to-come-away into one place coming-together
Εἶτα πῶς καὶ διέσπασται τὰ ἄνω καὶ κάτω καὶ δεξιὰ
Then how also have-been-torn-apart the upper and lower and right
καὶ ἀριστερὰ καὶ πρόσθια καὶ ὀπίσθια; πάντα γὰρ ταῦτα
and left and front and back all for these
ἄλογά ἐστιν. Ἔτι τὰ μέρη τὰ μὲν δυνάμει τὰ
irrational are Further the parts the-ones indeed by-power the-others
δὲ πάθεσι διώρισται, τὰ μὲν ἀνομοιομερῆ τῷ δύνασθαί
and by-affections are-distinguished the indeed non-uniform by-the being-able
τι ποιεῖν, οἷον γλῶττα καὶ χείρ, τὰ δ' ὁμοιομερῆ
something to-do such-as tongue and hand the but uniform
σκληρότητι καὶ μαλακότητι καὶ τοῖς ἄλλοις τοῖς τοιούτοις
by-hardness and softness and the other the such
πάθεσιν. Οὐ πάντως οὖν ἔχον αἷμα οὐδὲ σάρξ. Δῆλον
affections Not in-any-way-whatever then being blood nor flesh Clear
τοίνυν ὅτι ἀδύνατον τὸ ἀπελθὸν εἶναι συνώνυμον τοῖς
then that impossible the having-come-away to-be same-named with-the
μέρεσιν, οἷον αἷμα ἀπὸ αἵματος ἢ σάρκα ἀπὸ σαρκός.
parts such-as blood from blood or flesh from flesh
Ἀλλὰ μὴν εἴ γ' ἐξ ἑτέρου τινὸς ὄντος αἷμα γίνεται,
But truly if at-least from other something being blood comes-to-be
οὐδ' ἂν τῆς ὁμοιότητος αἴτιον εἴη, ὡς λέγουσιν οἱ
not-even — of-the likeness cause it-would-be as say those
φάσκοντες οὕτω, τὸ ἀπελθεῖν ἀπὸ πάντων τῶν μορίων.
asserting so the to-come-away from all the parts
Ἱκανὸν γὰρ ἀφ' ἑνὸς ἀπιέναι μόνον, εἴπερ μὴ ἐξ αἵματος
Sufficient for from one to-come-away only if-indeed not from blood

αἷμα γίγνεται. Διὰ τί γὰρ οὐκ ἂν καὶ ἅπαντα ἐξ
blood comes-to-be Because-of what for not — also all from
ἑνὸς γίγνοιτο; Ὁ αὐτὸς γὰρ λόγος ἔοικεν εἶναι οὗτος
one would-come-to-be The same for argument seems to-be this
τῷ Ἀναξαγόρου, τῷ μηθὲν γίγνεσθαι τῶν ὁμοιομερῶν·
to-the of-Anaxagoras the nothing to-come-to-be of-the uniform
πλὴν ἐκεῖνος μὲν ἐπὶ πάντων, οὗτοι δ' ἐπὶ
except that-man indeed in-the-case-of all these but in-the-case-of
τῆς γενέσεως τῶν ζῴων τοῦτο ποιοῦσιν. Ἔπειτα τίνα
the generation of-the animals this they-do Then in-what
τρόπον αὐξηθήσεται ταῦτα τὰ ἀπελθόντα ἀπὸ παντός;
way will-be-increased these the having-come-away from all
Ἀναξαγόρας μὲν γὰρ εὐλόγως φησὶ σάρκας ἐκ τῆς
Anaxagoras indeed for reasonably says flesh from the
τροφῆς προσιέναι ταῖς σαρξίν· τοῖς δὲ ταῦτα μὲν μὴ
nourishment to-come-to to-the flesh for-those but these indeed not
λέγουσιν, ἀπὸ παντὸς δ' ἀπιέναι φάσκουσι πῶς ἑτέρου
saying from all but to-come-away asserting how other
προσγιγνομένου ἔσται μεῖζον, εἰ μένει τὸ προσελθόν;
being-added will-it-be greater if remains the having-come-to
Ἀλλὰ μὴν εἴ γε δύναται μεταβάλλειν τὸ προσελθόν,
But truly if at-least can to-change the having-come-to
διὰ τί οὐκ εὐθὺς ἐξ ἀρχῆς τὸ σπέρμα τοιοῦτόν ἐστιν
because-of what not at-once from beginning the seed such is
ὥστ' ἐξ αὐτοῦ δυνατὸν εἶναι γίνεσθαι αἷμα καὶ σάρκας,
so-that from it possible to-be to-come-to-be blood and flesh
ἀλλὰ μὴ αὐτὸ εἶναι ἐκεῖνο καὶ αἷμα καὶ σάρκας;
but not itself to-be that both blood and flesh
οὐ γὰρ δὴ οὐδὲ τοῦτο ἐνδέχεται λέγειν, ὡς τῇ κατακεράσει
not for indeed even this is-possible to-say that by-the mixing
αὐξάνεται ὕστερον οἷον οἶνος ὕδατος προσεγχυθέντος.
it-increases later as wine with-water having-been-poured-in

Αὐτὸ γὰρ ἂν πρῶτον μάλιστα ἦν ἕκαστον ἄκρατον
Itself for — first most would-be each unmixed
ὄν· νῦν δὲ ὕστερον μᾶλλον καὶ σὰρξ καὶ ὀστοῦν καὶ τῶν
being now but later rather both flesh and bone and of-the
ἄλλων ἕκαστόν ἐστι μορίων. Τοῦ δὲ σπέρματος φάναι
others each is of-parts Of-the and seed to-say
τι νεῦρον εἶναι καὶ ὀστοῦν λίαν ἐστὶν ὑπὲρ ἡμᾶς τὸ
something sinew to-be and bone very is beyond us the
λεγόμενον. Πρὸς δὲ τούτοις εἰ τὸ θῆλυ καὶ τὸ ἄρρεν
said In-addition-to and these if the female and the male
ἐν τῇ κυήσει διαφέρει, καθάπερ Ἐμπεδοκλῆς λέγει
in the gestation differs just-as Empedocles says

ἐν δ' ἐχύθη καθαροῖσι· τὰ μὲν τελέθουσι γυναῖκες,
in and was-poured into-pure-places the-ones indeed become women
ψύχεος ἀντιάσαντα.
of-cold having-met

Φαίνονται δ' οὖν μεταβάλλουσαι γυναῖκες καὶ ἄνδρες,
Appear but at-any-rate changing women and men
ὥσπερ ἐξ ἀγόνων γόνιμοι, οὕτω καὶ ἐκ θηλυτόκων
just-as from infertile fertile so also from female-bearing
ἀρρενοτόκοι, ὡς οὐκ ἐν τῷ ἀπελθεῖν ἀπὸ παντὸς ἢ μὴ τῆς
male-bearing as not in the to-come-away from all or not the
αἰτίας οὔσης, ἀλλ' ἐν τῷ σύμμετρον ἢ ἀσύμμετρον εἶναι
cause being but in the proportionate or disproportionate to-be
τὸ ἀπὸ τῆς γυναικὸς καὶ τοῦ ἀνδρὸς ἀπιόν, ἢ καὶ δι'
the from the woman and the man coming-away or also because-of
ἄλλην τινὰ τοιαύτην αἰτίαν. Δῆλον τοίνυν, εἰ τοῦτο θήσομεν
other some such cause Clear then if this we-shall-posit
οὕτως, ὅτι οὐ τῷ ἀπελθεῖν ἀπό τινος τὸ θῆλυ, ὥστ' οὐδὲ
so that not by-the to-come-away from something the female so-that not-even

τὸ μέρος ὃ ἔχει ἴδιον τό τε ἄρρεν καὶ τὸ θῆλυ, εἴπερ
the part which it-has peculiar the both male and the female if-indeed
τὸ αὐτὸ σπέρμα καὶ θῆλυ καὶ ἄρρεν δύναται γίγνεσθαι ὡς
the same seed both female and male can to-become as
οὐκ ὄντος τοῦ μορίου ἐν τῷ σπέρματι. Τί οὖν διαφέρει
not being the part in the seed What then differs
ἐπὶ τούτου λέγειν ἢ ἐπὶ τῶν ἄλλων μορίων; εἰ
in-the-case-of this to-say or in-the-case-of the other parts if
γὰρ μηδ' ἀπὸ τῆς ὑστέρας σπέρμα γίνεται, ὁ αὐτὸς λόγος
for not-even from the uterus seed comes-to-be the same argument
καὶ ἐπὶ τῶν ἄλλων ἂν εἴη μορίων. Ἔτι ἔνια γίνεται
also in-the-case-of the others — would-be parts Further some come-to-be
τῶν ζῴων οὔτ' ἐξ ὁμογενῶν οὔτε τῷ γένει διαφόρων,
of-the animals neither from same-kind nor in-the kind different
οἷον αἱ μυῖαι καὶ τὰ γένη τῶν καλουμένων ψυχῶν.
such-as the flies and the kinds of-the so-called butterflies
Ἐκ δὲ τούτων γίνεται μὲν ζῷα, οὐκέτι δ' ὅμοια τὴν
From and these come-to-be indeed animals no-longer but like the
φύσιν, ἀλλὰ γένος τι σκωλήκων. Δῆλον οὖν ὅτι οὐκ ἀπὸ
nature but kind some of-larvae Clear then that not from
παντὸς μέρους ἀπιόντος γίγνονται ὅσα ἑτερογενῆ· ὅμοια
every part coming-away come-to-be as-many-as other-kind like
γὰρ ἂν ἦν, εἴπερ τοῦ ἀπὸ παντὸς ἀπιέναι σημεῖόν
for — they-would-be if-indeed of-the from all to-come-away sign
ἐστιν ἡ ὁμοιότης. Ἔτι ἀπὸ μιᾶς συνουσίας καὶ τῶν ζῴων
is the likeness Further from one intercourse also of-the animals
ἔνια γεννᾷ πολλά, τὰ δὲ φυτὰ καὶ παντάπασιν· δῆλον γὰρ
some generate many the and plants even altogether clear for
ὅτι ἀπὸ μιᾶς κινήσεως τὸν ἐπέτειον πάντα φέρει καρπόν.
that from one motion the yearly all they-bear fruit
Καίτοι πῶς δυνατόν, εἰ ἀπὸ παντὸς ἀπεκρίνετο τὸ σπέρμα;
And-yet how possible if from all was-secreted the seed

μίαν γὰρ ἀπόκρισιν ἀπὸ μιᾶς ἀναγκαῖον γίνεσθαι συνουσίας
one for secretion from one necessary to-come-about intercourse
καὶ μιᾶς διακρίσεως. Ἐν δὲ ταῖς ὑστέραις χωρίζεσθαι
and one separating In and the uteri to-be-separated
ἀδύνατον· ἤδη γὰρ ὥσπερ ἀπὸ νέου φυτοῦ ἢ ζῴου, οὐ
impossible already for as-it-were from young plant or animal not
σπέρματος εἴη ἡ διαχώρισις. Ἔτι τὰ ἀποφυτευόμενα ἀπ᾽
of-seed would-be the division Further the cuttings from
αὐτοῦ φέρει σπέρμα· δῆλον οὖν ὅτι καὶ πρὶν ἀποφυτευθῆναι
it bear seed clear then that also before to-be-cut-off
ἀπὸ τοῦ αὐτοῦ μεγέθους ἔφερε τὸν καρπόν, καὶ οὐκ ἀπὸ
from the same size it-bore the fruit and not from
παντὸς τοῦ φυτοῦ ἀπῄει τὸ σπέρμα. Μέγιστον δὲ τούτων
all the plant came-away the seed Greatest and of-these
τεκμήριον τεθεωρήκαμεν ἱκανῶς ἐπὶ τῶν ἐντόμων.
proof we-have-observed sufficiently in-the-case-of the insects
Καὶ γὰρ εἰ μὴ ἐν πᾶσιν, ἀλλ᾽ ἐπὶ τῶν πλείστων ἐν
And for if not in all but in-the-case-of the most in
τῇ ὀχείᾳ τὸ θῆλυ εἰς τὸ ἄρρεν μέρος τι αὑτοῦ ἀποτείνει.
the copulation the female into the male part some of-itself extends
Διὸ καὶ τὴν ὀχείαν, καθάπερ εἴπομεν πρότερον, οὕτω
Wherefore also the copulation just-as we-said before so
ποιοῦνται· τὰ γὰρ κάτωθεν εἰς τὰ ἄνω φαίνεται
they-make the for from-below into the upper-parts appear
ἐναφιέντα, οὐκ ἐν πᾶσιν, ἀλλ᾽ ἐν τοῖς πλείστοις τῶν
inserting not in all but in the most of-the
τεθεωρημένων. Ὥστε φανερὸν ἂν εἴη ὅτι οὐδ᾽ ὅσα
observed So-that evident — would-be that even as-many-as
προΐεται γονὴν τῶν ἀρρένων, οὐ τὸ ἀπὸ παντὸς ἀπιέναι
emit semen of-the males not the from all to-come-away
τῆς γενέσεως αἴτιόν ἐστιν, ἀλλ᾽ ἄλλον τινὰ τρόπον,
of-the generation cause is but other some way

περὶ οὗ σκεπτέον ὕστερον. Καὶ γὰρ εἴπερ τὸ ἀπὸ
about which it-must-be-examined later And for if-indeed the from
παντὸς ἀπιέναι συνέβαινεν, ὥσπερ φασίν, οὐθὲν ἔδει
all to-come-away happened just-as they-say nothing was-needful
ἀπὸ πάντων ἀξιοῦν ἀπιέναι, ἀλλὰ μόνον ἀπὸ τοῦ
from all to-claim to-come-away but only from the
δημιουργοῦντος, οἷον ἀπὸ τοῦ τέκτονος ἀλλὰ μὴ ἀπὸ τῆς
fashioning such-as from the carpenter but not from the
ὕλης. Νῦν δ' ὅμοιον λέγουσιν ὥσπερ κἂν εἰ ἀπὸ τῶν
material Now but alike they-speak just-as even if from the
ὑποδημάτων· σχεδὸν γὰρ ὅμοιός τις υἱὸς τῷ πατρὶ ὅμοια
shoes nearly for like some son to-the father like-things
φορεῖ. Ὅτι δ' ἡδονὴ σφοδρὰ γίνεται ἐν τῇ ὁμιλίᾳ τῇ τῶν
wears That but pleasure intense comes-about in the intercourse the of-the
ἀφροδισίων, οὐ τὸ ἀπὸ παντὸς ἀπιέναι αἴτιον, ἀλλ' ὅτι
sex not the from all to-come-away cause but because
κνησμός ἐστιν ἰσχυρός· διὸ καὶ εἰ πολλάκις συμβαίνει ἡ
itching is strong wherefore also if often happens the
ὁμιλία αὕτη, ἧττον γίνεται τὸ χαίρειν τοῖς πλησιάζουσιν.
intercourse this less comes-about the enjoying for-those consorting
Ἔτι πρὸς τῷ τέλει ἡ χαρά· ἔδει δὲ ἐν ἑκάστῳ
Further at the end the joy it-was-needful but in each
τῶν μορίων, καὶ μὴ ἅμα, ἀλλ' ἐν μὲν τοῖς πρότερον ἐν
of-the parts and not at-once but in indeed the earlier in
δὲ τοῖς ὕστερον. Τοῦ δ' ἐκ κολοβῶν γίνεσθαι κολοβὰ
but the later Of-the and from mutilated to-come-to-be mutilated
ἡ αὐτὴ αἰτία καὶ διὰ τί ὅμοια τοῖς γονεῦσιν. Γίνεται
the same cause and because-of what like to-the parents Come-to-be
δὲ καὶ οὐ κολοβὰ ἐκ κολοβῶν, ὥσπερ καὶ ἀνόμοια τοῖς
and also not mutilated from mutilated just-as also unlike to-the
τεκνώσασιν· περὶ ὧν ὕστερον τὴν αἰτίαν θεωρητέον· τὸ
begetters about which later the cause must-be-studied the

γὰρ πρόβλημα τοῦτ᾽ ἐκείνοις ταὐτόν ἐστιν. Ἔτι εἰ τὸ
for problem this to-those the-same is Further if the
θῆλυ μὴ προΐεται σπέρμα, τοῦ αὐτοῦ λόγου μηδ᾽ ἀπὸ
female not emits seed of-the same argument not-even from
παντὸς ἀπιέναι. Κἂν εἰ μὴ ἀπὸ παντὸς ἀπέρχεται, οὐθὲν
all to-come-away And-even if not from all it-comes-away nothing
ἄλογον τὸ μηδ᾽ ἀπὸ τοῦ θήλεος, ἀλλ᾽ ἄλλον τινὰ τρόπον
irrational the not-even from the female but other some way
αἴτιον εἶναι τὸ θῆλυ τῆς γενέσεως. Περὶ οὗ δὴ ἐχόμενόν
cause to-be the female of-the generation About which indeed next
ἐστιν ἐπισκέψασθαι, ἐπειδὴ φανερὸν ὅτι οὐκ ἀπὸ πάντων
it-is to-examine since evident that not from all
ἀποκρίνεται τὸ σπέρμα τῶν μορίων. Ἀρχὴ δὲ καὶ ταύτης
is-secreted the seed the parts Beginning and both of-this
τῆς σκέψεως καὶ τῶν ἑπομένων πρῶτον λαβεῖν περὶ
the examination and of-the following first to-grasp about
σπέρματος τί ἐστιν· οὕτω γὰρ καὶ περὶ τῶν ἔργων αὐτοῦ
seed what it-is so for also about the works of-it
καὶ τῶν περὶ αὐτὸ συμβαινόντων ἔσται μᾶλλον εὐθεώρητον.
and the about it happenings it-will-be more easy-to-observe
Βούλεται δὲ τοιοῦτον τὴν φύσιν εἶναι τὸ σπέρμα, ἐξ οὗ
Wishes and such the nature to-be the seed from which
τὰ κατὰ φύσιν συνιστάμενα γίνεται πρώτου, οὐ τῷ
the according-to nature constituted come-to-be first not by-the
ἐξ ἐκείνου τι εἶναι τὸ ποιοῦν, οἷον τοῦ ἀνθρώπου·
from that something to-be the maker such-as of-the man
γίγνεται γὰρ ἐκ τούτου, ὅτι τοῦτό ἐστι τὸ σπέρμα.
comes-to-be for from this because this is the seed
Ἐπεὶ δὲ πολλαχῶς γίγνεται ἄλλο ἐξ ἄλλου· ἕτερον γὰρ
Since and in-many-ways comes-to-be other from other other for
τρόπον, ὡς ἐξ ἡμέρας φαμὲν νὺξ γίγνεται καὶ ἐκ παιδὸς
way as from day we-say night comes-to-be and from boy

ἀνήρ, ὅτι τόδε μετὰ τόδε ἄλλον δὲ τρόπον, ὡς ἐκ
man because this after this other and way as from
χαλκοῦ ἀνδριὰς καὶ ἐκ ξύλου κλίνη, καὶ τἆλλα ὅσα
bronze statue and from wood bed and the-other as-many-as
ὡς ἐξ ὕλης γίγνεσθαι τὰ γιγνόμενα λέγομεν, ἔκ τινος
as from material to-come-to-be the coming-to-be we-say from something
ἐνυπάρχοντος καὶ σχηματισθέντος τὸ ὅλον ἐστίν. Ἕτερον
being-present-in and shaped the whole is Other
δὲ τρόπον ὡς ἐκ μουσικοῦ ἄμουσος καὶ ὡς ἐξ ὑγιοῦς
and way as from musical unmusical and as from healthy
κάμνων, καὶ ὅλως ὡς τὸ ἐναντίον ἐκ τοῦ ἐναντίου. Ἔτι
sick and generally as the opposite from the opposite Further
δὲ παρὰ ταῦτα, ὡς Ἐπίχαρμος ποιεῖ τὴν ἐποικοδόμησιν,
and beside these as Epicharmus makes the climax
ἐκ τῆς διαβολῆς ἡ λοιδορία, ἐκ δὲ ταύτης ἡ μάχη,
from the slander the abuse from and this the fight
ταῦτα δὲ πάντα ἔκ τινος ἡ ἀρχὴ τῆς κινήσεως.
these and all from something the principle of-the motion
Τῶν δὲ τοιούτων ἐνίων μὲν ἐν αὐτοῖς ἡ ἀρχὴ τῆς
Of-the and such of-some indeed in themselves the principle of-the
κινήσεώς ἐστιν, οἷον καὶ ἐν τοῖς νῦν εἰρημένοις (μέρος
motion is such-as also in the now said part
γάρ τι ἡ διαβολὴ τῆς πάσης ταραχῆς ἐστίν), ἐνίων δ'
for some the slander of-the whole disturbance is of-some but
ἔξω, οἷον αἱ τέχναι τῶν δημιουργουμένων καὶ ὁ λύχνος
outside such-as the arts of-the crafted-things and the lamp
τῆς καιομένης οἰκίας. Τὸ δὲ σπέρμα φανερὸν ὅτι δυοῖν
of-the burning house The and seed evident that of-two
τούτοιν ἐν θατέρῳ ἐστίν· ἢ γὰρ ὡς ἐξ ὕλης αὐτοῦ ἢ
these in one-of-the-two is either for as from matter of-it or
ὡς ἐκ πρώτου κινήσαντός ἐστι τὸ γινόμενον. Οὐ γὰρ δὴ
as from first mover is the coming-to-be Not for indeed

ὡς τόδε μετὰ τόδε, οἷον ἐκ τῶν Παναθηναίων ὁ πλοῦς,
as this after this such-as from the Panathenaea the voyage
οὐδ' ὡς ἐξ ἐναντίου· φθειρομένου τε γὰρ γίγνεται τὸ
nor as from opposite being-destroyed both for comes-to-be the
ἐναντίον ἐκ τοῦ ἐναντίου, καὶ ἕτερόν τι δεῖ ὑποκεῖσθαι
opposite from the opposite and other something must to-underlie
ἐξ οὗ ἔσται πρώτου ἐνυπάρχοντος. Τοῖν δυοῖν δὴ
from which it-will-be first being-present-in Of-the two indeed
ληπτέον ἐν ποτέρῳ θετέον τὸ σπέρμα, πότερον
it-must-be-grasped in which-of-the-two it-must-be-placed the seed whether
ὡς ὕλην καὶ πάσχον ἢ ὡς εἶδός τι καὶ ποιοῦν, ἢ καὶ
as matter and being-acted-on or as form some and acting or also
ἄμφω ἅμα γὰρ ἴσως δῆλον ἔσται καὶ πῶς ἐξ ἐναντίων
both at-once for perhaps clear it-will-be also how from opposites
γένεσις ὑπάρχει πᾶσι τοῖς ἐκ τοῦ σπέρματος· φυσικὴ
generation belongs to-all the from the seed natural
γὰρ καὶ ἡ ἐκ τῶν ἐναντίων γένεσις· τὰ μὲν γὰρ ἐξ
for also the from the opposites generation the indeed for from
ἐναντίων γίγνεται, ἄρρενος καὶ θήλεος, τὰ δ' ἐξ ἑνὸς
opposites come-to-be male and female the-others and from one
μόνου, οἷον τά τε φυτὰ καὶ τῶν ζῴων ἔνια, ἐν ὅσοις
only such-as the both plants and of-the animals some in as-many-as
μή ἐστι διωρισμένον τὸ ἄρρεν καὶ τὸ θῆλυ χωρίς.
not is distinguished the male and the female separately
Γονὴ μὲν οὖν τὸ ἀπὸ τοῦ γεννῶντος καλεῖται αἴτιον,
Semen indeed then the from the generator is-called cause
ὅσα συνδυάζεσθαι πέφυκε, τὸ πρῶτον ἔχον ἀρχὴν
as-many-as to-couple are-natural the first having principle
γενέσεως, σπέρμα δὲ τὸ ἐξ ἀμφοτέρων τὰς ἀρχὰς ἔχον
of-generation seed and the from both the principles having
τῶν συνδυασθέντων, οἷον τά τε τῶν φυτῶν καὶ ἐνίων
of-the coupled such-as the both of-the plants and of-some

ζῴων, ἐν οἷς μὴ κεχώρισται τὸ θῆλυ καὶ τὸ ἄρρεν, ὥσπερ
animals in which not has-been-separated the female and the male just-as
τὸ γιγνόμενον ἐκ θήλεος καὶ ἄρρενος πρῶτον μῖγμα οἷον
the coming-to-be from female and male first mixture such-as
κύημά τι ὂν ἢ ζῷον· καὶ γὰρ ταῦτα ἤδη ἔχει τὸ ἐξ
fetus some being or animal and for these already have the from
ἀμφοῖν. Σπέρμα δὲ καὶ καρπὸς διαφέρει τῷ ὕστερον καὶ
both Seed and and fruit differ by-the later and
πρότερον· καρπὸς μὲν γὰρ τῷ ἐξ ἄλλου εἶναι, σπέρμα δὲ
earlier fruit indeed for by-the from other to-be seed and
τῷ ἐκ τούτου ἄλλο, ἐπεὶ ἄμφω γε ταὐτόν ἐστιν. Ἡ δὲ
by-the from this other since both at-least the-same is The but
τοῦ λεγομένου σπέρματος φύσις, ἡ πρώτη, πάλιν λεκτέα
of-the so-called seed nature the first again must-be-told
τίς ἐστιν, ἀνάγκη δὴ πᾶν, ὃ ἂν λαμβάνωμεν ἐν τῷ
what it-is necessary indeed everything which — we-take in the
σώματι, ἢ μέρος εἶναι τῶν κατὰ φύσιν, καὶ τοῦτο
body either part to-be of-the according-to nature and this
ἢ τῶν ἀνομοιομερῶν ἢ τῶν ὁμοιομερῶν, ἢ τῶν παρὰ
either of-the non-uniform or of-the uniform or of-the contrary-to
φύσιν, οἷον φῦμα, ἢ περίττωμα ἢ σύντηγμα ἢ τροφήν.
nature such-as tumor or residue or colliquation or nourishment
Λέγω δὲ περίττωμα μὲν τὸ τῆς τροφῆς ὑπόλειμμα,
I-call and residue indeed the of-the nourishment remnant
σύντηγμα δὲ τὸ ἀποκριθὲν ἐκ τοῦ αὐξήματος ὑπὸ τῆς
colliquation and the secreted from the growth by the
παρὰ φύσιν ἀναλύσεως. Ὅτι μὲν οὖν οὐκ ἂν εἴη
contrary-to nature dissolution That indeed then not — it-would-be
μέρος, φανερόν. Ὁμοιομερὲς μὲν γάρ ἐστιν, ἐκ δὲ τούτου
part evident Uniform indeed for it-is from and this
οὐθὲν σύγκειται, ὥσπερ ἐκ νεύρου καὶ σαρκός. Ἔτι
nothing is-composed just-as from sinew and flesh Further

δὲ οὐδὲ κεχωρισμένον, τὰ δ᾽ ἄλλα πάντα μέρη. Ἀλλὰ
and not-even separated the but other all parts But
μὴν οὐδὲ παρὰ φύσιν, οὐδὲ πήρωμα· ἐν ἅπασί τε
truly not-even contrary-to nature nor deformity in all both
γὰρ ὑπάρχει, καὶ ἡ φύσις ἐκ τούτου γίγνεται. Ἡ δὲ
for it-belongs and the nature from this comes-to-be The and
τροφὴ φανερῶς ἐπείσακτον, ὥστ᾽ ἀνάγκη ἢ σύντηγμα
nourishment evidently imported so-that necessary either colliquation
ἢ περίττωμα εἶναι. Οἱ μὲν οὖν ἀρχαῖοι ἐοίκασιν οἰομένοις
or residue to-be The indeed then ancients seem thinking
εἶναι σύντηγμα· τὸ γὰρ ἀπὸ παντὸς ἀπιέναι φάναι
to-be colliquation the for from all to-come-away to-say
διὰ τὴν θερμότητα τὴν ἀπὸ τῆς κινήσεως συντήγματος
because-of the heat the from the motion of-colliquation
ἔχει δύναμιν. Τὰ δὲ συντήγματα τῶν παρὰ φύσιν τι,
has power The but colliquations of-the contrary-to nature something
ἐκ δὲ τῶν παρὰ φύσιν οὐθὲν γίνεται τῶν κατὰ
from and the contrary-to nature nothing comes-to-be of-the according-to
φύσιν. Ἀνάγκη ἄρα περίττωμα εἶναι. Ἀλλὰ μὴν περίττωμά
nature Necessary then residue to-be But truly residue
γε πᾶν ἢ ἀχρήστου τροφῆς ἐστὶν ἢ χρησίμης.
at-least every either of-useless nourishment is or of-useful
Ἄχρηστον μὲν οὖν λέγω ἀφ᾽ ἧς μηθὲν ἔτι συντελεῖται εἰς
Useless indeed then I-call from which nothing further is-contributed to
τὴν φύσιν, ἀλλ᾽ ἀναλισκομένου πλέονος μάλιστα κακοῦται,
the nature but being-consumed more most is-harmed
τὴν δὲ χρησίμην τὴν ἐναντίαν. Ὅτι μὲν δὴ τοιοῦτον
the and useful the opposite That indeed indeed such
περίττωμα οὐκ ἂν εἴη, φανερόν· τοῖς γὰρ κάκιστα
residue not — it-would-be evident for-the for worst
διακειμένοις δι᾽ ἡλικίαν ἢ νόσον πλεῖστον ὑπάρχει
disposed because-of age or disease most belongs

τοιοῦτον, σπέρμα δὲ ἥκιστα· ἢ γὰρ ὅλως οὐκ ἔχουσιν ἢ
such seed and least either for at-all not they-have or
οὐ γόνιμον διὰ τὸ μίγνυσθαι ἄχρηστον περίττωμα καὶ
not fertile because-of the to-be-mixed useless residue and
νοσηματικόν. Χρησίμου ἄρα περιττώματος μέρος τι ἐστὶ
morbid Of-useful then residue part some is
τὸ σπέρμα. Χρησιμώτατον δὲ τὸ ἔσχατον καὶ ἐξ οὗ
the seed Most-useful and the last and from which
ἤδη γίνεται ἕκαστον τῶν μορίων. Ἔστι γὰρ τὸ μὲν
already comes-to-be each of-the parts It-is for the-one indeed
πρότερον τὸ δ' ὕστερον. Τῆς μὲν οὖν πρώτης τροφῆς
earlier the-other and later Of-the indeed then first nourishment
περίττωμα φλέγμα καὶ εἴ τι ἄλλο τοιοῦτον. Καὶ
residue phlegm and if anything other such And
γὰρ τὸ φλέγμα τῆς χρησίμου τροφῆς περίττωμά ἐστιν·
for the phlegm of-the useful nourishment residue is
σημεῖον δ' ὅτι μιγνύμενον τροφῇ καθαρᾷ τρέφει καὶ
sign and that being-mixed with-nourishment pure it-nourishes and
πονοῦσι καταναλίσκεται. Τὸ δὲ τελευταῖον ἐκ πλείστης
for-those-laboring is-consumed The but last from most
τροφῆς ὀλίγιστον. Ἐννοεῖν δὲ δεῖ ὅτι μικρῷ αὐξάνεται
nourishment least To-understand and one-must that by-little grow
τὰ ζῷα καὶ τὰ φυτὰ τὸ καθ' ἡμέραν πᾶν· μικροῦ γὰρ
the animals and the plants the by day all of-little for
ἂν προστιθεμένου τοῦ αὐτοῦ ὑπερέβαλε τὸ μέγεθος.
— being-added of-the same would-exceed the size
Τοὐναντίον ἄρα ἢ οἱ ἀρχαῖοι ἔλεγον λεκτέον. Οἱ μὲν
The-opposite then than the ancients said must-be-said They indeed
γὰρ τὸ ἀπὸ παντὸς ἀπιόν, ἡμεῖς δὲ τὸ πρὸς ἅπαν ἰέναι
for the from all coming-away we but the to all to-go
πεφυκὸς σπέρμα ἐροῦμεν, καὶ οἱ μὲν σύντηγμα, φαίνεται
naturally-apt seed will-call and they indeed colliquation it-appears

δὲ περίττωμα μᾶλλον. Εὐλογώτερον γὰρ ὅμοιον εἶναι τὸ
but residue rather More-reasonable for like to-be the
προσιὸν ἔσχατον καὶ τὸ περιττὸν γινόμενον τοῦ τοιούτου,
coming-to last and the surplus coming-to-be of-the such
οἷον τοῖς γραφεῦσι τοῦ ἀνδρεικέλου πολλάκις περιγίνεται
as for-the painters of-the flesh-color often is-left-over
ὅμοιον τῷ ἀναλωθέντι. Συντηκόμενον δὲ φθείρεται πᾶν
like to-the used-up Being-colliquated and is-destroyed everything
καὶ ἐξίσταται τῆς φύσεως. Τεκμήριον δὲ τοῦ μὴ σύντηγμα
and departs-from the nature Proof and of-the not colliquation
εἶναι, ἀλλὰ περίττωμα μᾶλλον, τὸ τὰ μεγάλα τῶν ζῴων
to-be but residue rather the the large of-the animals
ὀλιγοτόκα εἶναι, τὰ δὲ μικρὰ πολύγονα. Σύντηγμα μὲν
few-bearing to-be the but small prolific Colliquation indeed
γὰρ πλέον ἀναγκαῖον εἶναι τοῖς μεγάλοις, περίττωμα
for more necessary to-be for-the large residue
δ' ἔλαττον· εἰς γὰρ τὸ σῶμα μέγα ὂν ἀναλίσκεται τὸ
but less into for the body large being is-consumed the
πλεῖστον τῆς τροφῆς, ὥστ' ὀλίγον γίνεται τὸ περίττωμα.
most of-the nourishment so-that little becomes the residue
Ἔτι τόπος συντήγματι μὲν οὐθεὶς ἀποδέδοται κατὰ
Further place for-colliquation indeed none has-been-assigned according-to
φύσιν, ἀλλὰ ῥεῖ ὅπου ἂν εὐοδήσῃ τοῦ σώματος, τοῖς δὲ
nature but it-flows where — it-find-way of-the body for-the but
κατὰ φύσιν περιττώμασι πᾶσιν, οἷον τῆς τροφῆς τῆς
according-to nature residues all such-as of-the nourishment the
ξηρᾶς ἡ κάτω κοιλία καὶ τῆς ὑγρᾶς ἡ κύστις καὶ τῆς
dry the lower belly and of-the moist the bladder and of-the
χρησίμης ἡ ἄνω κοιλία καὶ τῆς σπερματικῆς ὑστέραι καὶ
useful the upper belly and of-the seminal uteri and
αἰδοῖα καὶ μαστοί· εἰς τούτους γὰρ ἀθροίζεται καὶ συρρεῖ.
genitals and breasts into these for it-is-collected and flows-together

Καὶ μαρτύρια τὰ συμβαίνοντα, ὅτι τὸ εἰρημένον σπέρμα
And testimonies the happenings that the said seed
ἐστίν· ταῦτα δὲ συμβαίνει διὰ τὸ τὴν φύσιν εἶναι τοῦ
is these and happen because-of the the nature to-be of-the
περιττώματος τοιαύτην. Ἥ τε γὰρ ἔκλυσις ἐλαχίστου
residue such The both for exhaustion least
ἀπελθόντος τούτου γίνεται ἐπίδηλος, ὡς στερισκόμενα τὰ
having-gone-off this becomes conspicuous as being-deprived the
σώματα τοῦ ἐκ τῆς τροφῆς γινομένου τέλους. Ὀλίγοις
bodies of-the from the nourishment coming-to-be end For-few
δέ τισιν ἐν μικρῷ χρόνῳ κατὰ τὰς ἡλικίας κουφίζει τοῦτ'
but some in short time at the ages relieves this
ἀπιόν, ὅταν πλεονάσῃ, καθάπερ ἡ πρώτη τροφή, ἂν
coming-away when it-be-in-excess just-as the first nourishment if
ὑπερβάλλῃ τῷ πλήθει· καὶ γὰρ ταύτης ἀπιούσης τὰ σώματ'
it-exceed in-the quantity and for this going-away the bodies
εὐημερεῖ μᾶλλον, ἔτι ὅταν συναπίῃ ἄλλα περιττώματα· οὐ
thrive more further when go-away-with other residues not
γὰρ μόνον σπέρμα τὸ ἀπιόν, ἀλλὰ καὶ ἕτεραι μεμιγμέναι
for only seed the going-away but also other mixed
δυνάμεις τούτοις συναπέρχονται, αὗται δὲ νοσώδεις, διὸ
powers with-these go-away-with these and morbid wherefore
ἐνίων γε καὶ ἄγονόν ποτε γίνεται τὸ ἀποχωροῦν διὰ
of-some at-least also infertile sometimes becomes the discharged because-of
τὸ ὀλίγον ἔχειν τὸ σπερματικόν, ἀλλὰ τοῖς πλείστοις καὶ
the little to-have the seminal but for-the most and
ὡς ἐπὶ τὸ πολὺ εἰπεῖν συμβαίνει ἐκ τῶν ἀφροδισιασμῶν
as for the most-part to-say happens from the sexual-acts
ἔκλυσις καὶ ἀδυναμία μᾶλλον διὰ τὴν εἰρημένην αἰτίαν.
exhaustion and weakness rather because-of the said cause
Ἔτι οὐκ ἐνυπάρχει σπέρμα οὔτ' ἐν τῇ πρώτῃ ἡλικίᾳ οὔτ' ἐν
Further not is-present seed either in the first age or in

τῷ γήρᾳ οὔτ᾽ ἐν ταῖς ἀρρωστίαις, ἐν μὲν τῷ κάμνειν διὰ
the old-age or in the sicknesses in indeed the being-ill because-of
τὴν ἀδυναμίαν, ἐν δὲ τῷ γήρᾳ διὰ τὸ μὴ πέττειν τὸ ἱκανὸν
the weakness in and the old-age because-of the not to-concoct the sufficient
τὴν φύσιν, νέοις δ᾽ οὖσι διὰ τὴν αὔξησιν· φθάνει
the nature for-the-young and being because-of the growth it-anticipates
γὰρ ἀναλισκόμενον πᾶν· ἐν ἔτεσι γὰρ πέντε σχεδὸν ἐπί
for being-consumed all in years for five nearly in-the-case-of
γε τῶν ἀνθρώπων ἥμισυ λαμβάνειν δοκεῖ τὸ σῶμα τοῦ
at-least the men half to-take seems the body of-the
μεγέθους τοῦ ἐν τῷ ἄλλῳ χρόνῳ γιγνομένου ἅπαντος.
size of-the in the other time coming-to-be all
Πολλοῖς δὲ συμβαίνει καὶ ζῴοις καὶ φυτοῖς καὶ γένεσι πρὸς
To-many and it-happens both animals and plants and kinds against
γένη διαφορὰ περὶ ταῦτα κἂν τῷ γένει τῷ αὐτῷ τοῖς
kinds difference about these and-in the kind the same for-the
ὁμοειδέσι πρὸς ἄλληλα, οἷον ἀνθρώπῳ πρὸς ἄνθρωπον καὶ
same-species against one-another such-as man against man and
ἀμπέλῳ πρὸς ἄμπελον. Τὰ μὲν γὰρ πολύσπερμα τὰ
vine against vine The-ones indeed for much-seeded the-others
δ᾽ ὀλιγόσπερμά ἐστι, τὰ δ᾽ ἄσπερμα πάμπαν, οὐ δι᾽
but little-seeded are the-others and seedless altogether not because-of
ἀσθένειαν, ἀλλ᾽ ἐνίοις γε τοὐναντίον· καταναλίσκεται γὰρ
weakness but in-some at-least the-opposite it-is-consumed for
εἰς τὸ σῶμα, οἷον τῶν ἀνθρώπων ἐνίοις· εὐεκτικοὶ γὰρ
into the body such-as of-the men in-some in-good-condition for
ὄντες καὶ γινόμενοι πολύσαρκοι ἢ πιότεροι μᾶλλον ἧττον
being and becoming fleshy or fatter rather less
προΐενται σπέρμα καὶ ἧττον ἐπιθυμοῦσι τοῦ ἀφροδισιάζειν.
they-emit seed and less they-desire the to-have-sex
Ὅμοιον δὲ καὶ τὸ περὶ τὰς τραγώσας ἀμπέλους πάθος,
Like and also the about the goatish vines affection

αἳ διὰ τὴν τροφὴν ἐξυβρίζουσιν, ἐπεὶ καὶ οἱ τράγοι
which because-of the nourishment run-riot since also the he-goats
πίονες ὄντες ἧττον ὀχεύουσιν· διὸ καὶ προλεπτύνουσιν
fat being less mount wherefore also they-thin-first
αὐτούς, καὶ τὰς ἀμπέλους τραγᾶν ἀπὸ τοῦ πάθους τῶν
them and the vines to-go-goatish from the affection of-the
τράγων καλοῦσιν. Καὶ οἱ πίονες δὲ ἀγονώτεροι φαίνονται
he-goats they-call Also the fat and less-fertile appear
εἶναι τῶν μὴ πιόνων, καὶ γυναῖκες καὶ ἄνδρες, διὰ τὸ
to-be than-the not fat both women and men because-of the
τοῖς εὐτραφέσι πεττόμενον τὸ περίττωμα γίνεσθαι πιμελήν·
for-the well-fed concocted the residue to-become fat
ἔστι γὰρ καὶ ἡ πιμελὴ περίττωμα δι' εὐβοσίαν ὑγιεινόν.
it-is for also the fat residue because-of good-feeding healthy
Ἔνια δ' ὅλως οὐδὲ φέρει σπέρμα, οἷον ἰτέα καὶ αἴγειρος.
Some and at-all not-even bear seed such-as willow and poplar
Εἰσὶ μὲν οὖν καὶ ἕτεραι αἰτίαι τούτου τοῦ πάθους. Καὶ
There-are indeed then also other causes of-this the affection And
γὰρ δι' ἀδυναμίαν οὐ πέττουσι καὶ διὰ δύναμιν
for because-of weakness not they-concoct and because-of power
ἀναλίσκουσιν, ὥσπερ εἴρηται. Ὁμοίως δὲ καὶ πολύχοά
they-consume just-as has-been-said Likewise and also abounding-in-fluid
ἐστι καὶ πολύσπερμα τὰ μὲν διὰ δύναμιν τὰ
are and much-seeded the-ones indeed because-of power the-others
δὲ δι' ἀδυναμίαν. Πολὺ γὰρ καὶ ἄχρηστον περίττωμα
and because-of weakness Much for and useless residue
συμμίγνυται, ὥστ' ἐνίοις γίγνεσθαι καὶ ἀρρώστημα, ὅταν
is-mixed so-that in-some to-become also sickness when
αὐτῶν μὴ εὐοδήσῃ ἡ ἀποκάθαρσις. Καὶ ἔνιοι μὲν ὑγιάζονται,
of-them not find-way the purging And some indeed are-cured
οἱ δὲ καὶ ἀναιροῦνται. Συντήκονται γὰρ ταύτῃ ὥσπερ
the-others and also are-killed They-are-colliquated for here just-as

καὶ εἰς τὸ οὖρον· ἤδη γὰρ καὶ τοῦτ᾽ ἀσθένημα συνέβη
also into the urine already for also this illness happened
τισίν. Ἔτι ὁ πόρος ὁ αὐτὸς τῷ περιττώματι καὶ τῷ
to-some Further the duct the same for-the residue and for-the
σπέρματι· καὶ ὅσοις μὲν ἀμφοῖν γίγνεται περίττωμα,
seed and in-as-many-as indeed of-both comes-to-be residue
καὶ τῆς ὑγρᾶς καὶ τῆς ξηρᾶς τροφῆς, ᾗπερ ἡ τοῦ ὑγροῦ,
both of-the moist and of-the dry nourishment where-very the of-the moist
ταύτῃ καὶ ἡ τῆς γονῆς γίγνεται ἀπόκρισις (ὑγροῦ γὰρ
there also the of-the semen comes-to-be secretion of-moist for
περίττωμά ἐστιν· ἡ γὰρ τροφὴ πάντων ὑγρὰ μᾶλλον),
residue it-is the for nourishment of-all moist rather
οἷς δὲ μή ἐστιν αὕτη, κατὰ τὴν τῆς ξηρᾶς ὑποστάσεως
in-whom but not is this by the of-the dry sediment
ἀποχώρησιν. Ἔτι ἡ μὲν σύντηξις ἀεὶ νοσώδης, ἡ δὲ τοῦ
discharge Further the indeed colliquation always morbid the but of-the
περιττώματος ἀφαίρεσις ὠφέλιμος· ἡ δὲ τοῦ σπέρματος
residue removal beneficial the but of-the seed
ἀποχώρησις ἀμφοτέρων διὰ τὸ προσλαμβάνειν τῆς μὴ
discharge of-both because-of the taking-in-besides of-the not
χρησίμου τροφῆς. Εἰ δέ γ᾽ ἦν σύντηξις, ἀεὶ ἔβλαπτεν
useful nourishment If but at-least it-were colliquation always it-would-harm
ἄν· νῦν δ᾽ οὐ ποιεῖ τοῦτο. Ὅτι μὲν οὖν περίττωμά ἐστι
— now but not it-does this That indeed then residue is
τὸ σπέρμα χρησίμου τροφῆς καὶ τῆς ἐσχάτης, εἴτε πάντα
the seed of-useful nourishment and of-the last whether all
προΐεται σπέρμα εἴτε μή, ἐν τοῖς προειρημένοις φανερόν.
emit seed or not in the said-before evident

Seed is a residue of the last nourishment, blood or its analogue, potentially each part. The menses are the female's residue, more plentiful and less concocted, since she is weaker and less hot. They come when semen does, as voice and breasts change, cease in age, and leave women smaller, smoother, and paler. Since two seminal secretions cannot coexist, the female emits no seed: conception needs not pleasure but the right measure of menses, and she supplies the matter.

Μετὰ δὲ ταῦτα διοριστέον περίττωμά τε ποίας
After and these-things it-must-be-determined residue both of-what-sort
τροφῆς, καὶ περὶ καταμηνίων· γίγνεται γάρ τισι
nourishment and about menses comes-to-be for to-some
καταμήνια τῶν ζῳοτόκων. Διὰ τούτων γὰρ φανερὸν
menses of-the live-bearing Through these for evident
ἔσται καὶ περὶ τοῦ θήλεος, πότερον προΐεται σπέρμα
it-will-be also about the female whether it-emits seed
ὥσπερ τὸ ἄρρεν καὶ ἔστιν ἓν μῖγμα τὸ γινόμενον ἐκ δυοῖν
just-as the male and is one mixture the coming-to-be from two
σπερμάτοιν, ἢ οὐθὲν σπέρμα ἀποκρίνεται ἀπὸ τοῦ θήλεος·
seeds or no seed is-secreted from the female
καὶ εἰ μηθέν, πότερον οὐδὲ ἄλλο οὐθὲν συμβάλλεται εἰς
and if none whether not-even other anything it-contributes to
τὴν γένεσιν ἀλλὰ μόνον παρέχει τόπον, ἢ συμβάλλεταί
the generation but only provides place or it-contributes
τι, καὶ τοῦτο πῶς καὶ τίνα τρόπον. Ὅτι μὲν οὖν
something and this how and in-what way That indeed then
ἐστὶν ἐσχάτη τροφὴ τὸ αἷμα τοῖς ἐναίμοις, τοῖς δ'
is last nourishment the blood for-the blooded for-the and
ἀναίμοις τὸ ἀνάλογον, εἴρηται πρότερον· ἐπεὶ δὲ καὶ
bloodless the analogous has-been-said before since and also
ἡ γονὴ περίττωμά ἐστι τροφῆς καὶ τῆς ἐσχάτης, ἤτοι
the semen residue is of-nourishment and of-the last either

αἷμα ἂν εἴη ἢ τὸ ἀνάλογον ἢ ἐκ τούτων τι. Ἐπεὶ
blood — would-be or the analogous or from these something Since
δ' ἐκ τοῦ αἵματος πεττομένου καὶ μεριζομένου πως
and from the blood being-concocted and being-divided somehow
γίνεται τῶν μορίων ἕκαστον, τὸ δὲ σπέρμα πεφθὲν μὲν
comes-to-be of-the parts each the and seed concocted indeed
ἀλλοιότερον ἀποκρίνεται τοῦ αἵματος, ἄπεπτον δ' ὄν,
rather-altered is-secreted from-the blood unconcocted but being
καὶ ὅταν τις προσβιάζηται πλεονάκις χρώμενος τῷ
and when someone force-himself more-often using the
ἀφροδισιάζειν, ἐνίοις αἱματῶδες ἤδη προελήλυθεν, φανερὸν
to-have-sex in-some bloody already has-come-forth evident
ὅτι τῆς αἱματικῆς ἂν εἴη περίττωμα τροφῆς τὸ
that of-the blood-like — would-be residue of-nourishment the
σπέρμα, τῆς εἰς τὰ μέρη διαδιδομένης τελευταίας.
seed of-the to the parts being-distributed last
Καὶ διὰ τοῦτο μεγάλην ἔχει δύναμιν· καὶ γὰρ ἡ τοῦ
And because-of this great it-has power and for the of-the
καθαροῦ καὶ ὑγιεινοῦ αἵματος ἀποχώρησις ἐκλυτικόν· καὶ
pure and healthy blood discharge exhausting and
τὸ ὅμοια γίγνεσθαι τὰ ἔκγονα τοῖς γεννήσασιν εὔλογον·
the alike to-become the offspring to-the generators reasonable
ὅμοιον γὰρ τὸ προσελθὸν πρὸς τὰ μέρη τῷ ὑπολειφθέντι.
like for the having-come to the parts to-the left-over
Ὥστε τὸ σπέρμα ἐστὶ τὸ τῆς χειρὸς ἢ τὸ τοῦ προσώπου
So-that the seed is the of-the hand or the of-the face
ἢ ὅλου τοῦ ζῴου ἀδιορίστως χεὶρ ἢ πρόσωπον ἢ ὅλον
or of-whole the animal indistinctly hand or face or whole
ζῷον· καὶ οἷον ἐκείνων ἕκαστον ἐνεργείᾳ, τοιοῦτον τὸ
animal and as of-those each in-actuality such the
σπέρμα δυνάμει, ἢ κατὰ τὸν ὄγκον τὸν ἑαυτοῦ, ἢ ἔχει
seed in-potentiality either by the bulk the its-own or it-has

τινὰ δύναμιν ἐν ἑαυτῷ. Τοῦτο γὰρ οὔπω δῆλον ἡμῖν ἐκ
some power in itself This for not-yet clear to-us from
τῶν διωρισμένων, πότερον τὸ σῶμα τοῦ σπέρματός ἐστι τὸ
the distinguished-things whether the body of-the seed is the
αἴτιον τῆς γενέσεως, ἢ ἔχει τινὰ ἕξιν καὶ ἀρχὴν κινήσεως
cause of-the generation or it-has some state and principle of-motion
γεννητικήν· οὐδὲ γὰρ ἡ χεὶρ οὐδ' ἄλλο τῶν μορίων οὐδὲν
generative not-even for the hand nor other of-the parts any
ἄνευ ψυχῆς ἢ ἄλλης τινὸς δυνάμεώς ἐστι χεὶρ οὐδὲ μόριον
without soul or other some power is hand nor part
οὐθέν, ἀλλὰ μόνον ὁμώνυμον. Φανερὸν δὲ καὶ ὅτι ὅσοις
any but only homonymous Evident and also that in-as-many-as
σύντηξις γίνεται σπερματική, καὶ τοῦτο περίττωμά ἐστιν.
colliquation occurs seminal also this residue is
Συμβαίνει δὲ τοῦτο ὅταν ἀναλύηται εἰς τὸ προσελθόν,
Happens and this when it-be-dissolved into the having-come
ὥσπερ ὅταν ἀποπέσῃ τὸ ἐναλειφθὲν τοῦ κονιάματος εὐθύς·
just-as when fall-off the smeared-on of-the plaster at-once
ταὐτὸν γάρ ἐστι τὸ ἀπελθὸν τῷ πρώτῳ προστεθέντι.
the-same for is the having-gone-away to-the first added
Τὸν αὐτὸν τρόπον καὶ τὸ τελευταῖον περίττωμα τῷ
The same way also the last residue to-the
πρώτῳ συντήγματι ταὐτόν ἐστιν. Καὶ περὶ μὲν τούτων
first colliquation the-same is And about indeed these
διωρίσθω τὸν τρόπον τοῦτον. Ἐπεὶ δ' ἀναγκαῖον
let-it-be-determined the way this Since and necessary
καὶ τῷ ἀσθενεστέρῳ γίγνεσθαι περίττωμα πλεῖον καὶ
also for-the weaker to-come-to-be residue more and
ἧττον πεπεμμένον, τοιοῦτον δ' ὂν ἀναγκαῖον εἶναι
less concocted such but being necessary to-be
αἱματώδους ὑγρότητος πλῆθος, ἀσθενέστερον δὲ τὸ
of-blood-like moisture quantity weaker and the

ἐλάττονος θερμότητος κοινωνοῦν κατὰ φύσιν, τὸ δὲ
of-less heat partaking according-to nature the and
θῆλυ ὅτι τοιοῦτον εἴρηται πρότερον, ἀναγκαῖον καὶ τὴν
female that such has-been-said before necessary also the
ἐν τῷ θήλει γινομένην αἱματώδη ἀπόκρισιν περίττωμα
in the female coming-to-be bloody secretion residue
εἶναι. Γίνεται δὲ τοιαύτη ἡ τῶν καλουμένων καταμηνίων
to-be Comes-to-be and such the of-the so-called menses
ἔκκρισις. Ὅτι μὲν οὖν ἐστὶ τὰ καταμήνια περίττωμα, καὶ
excretion That indeed then are the menses residue and
ὅτι ἀνάλογον ὡς τοῖς ἄρρεσιν ἡ γονὴ οὕτω τοῖς θήλεσι
that analogous as for-the males the semen so for-the females
τὰ καταμήνια, φανερόν. Ὅτι δ' ὀρθῶς εἴρηται, σημεῖα
the menses evident That but correctly it-has-been-said signs
τὰ συμβαίνοντα περὶ αὐτά. Κατὰ γὰρ τὴν αὐτὴν ἡλικίαν
the happenings about them At for the same age
τοῖς μὲν ἄρρεσιν ἄρχεται ἐγγίνεσθαι γονὴ καὶ ἀποκρίνεται,
for-the indeed males begins to-come-to-be-in semen and is-secreted
τοῖς δὲ θήλεσι ῥήγνυται τὰ καταμήνια καὶ φωνήν τε
for-the and females break-forth the menses and voice both
μεταβάλλουσι καὶ ἐπισημαίνει τὰ περὶ τοὺς μαστούς.
they-change and show-signs the about the breasts
Καὶ παύεται τῆς ἡλικίας ληγούσης τοῖς μὲν τὸ δύνασθαι
And ceases the age declining for-the indeed the to-be-able
γεννᾶν, ταῖς δὲ τὰ καταμήνια. Ἔτι δὲ καὶ τὰ τοιάδε
to-generate for-the and the menses Further and also the such
σημεῖα ὅτι περίττωμά ἐστιν αὕτη ἡ ἔκκρισις τοῖς θήλεσιν.
signs that residue is this the excretion for-the females
Ὡς γὰρ ἐπὶ τὸ πολὺ οὔθ' αἱμορροΐδες γίνονται ταῖς
As for for the most-part neither hemorrhoids occur for-the
γυναιξὶν οὔτ' ἐκ τῶν ῥινῶν ῥύσις αἵματος οὔτε τι
women nor from the nostrils flow of-blood nor anything

ἄλλο μὴ τῶν καταμηνίων ἱσταμένων· ἐάν τε συμβῇ τι
other not the menses stopping if both happen any
τούτων, χείρους γίγνονται αἱ καθάρσεις ὡς ἀναλισκομένης
of-these worse become the purgations as being-used-up
εἰς ταῦτα τῆς ἀποκρίσεως. Ἔτι δὲ οὔτε φλεβώδεις
into these the secretion Further and neither veiny
ὁμοίως γλαφυρώτερά τε καὶ λειότερα τὰ θήλεα τῶν
likewise more-delicate both and smoother the females than-the
ἀρρένων ἐστὶ διὰ τὸ συνεκκρίνεσθαι τὴν εἰς ταῦτα
males are because-of the to-be-excreted-together the into these
περίττωσιν ἐν τοῖς καταμηνίοις. Τὸ δ' αὐτὸ τοῦτο δεῖ
residue in the menses The and same this one-must
νομίζειν αἴτιον εἶναι καὶ τοῦ τοὺς ὄγκους ἐλάττους εἶναι
to-think cause to-be also of-the the bulks smaller to-be
τῶν σωμάτων τοῖς θήλεσιν ἢ τοῖς ἄρρεσιν ἐν τοῖς
of-the bodies for-the females than for-the males in the
ζῳοτοκοῦσιν· ἐν τούτοις γὰρ ἡ τῶν καταμηνίων γίνεται
live-bearing in these for the of-the menses occurs
ῥύσις θύραζε μόνοις, καὶ τούτων ἐπιδηλότατα ἐν ταῖς
flow outside alone and of-these most-evidently in the
γυναιξίν· πλείστην γὰρ ἀφίησιν ἀπόκρισιν γυνὴ τῶν ζῴων.
women most for emits secretion woman of-the animals
Διόπερ ἐπιδηλοτάτως ἀεὶ ὠχρόν τέ ἐστι καὶ ἀδηλόφλεβον,
Wherefore most-evidently always pale both she-is and with-veins-unseen
καὶ τὴν ἔλλειψιν πρὸς τοὺς ἄρρενας ἔχει τοῦ σώματος
and the deficiency compared-with the males she-has of-the body
φανεράν. Ἐπεὶ δὲ τοῦτ' ἐστὶν ὃ γίγνεται τοῖς θήλεσιν ὡς
evident Since and this is what comes-to-be in-the females as
ἡ γονὴ τοῖς ἄρρεσιν, δύο δ' οὐκ ἐνδέχεται σπερματικὰς
the semen in-the males two but not is-possible seminal
ἅμα γίνεσθαι ἀποκρίσεις, φανερὸν ὅτι τὸ θῆλυ οὐ
at-once to-come-about secretions evident that the female not

συμβάλλεται σπέρμα εἰς τὴν γένεσιν· εἰ μὲν γὰρ σπέρμα
contributes seed to the generation if indeed for seed
ἦν, τὰ καταμήνια οὐκ ἂν ἦν· νῦν δὲ διὰ τὸ ταῦτα
were the menses not — they-would-be now but because-of the these
γίγνεσθαι ἐκεῖνο οὐκ ἔστιν. Διότι μὲν οὖν, ὥσπερ τὸ σπέρμα,
to-come-to-be that not is That indeed then just-as the seed
καὶ τὰ καταμήνια περίττωμά ἐστιν, εἴρηται· λάβοι δ' ἄν
also the menses residue is has-been-said could-take and —
τις εἰς τοῦτο μαρτύρια ἔνια τῶν συμβαινόντων τοῖς ζῴοις.
someone for this testimonies some of-the happenings to-the animals
Τά τε γὰρ πίονα ἧττόν ἐστι σπερματικὰ τῶν ἀπιμέλων,
The both for fat less are seminal than-the fatless
ὥσπερ εἴρηται πρότερον. Αἴτιον δ' ὅτι καὶ ἡ πιμελὴ
just-as has-been-said before Cause and that also the fat
περίττωμά ἐστι καθάπερ τὸ σπέρμα, καὶ πεπεμμένον αἷμα,
residue is just-as the seed and concocted blood
ἀλλ' οὐ τὸν αὐτὸν τρόπον τῷ σπέρματι. Ὥστ' εὐλόγως
but not the same way to-the seed So-that reasonably
εἰς τὴν πιμελὴν ἀνηλωμένης τῆς περιττώσεως ἐλλείπει
into the fat used-up the residue are-deficient
τὰ περὶ τὴν γονήν, οἷον τῶν τε ἀναίμων τὰ μαλάκια
the about the semen such-as of-the both bloodless the cephalopods
καὶ τὰ μαλακόστρακα περὶ τὴν κύησίν ἐστιν ἄριστα.
and the crustaceans about the gestation are best
Διὰ τὸ ἄναιμα γὰρ εἶναι καὶ μὴ γίνεσθαι πιμελὴν
Because-of the bloodless for to-be and not to-come-to-be fat
ἐν αὐτοῖς, τὸ ἀνάλογον αὐτοῖς τῇ πιμελῇ ἀποκρίνεται
in them the analogous for-them to-the fat is-secreted
εἰς τὸ περίττωμα τὸ σπερματικόν. Σημεῖον δ' ὅτι οὐ
into the residue the seminal Sign and that not
τοιοῦτο σπέρμα προΐεται τὸ θῆλυ οἷον τὸ ἄρρεν. Οὐδὲ
such seed emits the female as the male Nor

μιγνυμένων ἀμφοῖν γίνεται, ὥσπερ τινές φασιν, ὅτι
being-mixed both it-comes-to-be just-as some say that
πολλάκις τὸ θῆλυ συλλαμβάνει οὐ γενομένης αὐτῇ τῆς ἐν
often the female conceives not having-occurred to-her the in
τῇ ὁμιλίᾳ ἡδονῆς· καὶ γιγνομένης πάλιν οὐδὲν ἧττον, καὶ
the intercourse pleasure and occurring again nothing less and
ἰσοδρομησάντων παρὰ τοῦ ἄρρενος καὶ τοῦ θήλεος, οὐ
having-run-equal from the male and the female not
γίγνεται, ἐὰν μὴ ἡ τῶν καλουμένων καταμηνίων ἰκμὰς
it-comes-to-be if not the of-the so-called menses moisture
ὑπάρχῃ σύμμετρος. Διὸ οὔτε ὅλως μὴ γιγνομένων
be-present proportionate Wherefore neither at-all not occurring
αὐτῶν γεννᾷ τὸ θῆλυ, οὔτε γιγνομένων ὅταν ἐξικμάζῃ ὡς
them generates the female nor occurring when it-runs-out as
ἐπὶ τὸ πολύ, ἀλλὰ μετὰ τὴν κάθαρσιν. Ὁτὲ μὲν γὰρ
for the most-part but after the purgation At-times indeed for
οὐκ ἔχει τροφὴν οὐδ' ὕλην, ἐξ ἧς δυνήσεται συστῆσαι
not it-has nourishment nor matter from which it-will-be-able to-constitute
τὸ ζῷον ἡ ἀπὸ τοῦ ἄρρενος ἐνυπάρχουσα ἐν τῇ γονῇ
the animal the from the male being-present-in in the semen
δύναμις· ὁτὲ δὲ συνεκκλύζεται διὰ τὸ πλῆθος.
power at-times and it-is-washed-out-together because-of the quantity
Ὅταν δὲ γενομένων ἀπέλθῃ, τὸ ὑπολειφθὲν συνίσταται.
When and having-occurred go-away the left-over it-is-constituted
Ὅσαι δὲ μὴ γιγνομένων τῶν καταμηνίων συλλαμβάνουσιν,
As-many-as and not occurring the menses conceive
ἢ μεταξὺ γιγνομένων ὕστερον δὲ μή, αἴτιον ὅτι ταῖς
or in-between occurring later but not cause that for-the
μὲν τοσαύτη γίνεται ἰκμὰς ὅση μετὰ τὴν κάθαρσιν
indeed so-much comes-to-be moisture as-much-as after the purgation
ὑπολείπεται ταῖς γονίμοις, πλείων δ' οὐ γίγνεται
is-left-behind in-the fertile more but not comes-to-be

περίττωσις ὥστε καὶ θύραζε ἀπελθεῖν, ταῖς δὲ μετὰ τὴν
residue so-that also outside to-go-away for-the and after the
κάθαρσιν συμμύει τὸ στόμα τῶν ὑστερῶν. Ὅταν οὖν πολὺ
purgation closes the mouth of-the uteri When then much
μὲν τὸ ἀπεληλυθὸς ᾖ, ἔτι δὲ γίγνηται μὲν κάθαρσις, μὴ
indeed the having-gone-away be still but come-about indeed purgation not
τοσαύτη δὲ ὥστε ἐξικμάζειν τὸ σπέρμα, τότε πλησιάζουσαι
so-much but so-that to-wash-out the seed then consorting
συλλαμβάνουσι πάλιν. Οὐδὲν δὲ ἄτοπον τὸ συνειληφυίαις
they-conceive again Nothing and strange the for-having-conceived
ἔτι γίγνεσθαι· καὶ γὰρ ὕστερον μέχρι τινὸς φοιτᾷ τὰ
still to-come-about and for later as-far-as some-time come the
καταμήνια, ὀλίγα δὲ καὶ οὐ διὰ παντός. Ἀλλὰ τοῦτο
menses few but and not through all But this
μὲν νοσηματῶδες, διόπερ ὀλίγαις καὶ ὀλιγάκις συμβαίνει·
indeed morbid wherefore in-few and seldom happens
τὰ δ' ὡς ἐπὶ τὸ πολὺ γινόμενα μάλιστα κατὰ
the but as for the most-part happening most according-to
φύσιν ἐστίν. Ὅτι μὲν οὖν συμβάλλεται τὸ θῆλυ εἰς τὴν
nature are That indeed then contributes the female to the
γένεσιν τὴν ὕλην, τοῦτο δ' ἐστὶν ἐν τῇ τῶν καταμηνίων
generation the matter this and is in the of-the menses
συστάσει, τὰ δὲ καταμήνια περίττωμα, δῆλον.
constitution the and menses residue clear

The fluid some women release in intercourse is a uterine discharge, not seed, of fair, feminine women, not dark, masculine ones; the pleasure proves nothing: boys and the infertile feel it. The female is like an infertile male, too cold to concoct her last nourishment into seed; her menses, a natural hemorrhage, are impure seed, starting at the male's age of seed, in some blooded animals, women most. One mating yields many, so seed is not drawn from every part: the female gives matter, the male form and motion, as rennet sets milk.

Ὃ δ' οἴονταί τινες σπέρμα συμβάλλεσθαι ἐν τῇ συνουσίᾳ
What but think some seed to-contribute in the intercourse
τὸ θῆλυ διὰ τὸ γίνεσθαι παραπλησίαν τε χαρὰν ἐνίοτε
the female because-of the to-come-about similar both joy sometimes
αὐταῖς τῇ τῶν ἀρρένων καὶ ἅμα ὑγρὰν ἀπόκρισιν, οὐκ
to-them to-the of-the males and at-once moist secretion not
ἔστιν ἡ ὑγρασία αὕτη σπερματικὴ ἀλλὰ τοῦ τόπου ἴδιος
is the moisture this seminal but of-the place peculiar
ἑκάσταις. Ἔστι γὰρ τῶν ὑστερῶν ἔκκρισις, καὶ ταῖς
to-each There-is for of-the uteri excretion and in-some
μὲν γίγνεται ταῖς δ' οὔ. Γίγνεται μὲν ταῖς λευκοχρόοις
indeed it-occurs in-others but not It-occurs indeed in-the fair-skinned
καὶ θηλυκαῖς ὡς ἐπὶ τὸ πολὺ εἰπεῖν, οὐ γίνεται δὲ ταῖς
and feminine as for the most-part to-say not it-occurs but in-the
μελαίναις καὶ ἀρρενωποῖς. Τὸ δὲ πλῆθος, αἷς γίγνεται,
dark and masculine-looking The but quantity in-whom it-occurs
ἐνίοτε οὐ κατὰ σπέρματος πρόεσίν ἐστιν, ἀλλὰ πολὺ
sometimes not in-proportion-to seed's emission is but much
ὑπερβάλλει. Ἔτι δὲ καὶ ἐδέσματα ἕτερα ἑτέρων ποιεῖ
exceeds Further and also foods some than-others make
πολλὴν διαφορὰν τοῦ γίγνεσθαι τὴν ἔκκρισιν ἢ ἐλάττω
much difference of-the to-come-about the excretion either less

ἢ πλείω τὴν τοιαύτην, οἷον ἔνια τῶν δριμέων ἐπίδηλον
or more the such such-as some of-the pungent conspicuous
ποιεῖ εἰς πλῆθος τὴν ἀπόκρισιν. Τὸ δὲ συμβαίνειν ἡδονὴν
make into quantity the secretion The and to-happen pleasure
ἐν τῇ συνουσίᾳ οὐ μόνον τοῦ σπέρματος προϊεμένου ἐστίν,
in the intercourse not only of-the seed being-emitted is
ἀλλὰ καὶ πνεύματος, ἐξ οὗ συνισταμένου ἀποσπερματίζει.
but also of-breath from which being-constituted it-ejaculates
Δῆλον δ' ἐπὶ τῶν παίδων τῶν μήπω δυναμένων
Clear and in-the-case-of the boys the not-yet being-able
προΐεσθαι, ἐγγὺς δὲ τῆς ἡλικίας ὄντων, καὶ τῶν ἀγόνων
to-emit near but the age being and the infertile
ἀνδρῶν· γίνεται γὰρ πᾶσι τούτοις ἡδονὴ ξυομένοις. Καὶ
men occurs for for-all these pleasure being-rubbed And
τοῖς γε διεφθαρμένοις τὴν γένεσιν ἔστιν ὅτε ἀναλύονται
for-those at-least destroyed in-the generation there-is when are-loosened
αἱ κοιλίαι διὰ τὸ ἀποκρίνεσθαι περίττωμα εἰς τὴν κοιλίαν
the bowels because-of the to-be-secreted residue into the bowel
οὐ δυνάμενον πεφθῆναι καὶ γενέσθαι σπέρμα. Ἔοικε δὲ καὶ
not able to-be-concocted and to-become seed Resembles and also
τὴν μορφὴν γυνὴ καὶ παῖς, καὶ ἔστιν ἡ γυνὴ ὥσπερ ἄρρεν
in-the shape woman and child and is the woman just-as male
ἄγονον. Ἀδυναμίᾳ γάρ τινι τὸ θῆλύ ἐστι, τῷ μὴ δύνασθαι
infertile By-incapacity for some the female is by-the not to-be-able
πέττειν ἐκ τῆς τροφῆς σπέρμα τῆς ὑστάτης. Τοῦτο δ' ἐστὶν
to-concoct from the nourishment seed the last This and is
ἢ αἷμα ἢ τὸ ἀνάλογον ἐν τοῖς ἀναίμοις διὰ ψυχρότητα
either blood or the analogous in the bloodless because-of coldness
τῆς φύσεως. Ὥσπερ οὖν ἐν ταῖς κοιλίαις διὰ τὴν
of-the nature Just-as then in the bowels because-of the
ἀπεψίαν γίνεται διάρροια, οὕτως ἐν ταῖς φλεψὶν αἵ τ' ἄλλαι
indigestion arises diarrhea so in the veins the both other

αἱμορροΐδες καὶ αἱ τῶν καταμηνίων· καὶ γὰρ αὕτη αἱμορροΐς
hemorrhages and the of-the menses and for this hemorrhage
ἐστιν, ἀλλ' ἐκεῖναι μὲν διὰ νόσον, αὕτη δὲ φυσική.
is but those indeed because-of disease this but natural
Ὥστε φανερὸν ὅτι εὐλόγως γίνεται ἐκ τούτου ἡ γένεσις.
So-that evident that reasonably comes-to-be from this the generation
Ἔστι γὰρ τὰ καταμήνια σπέρμα οὐ καθαρὸν ἀλλὰ δεόμενον
Are for the menses seed not pure but needing
ἐργασίας, ὥσπερ ἐν τῇ περὶ τοὺς καρποὺς γενέσει, ὅταν ᾖ
working-up just-as in the about the fruits generation when it-be
μήπω διῃτημένη, ἔνεστι μὲν ἡ τροφή, δεῖται δ' ἐργασίας
not-yet regulated is-present indeed the nourishment it-needs but working-up
πρὸς τὴν κάθαρσιν. Διὸ καὶ μιγνυμένη ἐκείνη μὲν τῇ
for the purification Wherefore also mixed that indeed with-the
γονῇ, αὕτη δὲ καθαρᾷ τροφῇ, ἡ μὲν γεννᾷ, ἡ
semen this and with-pure nourishment the-one indeed generates the-other
δὲ τρέφει. Σημεῖον δὲ τοῦ τὸ θῆλυ μὴ προΐεσθαι σπέρμα
and nourishes Sign and of-the the female not to-emit seed
καὶ τὸ γίνεσθαι ἐν τῇ ὁμιλίᾳ τὴν ἡδονὴν τῇ ἁφῇ κατὰ
also the to-come-about in the intercourse the pleasure by-the touch at
τὸν αὐτὸν τόπον τοῖς ἄρρεσιν· καίτοι οὐ προΐενται τὴν
the same place as-for-the males and-yet not they-emit the
ἰκμάδα ταύτην ἐντεῦθεν. Ἔτι δ' οὐ πᾶσι γίνεται τοῖς
moisture this from-there Further and not in-all occurs the
θήλεσιν αὕτη ἡ ἔκκρισις, ἀλλὰ τοῖς αἱματικοῖς, καὶ οὐδὲ
females this the excretion but in-the sanguineous and not-even
τούτοις πᾶσιν, ἀλλ' ὅσων αἱ ὑστέραι μὴ πρὸς τῷ
in-these all but of-as-many-as the uteri not at the
ὑποζώματί εἰσι μηδ' ᾠοτοκοῦσιν, ἔτι δ' οὐδὲ τοῖς αἷμα
diaphragm are nor lay-eggs further and not-even in-those blood
μὴ ἔχουσιν ἀλλὰ τὸ ἀνάλογον· ὅπερ γὰρ ἐνίοις τὸ αἷμα,
not having but the analogous which-very for in-some the blood

ἐν τούτοις ἑτέρα ὑπάρχει σύγκρισις. Τοῦ δὲ μήτε τούτοις
in these other belongs composition Of-the and neither in-these
γίγνεσθαι κάθαρσιν μήτε τῶν αἷμα ἐχόντων τοῖς εἰρημένοις,
to-come-about purgation nor of-the blood having in-the said
τοῖς κάτω ἔχουσι καὶ μὴ ᾠοτοκοῦσιν, αἰτία ἡ ξηρότης τῶν
the below having and not laying-eggs cause the dryness of-the
σωμάτων, ὀλίγον λείπουσα τὸ περίττωμα, καὶ τοσοῦτον
bodies little leaving the residue and so-much
ὅσον εἰς τὴν γένεσιν ἱκανὸν μόνον, ἔξω δὲ μὴ προΐεσθαι.
as-much-as for the generation sufficient only outside but not to-be-emitted
Ὅσα δὲ ζῳοτόκα ἄνευ ᾠοτοκίας (ταῦτα δ' ἐστὶν
As-many-as and live-bearing without egg-laying these and are
ἄνθρωπος καὶ τῶν τετραπόδων ὅσα κάμπτει τὰ
man and of-the quadrupeds as-many-as bend the
ὀπίσθια σκέλη ἐντός· ταῦτα μὲν γὰρ πάντα ζῳοτοκεῖ
hind legs inward these indeed for all bear-live
ἄνευ ᾠοτοκίας) τούτοις δὲ γίγνεται μὲν πᾶσιν, πλὴν
without egg-laying in-these and it-occurs indeed in-all except
εἴ τι πεπήρωται ἐν τῇ γενέσει, οἷον ὀρεύς, οὐ μὴν
if something has-been-maimed in the generation such-as mule not truly
ἐπιπολάζουσί γε αἱ καθάρσεις ὥσπερ ἀνθρώποις. Δι'
come-to-the-surface at-least the purgations just-as in-men Through
ἀκριβείας δέ, πῶς συμβαίνει ταῦτα περὶ ἕκαστον τῶν
exactness and how happen these-things about each of-the
ζῴων, γέγραπται ἐν ταῖς περὶ τὰ ζῷα ἱστορίαις. Πλείστη
animals has-been-written in the about the animals inquiries Most
δὲ γίνεται κάθαρσις τῶν ζῴων ταῖς γυναιξί, καὶ τοῖς
and occurs purgation of-the animals in-the women and in-the
ἄρρεσι πλείστη τοῦ σπέρματος πρόεσις κατὰ λόγον
males most of-the seed emission according-to proportion
τοῦ μεγέθους. Αἴτιον δ' ἡ τοῦ σώματος σύστασις ὑγρὰ
of-the size Cause and the of-the body constitution moist

καὶ θερμὴ οὖσα· ἀναγκαῖον γὰρ ἐν τῷ τοιούτῳ γίνεσθαι
and hot being necessary for in the such to-come-about
πλείστην περίττωσιν. Ἔτι δὲ οὐδὲ τὰ τοιαῦτ' ἔχει ἐν
most residue Further and not-even the such it-has in
τῷ σώματι μέρη, εἰς ἃ τρέπεται ἡ περίττωσις, ὥσπερ
the body parts into which is-turned the residue just-as
ἐν τοῖς ἄλλοις· οὐ γὰρ ἔχει οὔτε τριχῶν πλῆθος κατὰ τὸ
in the others not for it-has either of-hairs quantity on the
σῶμα, οὔτε ὀστῶν καὶ κεράτων καὶ ὀδόντων ἐκκρίσεις.
body or of-bones and of-horns and of-teeth excretions
Σημεῖον δ' ὅτι ἐν τοῖς καταμηνίοις τὸ σπέρμα ἐστίν·
Sign and that in the menses the seed is
ἅμα γάρ, ὥσπερ εἴρηται πρότερον, τοῖς ἄρρεσι γίνεται
at-once for just-as has-been-said before in-the males comes-to-be
τὸ περίττωμα τοῦτο, καὶ τοῖς θήλεσι τὰ καταμήνια
the residue this and in-the females the menses
ἐπισημαίνει ἐν τῇ αὐτῇ ἡλικίᾳ, ὡς καὶ ἅμα διισταμένων,
show-signs in the same age as also at-once being-separated
τῶν τόπων τῶν δεκτικῶν ἑκατέρου τοῦ περιττώματος·
the places the receptive of-each the residue
καὶ ἀραιουμένων ἑκατέρων τῶν πλησίον τόπων ἐξανθεῖ
and being-loosened each the nearby places blossoms
ἡ τῆς ἥβης τρίχωσις. Μελλόντων δὲ διίστασθαι οἱ
the of-the puberty hair-growth Being-about and to-be-separated the
τόποι ἀνοιδοῦσιν ὑπὸ τοῦ πνεύματος, τοῖς μὲν ἄρρεσιν
places swell-up by the breath in-the indeed males
ἐπιδηλότερον περὶ τοὺς ὄρχεις, ἐπισημαίνει δὲ καὶ περὶ τοὺς
more-evidently about the testes it-shows-signs and also about the
μαστούς, τοῖς δὲ θήλεσι περὶ τοὺς μαστοὺς μᾶλλον· ὅταν
breasts in-the and females about the breasts more when
γὰρ δύο δακτύλους ἀρθῶσι, τότε γίνεται τὰ καταμήνια
for two fingers they-be-raised then occur the menses

ταῖς πλείσταις. Ἐν ὅσοις μὲν οὖν τῶν ζωὴν ἐχόντων
in-the most In as-many-as indeed then of-the life having
μὴ κεχώρισται τὸ θῆλυ καὶ τὸ ἄρρεν, τούτοις μὲν τὸ
not has-been-separated the female and the male in-these indeed the
σπέρμα οἷον κύημά ἐστιν, λέγω δὲ κύημα τὸ πρῶτον
seed as-it-were fetus is I-mean and fetus the first
μῖγμα θήλεος καὶ ἄρρενος. Διὸ καὶ ἐξ ἑνὸς σπέρματος
mixture of-female and male Wherefore also from one seed
ἓν σῶμα γίνεται, οἷον ἑνὸς πυροῦ εἷς πυθμήν, ὥσπερ ἐξ
one body comes-to-be such-as of-one wheat-grain one stem just-as from
ἑνὸς ᾠοῦ ἓν ζῷον· τὰ γὰρ δίδυμα τῶν ᾠῶν δύο ᾠά ἐστιν.
one egg one animal the for twin of-the eggs two eggs are
Ἐν ὅσοις δὲ τῶν γενῶν διώρισται τὸ θῆλυ καὶ τὸ
In as-many-as but of-the kinds has-been-distinguished the female and the
ἄρρεν, ἐν δὲ τούτοις ἀφ' ἑνὸς σπέρματος ἐνδέχεται πολλὰ
male in and these from one seed it-is-possible many
γίνεσθαι ζῷα, ὡς διαφέροντος τῇ φύσει τοῦ σπέρματος
to-come-to-be animals as differing in-the nature of-the seed
ἐν τοῖς φυτοῖς τε καὶ ζῴοις. Σημεῖον δέ, ἀπὸ μιᾶς γὰρ
in the plants both and animals Sign and from one for
ὀχείας πλείω γίνεται ἐν τοῖς πλείω δυναμένοις γεννᾶν
copulation more come-to-be in the more being-able to-generate
ἑνός. Ἧ καὶ δῆλον ὅτι οὐκ ἀπὸ παντὸς ἔρχεται ἡ
than-one Whereby also clear that not from all comes the
γονή· οὔτε γὰρ ἂν κεχωρισμένα ἀπὸ τοῦ αὐτοῦ μέρους
semen neither for — separated from the same part
εὐθὺς ἀπεκρίνετο, οὔτε ἅμα ἐλθόντα εἰς τὰς ὑστέρας ἐκεῖ
at-once would-be-secreted nor at-once having-come into the uteri there
διεχωρίζετο· ἀλλὰ συμβαίνει ὥσπερ εὔλογον, ἐπειδὴ τὸ
would-be-separated but it-happens just-as reasonable since the
μὲν ἄρρεν παρέχεται τό τε εἶδος καὶ τὴν ἀρχὴν τῆς
indeed male provides the both form and the principle of-the

κινήσεως, τὸ δὲ θῆλυ τὸ σῶμα καὶ τὴν ὕλην, οἷον ἐν
motion the and female the body and the matter as in
τῇ τοῦ γάλακτος πήξει τὸ μὲν σῶμα τὸ γάλα ἐστίν, ὁ
the of-the milk curdling the indeed body the milk is the
δὲ ὀπός, ἡ πυτία, τὸ τὴν ἀρχὴν ἔχον τὴν συνιστᾶσαν,
but juice the rennet the the principle having the constituting
οὕτω τὸ ἀπὸ τοῦ ἄρρενος ἐν τῷ θήλει μεριζόμενον.
so the from the male in the female being-divided
Δι' ἣν δ' αἰτίαν μερίζεται ἔνθα μὲν εἰς πλείω ἔνθα
Because-of which and cause it-is-divided in-some indeed into more in-others
δ' εἰς ἐλάττω ἔνθα δὲ μοναχῶς, ἕτερος ἔσται λόγος.
and into fewer in-others and singly other will-be account
Ἀλλὰ διὰ τὸ μηθέν γε διαφέρειν τῷ εἴδει, ἀλλ'
But because-of the nothing at-least to-differ in-the form but
ἐὰν μόνον σύμμετρον ᾖ τὸ διαιρούμενον πρὸς τὴν ὕλην,
if only proportionate be the being-divided toward the matter
καὶ μήτε ἔλαττον ὥστε μὴ πέττειν μηδὲ συνιστάναι, μήτε
and neither less so-that not to-concoct nor to-constitute nor
πλεῖον ὥστε ξηρᾶναι, πλείω οὕτω γεννᾶται. Ἐκ δὲ τοῦ
more so-that to-dry more so it-is-generated From and the
συνιστάντος πρώτου, ἐξ ἑνὸς ἤδη ἓν γίνεται μόνον.
constituting first from one already one comes-to-be only
Ὅτι μὲν οὖν τὸ θῆλυ εἰς τὴν γένεσιν γονὴν μὲν οὐ
That indeed then the female to the generation semen indeed not
συμβάλλεται, συμβάλλεται δέ τι, καὶ τοῦτ' ἐστὶν ἡ τῶν
contributes contributes but something and this is the of-the
καταμηνίων σύστασις καὶ τὸ ἀνάλογον ἐν τοῖς ἀναίμοις,
menses constitution and the analogous in the bloodless
ἔκ τε τῶν εἰρημένων δῆλον καὶ κατὰ τὸν λόγον καθόλου
from both the said clear and by the account generally
σκοπουμένοις. Ἀνάγκη γὰρ εἶναι τὸ γεννῶν καὶ ἐξ οὗ, καὶ
to-those-considering Necessary for to-be the generating and from which and

τοῦτ᾽ ἂν καὶ ἓν ᾖ, τῷ γε εἴδει διαφέρειν καὶ τῷ τὸν
this even-if also one it-be in-the at-least form to-differ and by-the the
λόγον αὐτῶν εἶναι ἕτερον, ἐν δὲ τοῖς κεχωρισμένας ἔχουσι
account of-them to-be other in but those separate having
τὰς δυνάμεις καὶ τὰ σώματα καὶ τὴν φύσιν ἑτέραν εἶναι τοῦ
the powers also the bodies and the nature other to-be of-the
τε ποιοῦντος καὶ τοῦ πάσχοντος. Εἰ οὖν τὸ ἄρρεν ἐστὶν
both acting and of-the being-acted-on If then the male is
ὡς κινοῦν καὶ ποιοῦν, τὸ δὲ θῆλυ, ᾗ θῆλυ, ὡς παθητικόν,
as moving and acting the and female as female as passive
εἰς τὴν τοῦ ἄρρενος γονὴν τὸ θῆλυ ἂν συμβάλλοιτο οὐ
to the of-the male semen the female — would-contribute not
γονὴν ἀλλ᾽ ὕλην. Ὅπερ καὶ φαίνεται συμβαῖνον· κατὰ
semen but matter Which-very also appears happening by
γὰρ τὴν πρώτην ὕλην ἐστὶν ἡ τῶν καταμηνίων φύσις.
for the first matter is the of-the menses nature

XXI · HOW THE MALE CONTRIBUTES

Does the male's seed become part of the fetus or act on it as a mover? Active and passive make one thing only as the carpenter and the wood make a bed, and the facts agree: in some insects the female inserts a part into the male; a hen's wind-eggs turn fertile if she is mounted in time, and her brood takes after the later cock; the male fish's milt makes fertile only the eggs it touches. So the seed does not come from every part: the male gives the principle of motion, working the female's matter by heat, and a bird alone forms only wind-eggs.

Περὶ μὲν τούτων διωρίσθω τὸν τρόπον τοῦτον. Ἅμα δ᾽
About indeed these let-it-be-determined the way this At-once and
ἐκ τούτων φανερόν, περὶ ὧν ἐχόμενόν ἐστιν ἐπισκέψασθαι,
from these evident about which next it-is to-examine

πῶς ποτὲ συμβάλλεται εἰς τὴν γένεσιν τὸ ἄρρεν, καὶ πῶς
how ever contributes to the generation the male and how
αἴτιόν ἐστι τοῦ γινομένου τὸ σπέρμα τὸ ἀπὸ τοῦ ἄρρενος,
cause is of-the coming-to-be the seed the from the male
πότερον ὡς ἐνυπάρχον καὶ μόριον ὂν εὐθὺς τοῦ γινομένου
whether as being-present-in and part being at-once of-the coming-to-be
σώματος, μιγνύμενον τῇ ὕλῃ τῇ παρὰ τοῦ θήλεος, ἢ
body being-mixed with-the matter the from the female or
τὸ μὲν σῶμα οὐθὲν κοινωνεῖ τοῦ σπέρματος, ἡ δ' ἐν
the indeed body nothing shares of-the seed the but in
αὐτῷ δύναμις καὶ κίνησις· αὕτη μὲν γάρ ἐστιν ἡ ποιοῦσα,
it power and motion this indeed for is the acting
τὸ δὲ συνιστάμενον καὶ λαμβάνον τὴν μορφὴν τὸ τοῦ ἐν
the and being-constituted and receiving the shape the of-the in
τῷ θήλει περιττώματος λοιπόν. Κατά τε δὴ τὸν λόγον
the female residue remainder By both indeed the argument
οὕτω φαίνεται καὶ ἐπὶ τῶν ἔργων. Καθόλου τε γὰρ
so it-appears and in-the-case-of the facts Generally both for
ἐπισκοποῦσιν οὐ φαίνεται γιγνόμενον ἓν ἐκ τοῦ παθητικοῦ
to-those-considering not it-appears coming-to-be one from the passive
καὶ τοῦ ποιοῦντος ὡς ἐνυπάρχοντος ἐν τῷ γινομένῳ τοῦ
and the acting as being-present-in in the coming-to-be the
ποιοῦντος, οὐδ' ὅλως δὴ ἐκ τοῦ κινουμένου καὶ κινοῦντος.
acting nor at-all indeed from the moved and mover
Ἀλλὰ μὴν τό γε θῆλυ, ᾗ θῆλυ, παθητικόν, τὸ δ' ἄρρεν,
But truly the at-least female as female passive the but male
ᾗ ἄρρεν, ποιητικὸν καὶ ὅθεν ἡ ἀρχὴ τῆς κινήσεως.
as male active and whence the principle of-the motion
Ὥστε ἂν ληφθῇ τὰ ἄκρα ἑκατέρων, ᾗ τὸ μὲν ποιητικὸν
So-that if be-taken the extremes of-each as the indeed active
καὶ κινοῦν, τὸ δὲ παθητικὸν καὶ κινούμενον, οὐκ ἔστιν
and moving the but passive and moved not is

ἐκ τούτων τὸ γιγνόμενον ἕν, ἀλλ᾽ ἢ οὕτως ὡς ἐκ τοῦ
from these the coming-to-be one but only so as from the
τέκτονος καὶ ξύλου ἡ κλίνη, ἢ ὡς ἐκ τοῦ κηροῦ καὶ τοῦ
carpenter and wood the bed or as from the wax and the
εἴδους ἡ σφαῖρα. Δῆλον ἄρα ὅτι οὔτ᾽ ἀνάγκη ἀπιέναι
form the ball Clear then that neither necessary to-come-away
τι ἀπὸ τοῦ ἄρρενος, οὔτ᾽ εἴ τι ἀπέρχεται, διὰ
something from the male nor if something comes-away because-of
τοῦτο ἐκ τούτου ὡς ἐνυπάρχοντος τὸ γιγνόμενόν ἐστιν,
this from this as being-present-in the coming-to-be is
ἀλλ᾽ ὡς ἐκ κινήσαντος καὶ τοῦ εἴδους, ὡς καὶ ἀπὸ τῆς
but as from having-moved and the form as also from the
ἰατρικῆς ὁ ὑγιασθείς. Συμβαίνει δ᾽ ὁμολογούμενα τῷ
medicine the healed Happens and consistent-things with-the
λόγῳ καὶ ἐπὶ τῶν ἔργων. Διὰ τοῦτο γὰρ ἔνια τῶν
argument also in-the-case-of the facts Because-of this for some of-the
ἀρρένων καὶ συνδυαζομένων τοῖς θήλεσιν οὐδὲ μόριον
males even coupling with-the females not-even part
οὐθὲν φαίνεται προϊέμενα εἰς τὸ θῆλυ, ἀλλὰ τοὐναντίον
any appear emitting into the female but the-opposite
τὸ θῆλυ, εἰς τὸ ἄρρεν, ὃ συμβαίνει ἐνίοις τῶν ἐντόμων.
the female into the male which happens in-some of-the insects
Ὃ γὰρ ἐν τοῖς προϊεμένοις ἀπεργάζεται τὸ σπέρμα
What for in the emitting works the seed
ἐν τῷ θήλει, τοῦτο ἡ ἐν τῷ ζῴῳ αὐτῷ ὑγρότης καὶ
in the female this the in the animal itself moisture and
δύναμις ἀπεργάζεται, εἰσφέροντος τοῦ θήλεος τὸ δεκτικὸν
power works bringing-in the female the receptive
τοῦ περιττώματος μόριον, καὶ διὰ τοῦτο τὰ τοιαῦτα
of-the residue part and because-of this the such
τῶν ζῴων συμπλέκεται μὲν πολὺν χρόνον, διαλυθέντα δὲ
of-the animals intertwine indeed much time separated but

γεννᾷ ταχέως. Συνδεδύασται μὲν οὖν μέχρι ἂν συστήσῃ,
generate quickly Have-coupled indeed then until — it-constitute
ὥσπερ ἡ γονή· διαλυθέντα δὲ προΐεται τὸ κύημα ταχέως.
just-as the semen separated but emit the fetus quickly
Γεννᾷ γὰρ ἀτελές· σκωληκοτοκεῖ γὰρ πάντα τὰ τοιαῦτα.
It-generates for incomplete bear-larvae for all the such
Μέγιστον δὲ σημεῖον τὸ συμβαῖνον περὶ τοὺς ὄρνιθας καὶ
Greatest and sign the happening about the birds and
τὸ τῶν ἰχθύων γένος τῶν ᾠοτόκων τοῦ μήτε ἀπὸ πάντων
the of-the fish kind of-the egg-laying of-the neither from all
εἶναι τὸ σπέρμα τῶν μορίων, μήτε προΐεσθαι τὸ ἄρρεν
to-be the seed the parts nor to-emit the male
τοιοῦτόν τι μόριον ὃ ἔσται ἐνυπάρχον τῷ γεννηθέντι,
such some part which will-be being-present-in in-the generated
ἀλλὰ μόνον τῇ δυνάμει τῇ ἐν τῇ γονῇ ζῳοποιεῖν, ὥσπερ
but only by-the power the in the semen to-make-alive just-as
εἴπομεν ἐπὶ τῶν ἐντόμων, ἐν οἷς τὸ θῆλυ προΐεται
we-said in-the-case-of the insects in which the female emits
εἰς τὸ ἄρρεν. Ἐάν τε γὰρ ὑπηνέμια τύχῃ κύουσα ἡ
into the male If both for wind-eggs happen gestating the
ὄρνις, ἐὰν μετὰ ταῦτα ὀχεύηται μήπω μεταβεβληκότος
bird if after these-things she-be-mounted not-yet having-changed
τοῦ ᾠοῦ ἐκ τοῦ ὠχρὸν ὅλον εἶναι εἰς τὸ λευκαίνεσθαι,
the egg from the yellow whole to-be into the to-become-white
γόνιμα γίνεται ἀντὶ ὑπηνεμίων· ἐάν τε ὑφ' ἑτέρου
fertile they-become instead-of wind-eggs if both by another
ὠχευμένη καὶ ἔτι ὠχροῦ ὄντος, κατὰ τὸν ὕστερον
having-been-mounted and still yellow being according-to the later
ὀχεύσαντα τὸ γένος ἀποβαίνει πᾶν τὸ τῶν νεοττῶν.
mounting-one the brood turns-out all the of-the chicks
Διὸ ἔνιοι τοῦτον τὸν τρόπον τῶν περὶ τὰς ὄρνιθας
Wherefore some this the way of-the about the birds

τὰς γενναίας σπουδαζόντων ποιοῦσι, μεταβάλλοντες τὰ
the well-bred taking-pains do changing the
πρῶτα ὀχεῖα καὶ τὰ ὕστερα, ὡς οὐ συμμιγνύμενον καὶ
first mounters and the later as not being-mixed and
ἐννυπάρχον, οὐδ' ἀπὸ παντὸς ἐλθὸν τὸ σπέρμα.
being-present-in nor from all having-come the seed
Ἀπ' ἀμφοῖν γὰρ ἂν ἦλθεν, ὥστ' εἶχεν ἂν δὶς
From both for — it-would-have-come so-that it-would-have — twice
ταὐτὰ μέρη. Ἀλλὰ τῇ δυνάμει τὸ τοῦ ἄρρενος σπέρμα
the-same parts But by-the power the of-the male seed
τὴν ἐν τῷ θήλει ὕλην καὶ τροφὴν ποιάν τινα κατασκευάζει.
the in the female matter and nourishment of-a-sort some prepares
Τοῦτο γὰρ ἐνδέχεται ποιεῖν τὸ ὕστερον ἐπεισελθὸν ἐκ τοῦ
This for it-is-possible to-do the later having-come-in from the
θερμᾶναι καὶ πέψαι· λαμβάνει γὰρ τροφὴν τὸ ᾠὸν ἕως
to-heat and to-concoct takes for nourishment the egg until
ἂν αὐξάνηται. Τὸ δ' αὐτὸ συμβαίνει καὶ περὶ τὴν τῶν
— it-grow The and same happens also about the of-the
ἰχθύων γένεσιν τῶν ᾠοτοκουμένων. Ὅταν γὰρ ἀποτέκῃ
fish generation of-the egg-laying When for she-lay
τὰ ᾠὰ ἡ θήλεια, ὁ ἄρρην ἐπιρραίνει τὸν θορόν· καὶ
the eggs the female the male sprinkles-on the milt and
ὧν μὲν ἂν ἐφάψηται, γόνιμα ταῦτα γίνεται τὰ ᾠά, ὧν
which indeed — it-touch fertile these become the eggs which
δ' ἂν μή, ἄγονα, ὡς οὐκ εἰς τὸ ποσὸν συμβαλλομένου
but — not infertile as not to the quantity contributing
τοῖς ζῴοις τοῦ ἄρρενος, ἀλλ' εἰς τὸ ποιόν. Ὅτι μὲν οὖν
to-the animals the male but to the quality That indeed then
οὔτ' ἀπὸ παντὸς ἀπέρχεται τὸ σπέρμα τοῖς προϊεμένοις
neither from all comes-away the seed in-the emitting
σπέρμα τῶν ζῴων, οὔτε τὸ θῆλυ πρὸς τὴν γένεσιν οὕτω
seed of-the animals nor the female to the generation so

συμβάλλεται τοῖς συνισταμένοις ὡς τὸ ἄρρεν, ἀλλὰ τὸ
contributes to-the being-constituted as the male but the
μὲν ἄρρεν ἀρχὴν κινήσεως, τὸ δὲ θῆλυ τὴν ὕλην, δῆλον
indeed male principle of-motion the but female the matter clear
ἐκ τῶν εἰρημένων. Διὰ γὰρ τοῦτο οὔτ' αὐτὸ καθ' αὑτὸ
from the said-things Because-of for this neither itself by itself
γεννᾷ τὸ θῆλυ· δεῖται γὰρ ἀρχῆς καὶ τοῦ κινήσοντος καὶ
generates the female it-needs for principle and of-the going-to-move and
διοριοῦντος. Ἀλλ' ἐνίοις γε τῶν ζῴων, οἷον τοῖς ὄρνισι,
going-to-determine But in-some at-least of-the animals such-as in-the birds
μέχρι τινὸς ἡ φύσις δύναται γεννᾶν· αὗται γὰρ συνιστᾶσι
up-to some-point the nature can to-generate these for constitute
μέν, ἀτελῆ δὲ συνιστᾶσι τὰ καλούμενα ὑπηνέμια ᾠά.
indeed incomplete but they-constitute the so-called wind eggs

XXII · GENERATION IN THE FEMALE

Generation happens in the female because the matter it works is there, as the carpenter works at the wood and the potter at the clay. Not every male emits seed, and where one does, the seed is no part of the fetus: nothing passes from the carpenter into the timber, but the form comes from the soul in him through the motion of his hands, and the male's nature uses the seed as its tool. Where the female inserts a part into the male, such males are too weak for nature to work through anything else, so it shapes the fetus with its own parts, like a modeler, not a carpenter.

Ἥ τε γένεσις ἐν τῷ θήλει συμβαίνει τῶν γινομένων, ἀλλ'
The both generation in the female happens of-the coming-to-be but
οὐκ εἰς τὸ ἄρρεν· οὔτ' αὖ τὸ ἄρρεν προΐεται τὴν γονὴν
not into the male neither again the male emits the semen
οὔτε τὸ θῆλυ, ἀλλ' ἄμφω εἰς τὸ θῆλυ συμβάλλονται τὸ
nor the female but both into the female contribute the

παρ᾽ αὐτῶν γιγνόμενον, διὰ τὸ ἐν τῷ θήλει εἶναι τὴν
from them coming-to-be because-of the in the female to-be the
ὕλην ἐξ ἧς ἐστὶ τὸ δημιουργούμενον. Καὶ εὐθὺς τὴν
matter from which is the being-fashioned And at-once the-one
μὲν ἀθρόον ὑπάρχειν ἀναγκαῖον ἐξ ἧς συνίσταται τὸ
indeed all-together to-be-present necessary from which is-constituted the
κύημα τὸ πρῶτον, τὴν δ᾽ ἐπιγίνεσθαι δεῖ τῆς ὕλης
fetus the first the-other but to-come-in-addition must of-the matter
ἵν᾽ αὐξάνηται τὸ κυόμενον. Ὥστ᾽ ἀνάγκη ἐν τῷ θήλει
so-that grow the being-gestated So-that necessary in the female
ὑπάρχειν τὸν τόκον· καὶ γὰρ πρὸς τῷ ξύλῳ ὁ τέκτων καὶ
to-be-present the birth and for at the wood the carpenter and
πρὸς τῷ πηλῷ ὁ κεραμεύς, καὶ ὅλως πᾶσα ἡ ἐργασία
at the clay the potter and generally all the working
καὶ ἡ κίνησις ἡ ἐσχάτη πρὸς τῇ ὕλῃ, οἷον ἡ οἰκοδόμησις
and the motion the last at the matter such-as the building
ἐν τοῖς οἰκοδομουμένοις. Λάβοι δ᾽ ἄν τις ἐκ τούτων
in the being-built-things Could-take and — someone from these
καὶ τὸ ἄρρεν πῶς συμβάλλεται πρὸς τὴν γένεσιν· οὐδὲ
also the male how contributes to the generation not-even
γὰρ τὸ ἄρρεν ἅπαν προΐεται σπέρμα, ὅσα τε προΐεται
for the male every emits seed as-many-as both emit
τῶν ἀρρένων, οὐθὲν μόριον τοῦτ᾽ ἐστὶ τοῦ γιγνομένου
of-the males no part this is of-the coming-to-be
κυήματος, ὥσπερ οὐδ᾽ ἀπὸ τοῦ τέκτονος πρὸς τὴν τῶν
fetus just-as not-even from the carpenter to the of-the
ξύλων ὕλην οὔτ᾽ ἀπέρχεται οὐθέν, οὔτε μόριον οὐθέν ἐστιν
timbers matter either comes-away anything or part any is
ἐν τῷ γιγνομένῳ τῆς τεκτονικῆς, ἀλλ᾽ ἡ μορφὴ καὶ τὸ
in the coming-to-be of-the carpentry but the shape and the
εἶδος ἀπ᾽ ἐκείνου ἐγγίνεται διὰ τῆς κινήσεως ἐν τῇ ὕλῃ,
form from that come-to-be-in through the motion in the matter

καὶ ἡ μὲν ψυχὴ ἐν ᾗ τὸ εἶδος καὶ ἡ ἐπιστήμη κινοῦσι
and the indeed soul in which the form and the knowledge move
τὰς χεῖρας ἤ τι μόριον ἕτερον ποιάν τινα κίνησιν,
the hands or some part other of-a-sort some motion
ἑτέραν μὲν ἀφ' ὧν τὸ γιγνόμενον ἕτερον, τὴν αὐτὴν δὲ
different indeed from which the coming-to-be different the same but
ἀφ' ὧν τὸ αὐτό, αἱ δὲ χεῖρες καὶ τὰ ὄργανα τὴν ὕλην.
from which the same the and hands and the instruments the matter
Ὁμοίως δὲ καὶ ἡ φύσις ἡ ἐν τῷ ἄρρενι τῶν σπέρμα
Likewise and also the nature the in the male of-the seed
προϊεμένων χρῆται τῷ σπέρματι ὡς ὀργάνῳ καὶ ἔχοντι
emitting uses the seed as instrument and having
κίνησιν ἐνεργείᾳ, ὥσπερ ἐν τοῖς κατὰ τέχνην γινομένοις
motion in-actuality just-as in the by art coming-to-be
τὰ ὄργανα κινεῖται· ἐν ἐκείνοις γάρ πως ἡ κίνησις τῆς
the instruments are-moved in those for somehow the motion of-the
τέχνης. Ὅσα μὲν οὖν προΐεται σπέρμα, συμβάλλεται
art As-many-as indeed then emit seed contribute
τοῦτον τὸν τρόπον εἰς τὴν γένεσιν· ὅσα δὲ μὴ
this the way to the generation as-many-as but not
προΐεται σπέρμα, ἀλλ' ἐναφίησι τὸ θῆλυ εἰς τὸ ἄρρεν
emit seed but insert the female into the male
τῶν αὐτοῦ τι μορίων, ὅμοιον ἔοικε ποιοῦντι ὥσπερ ἂν
of-the its-own some parts like seems to-one-doing just-as —
εἰ τὴν ὕλην κομίσειέ τις πρὸς τὸν δημιουργόν. Δι'
if the matter should-bring someone to the craftsman Because-of
ἀσθένειαν γὰρ τῶν τοιούτων ἀρρένων οὐθὲν δι' ἑτέρων
weakness for of-the such males nothing through others
οἷά τε ποιεῖν ἡ φύσις, ἀλλὰ μόλις αὐτῆς προσεδρευούσης
able — to-do the nature but hardly it sitting-beside
ἰσχύουσιν αἱ κινήσεις, καὶ ἔοικε τοῖς πλάττουσιν, οὐ τοῖς
are-strong the motions and it-resembles the molders not the

τεκταινομένοις· οὐ γὰρ δι᾽ ἑτέρου θιγγάνουσα δημιουργεῖ
carpenters not for through another touching it-fashions
τὸ συνιστάμενον, ἀλλ᾽ αὐτὴ τοῖς αὑτῆς μορίοις.
the being-constituted but itself with-the its-own parts

XXIII · ANIMALS AND PLANTS

In the animals that move about the female is separate from the male, though one in species; in plants the two powers are mixed, so plants generate from themselves and emit not semen but a fetus, the so-called seeds, as Empedocles says the tall trees lay eggs. As part of an egg becomes the animal and the rest is nourishment, part of a seed becomes the plant and the rest feeds its shoot and root. Animals differ from the merely living by perception, a kind of knowledge, so male and female in them are separate and join, when they generate, as though they were a plant; the testaceans, between the two, do the work of neither.

Ἐν μὲν οὖν τοῖς ζῴοις πᾶσι τοῖς πορευτικοῖς
In indeed then the animals all the able-to-move-about
κεχώρισται τὸ θῆλυ τοῦ ἄρρενος, καὶ ἔστιν ἕτερον
has-been-separated the female from-the male and is other
ζῷον θῆλυ καὶ ἕτερον ἄρρεν, τῷ δὲ εἴδει ταὐτόν,
animal female and other male in-the but form the-same
οἷον ἄνθρωπος ἀμφότερα· ἐν δὲ τοῖς φυτοῖς μεμιγμέναι
such-as man both in but the plants mixed
αὗται αἱ δυνάμεις εἰσί, καὶ οὐ κεχώρισται τὸ
these the powers are and not has-been-separated the
θῆλυ τοῦ ἄρρενος. Διὸ καὶ γεννᾷ αὐτὰ ἐξ
female from-the male Wherefore also generate they from
αὑτῶν, καὶ προΐεται οὐ γονὴν ἀλλὰ κύημα τὰ
themselves and emit not semen but fetus the

καλούμενα σπέρματα. Καὶ τοῦτο καλῶς λέγει Ἐμπεδοκλῆς
so-called seeds And this well says Empedocles
ποιήσας
having-written

οὕτω δ' ᾠοτοκεῖ μακρὰ δένδρεα πρῶτον ἐλαίας.
so and lay-eggs tall trees first olives

Τό τε γὰρ ᾠὸν κύημά ἐστι, καὶ ἔκ τινος αὐτοῦ
The both for egg fetus is and from some of-it
γίγνεται τὸ ζῷον, τὸ δὲ λοιπὸν τροφή, καὶ ἐκ τοῦ
comes-to-be the animal the but rest nourishment also from the
σπέρματος καὶ ἐκ μέρους γίγνεται τὸ φυόμενον, τὸ
seed and from part comes-to-be the growing the
δὲ λοιπὸν τροφὴ γίγνεται τῷ βλαστῷ καὶ τῇ
but rest nourishment becomes for-the shoot and for-the
ῥίζῃ τῇ πρώτῃ. Τρόπον δέ τινα ταῦτα συμβαίνει καὶ
root the first Way and some these-things happen also
ἐν τοῖς κεχωρισμένον ἔχουσι ζῴοις τὸ θῆλυ καὶ τὸ
in the separated having animals the female and the
ἄρρεν. Ὅταν γὰρ δεήσῃ γεννᾶν, γίνεται ἀχώριστον,
male When for it-be-needful to-generate it-becomes inseparable
ὥσπερ ἐν τοῖς φυτοῖς, καὶ βούλεται ἡ φύσις αὐτῶν ἓν
just-as in the plants and wishes the nature of-them one
γίνεσθαι· ὅπερ ἐμφαίνεται κατὰ τὴν ὄψιν μιγνυμένων
to-become which-very appears to the sight being-mixed
καὶ συνδυαζομένων, ἔν τι ζῷον γίγνεσθαι ἐξ ἀμφοῖν.
and coupling one some animal to-become from both
Καὶ τὰ μὲν μὴ προϊέμενα σπέρμα πολὺν χρόνον
And the-ones indeed not emitting seed much time
συμπεπλέχθαι πέφυκεν, ἕως ἂν συστήσῃ τὸ κύημα,
to-have-been-intertwined are-natural until — it-constitute the fetus

οἷον τὰ συνδυαζόμενα τῶν ἐντόμων· τὰ δ', ἕως
such-as the coupling of-the insects the-others but until
ἂν ἀποπέμψῃ τι τῶν ἐπεισάκτων αὐτοῦ μορίων, ὃ
— it-send-off some of-the imported its-own parts which
συστήσει τὸ κύημα ἐν πλείονι χρόνῳ, οἷον ἐπὶ τῶν
will-constitute the fetus in more time such-as in-the-case-of the
ἐναίμων. Τὰ μὲν γὰρ ἡμέρας τι μόριον συνέχεται, ἡ
blooded The-ones indeed for of-a-day some part are-held-together the
δὲ γονὴ ἐν ἡμέραις συνίστησι πλείοσιν· προϊέμενα δὲ τὸ
but semen in days constitutes more emitting but the
τοιοῦτον ἀπολύεται. Καὶ ἀτεχνῶς ἔοικε τὰ ζῷα ὥσπερ
such they-are-released And simply resemble the animals just-as
φυτὰ εἶναι διαιρετά, οἷον εἴ τις κἀκεῖνα, ὅτε σπέρμα
plants to-be divided as if someone also-those when seed
ἐξενέγκειεν, διαλύσειε καὶ χωρίσειεν εἰς τὸ ἐνυπάρχον
they-had-brought-forth should-take-apart and should-separate into the being-present-in
θῆλυ καὶ ἄρρεν.
female and male
Καὶ ταῦτα πάντα εὐλόγως ἡ φύσις δημιουργεῖ. Τῆς
And these all reasonably the nature fashions Of-the
μὲν γὰρ τῶν φυτῶν οὐσίας οὐθέν ἐστιν ἄλλο ἔργον
indeed for of-the plants substance no is other work
οὐδὲ πρᾶξις οὐδεμία πλὴν ἡ τοῦ σπέρματος γένεσις,
nor action any except the of-the seed generation
ὥστ' ἐπεὶ τοῦτο διὰ τοῦ θήλεος γίνεται καὶ τοῦ
so-that since this through the female comes-to-be and the
ἄρρενος συνδεδυασμένων, μίξασα ταῦτα διέθηκε μετ'
male coupled having-mixed these it-disposed with
ἀλλήλων· διὸ ἐν τοῖς φυτοῖς ἀχώριστον τὸ θῆλυ
one-another wherefore in the plants inseparable the female
καὶ τὸ ἄρρεν. Ἀλλὰ περὶ μὲν φυτῶν ἐν ἑτέροις
and the male But about indeed plants in other-works

ἐπέσκεπται, τοῦ δὲ ζῴου οὐ μόνον τὸ γεννῆσαι
it-has-been-examined of-the but animal not only the to-generate
ἔργον (τοῦτο μὲν γὰρ κοινὸν τῶν ζώντων πάντων),
work this indeed for common of-the living all
ἀλλὰ καὶ γνώσεώς τινος πάντα μετέχουσι, τὰ μὲν
but also of-knowledge some all share the-ones indeed
πλείονος, τὰ δ' ἐλάττονος, τὰ δὲ πάμπαν μικρᾶς.
of-more the-others but of-less the-others and altogether of-small
Αἴσθησιν γὰρ ἔχουσιν, ἡ δ' αἴσθησις γνῶσίς τις. Ταύτης
Perception for they-have the and perception knowledge some Of-this
δὲ τὸ τίμιον καὶ ἄτιμον πολὺ διαφέρει σκοποῦσι
and the honorable and dishonorable much differs to-those-considering
πρὸς φρόνησιν καὶ πρὸς τὸ τῶν ἀψύχων γένος.
in-relation-to understanding and in-relation-to the of-the soulless kind
Πρὸς μὲν γὰρ τὸ φρονεῖν ὥσπερ οὐδὲν εἶναι δοκεῖ
In-relation-to indeed for the to-understand as-it-were nothing to-be seems
τὸ κοινωνεῖν ἁφῆς καὶ γεύσεως μόνον, πρὸς δὲ
the to-share of-touch and of-taste only in-relation-to but
ἀναισθησίαν βέλτιστον· ἀγαπητὸν γὰρ ἂν δόξειε καὶ
insensibility best desirable for — would-seem also
ταύτης τυχεῖν τῆς γνώσεως, ἀλλὰ μὴ κεῖσθαι τεθνεὸς καὶ
this to-obtain the knowledge but not to-lie dead and
μὴ ὄν.
not being
Διαφέρει δ' αἰσθήσει τὰ ζῷα τῶν ζώντων μόνον.
Differ and by-perception the animals from-the living only
Ἐπεὶ δ' ἀνάγκη καὶ ζῆν, ἐὰν ᾖ ζῷον, ὅταν δεήσῃ
Since and necessary also to-live if it-be animal when it-be-needful
ἀποτελεῖν τὸ τοῦ ζῶντος ἔργον, τότε συνδυάζεται καὶ
to-accomplish the of-the living work then it-couples and
μίγνυται καὶ γίγνεται ὡσπερανεὶ φυτόν, καθάπερ εἴπομεν.
is-mixed and becomes as-it-were plant just-as we-said

Τὰ δ᾽ ὀστρακόδερμα τῶν ζῴων μεταξὺ ὄντα τῶν ζῴων
The but testaceans of-the animals between being the animals
καὶ τῶν φυτῶν, ὡς ἐν ἀμφοτέροις ὄντα τοῖς γένεσιν,
and the plants as in both being the kinds
οὐδετέρων ποιεῖ τὸ ἔργον· ὡς μὲν γὰρ φυτὸν ὂν οὐκ
of-neither does the work as indeed for plant being not
ἔχει τὸ θῆλυ καὶ τὸ ἄρρεν καὶ οὐ γεννᾷ εἰς ἕτερον, ὡς δὲ
it-has the female and the male and not generates into another as but
ζῷον οὐ φέρει ἐξ αὐτοῦ καρπὸν ὥσπερ τὰ φυτά, ἀλλὰ
animal not bears from itself fruit just-as the plants but
συνίσταται καὶ γεννᾶται ἔκ τινος συστάσεως γεοειδοῦς
is-constituted and is-generated from some constitution earthy
καὶ ὑγρᾶς. Ἀλλὰ περὶ μὲν τῆς τούτων γενέσεως ὕστερον
and moist But about indeed the of-these generation later
λεκτέον.
must-be-said

BOOK II

I · WHY MALE AND FEMALE

Male and female exist because the eternal is better than the perishable, eternal only in its kind; so generation exists, and for it the sexes, the mover kept apart from matter where possible. Heat and moisture, not feet, rank the animals: the hotter and moister bear live, the hotter but drier lay complete eggs, the colder but moister selachians bear live from eggs inside, the colder and drier lay incomplete eggs, the coldest larvae. The parts form in turn, not at once as in Orpheus' verses, by a motion from the begetter, as in an automaton, not by a part already in the seed, which has soul in potential; the heart, growth's principle, forms first.

Τὸ δὲ θῆλυ καὶ τὸ ἄρρεν ὅτι μέν εἰσιν ἀρχαὶ γενέσεως
The and female and the male that indeed are principles of-generation
εἴρηται πρότερον, καὶ τίς ἡ δύναμις καὶ ὁ λόγος
it-has-been-said before and what the power and the account
τῆς οὐσίας αὐτῶν· διὰ τί δὲ γίνεται καὶ ἔστι τὸ
of-the substance of-them because-of what and comes-to-be and is the-one
μὲν θῆλυ τὸ δ' ἄρρεν, ὡς μὲν ἐξ ἀνάγκης καὶ τοῦ
indeed female the-other and male as indeed from necessity and of-the
πρώτου κινοῦντος καὶ ὁποίας ὕλης, προϊόντα πειρᾶσθαι
first mover and of-what-sort matter proceeding to-try
δεῖ φράζειν τὸν λόγον, ὡς δὲ διὰ τὸ βέλτιον καὶ τὴν
one-must to-explain the account as but because-of the better and the
αἰτίαν τὴν ἕνεκά τινος, ἄνωθεν ἔχει τὴν ἀρχήν. Ἐπεὶ
cause the for-the-sake-of something from-above it-has the principle Since
γάρ ἐστι τὰ μὲν ἀΐδια καὶ θεῖα τῶν ὄντων, τὰ δ'
for are the-ones indeed eternal and divine of-the beings the-others and
ἐνδεχόμενα καὶ εἶναι καὶ μὴ εἶναι, τὸ δὲ καλὸν καὶ τὸ θεῖον
admitting both to-be and not to-be the and beautiful and the divine
αἴτιον ἀεὶ κατὰ τὴν αὑτοῦ φύσιν τοῦ βελτίονος ἐν τοῖς
cause always according-to the its-own nature of-the better in the

ἐνδεχομένοις, τὸ δὲ μὴ ἀΐδιον ἐνδεχόμενόν ἐστι καὶ εἶναι καὶ
admitting the and not eternal admitting is both to-be and
μεταλαμβάνειν καὶ τοῦ χείρονος καὶ τοῦ βελτίονος, βέλτιον
to-partake both of-the worse and of-the better better
δὲ ψυχὴ μὲν σώματος, τὸ δ' ἔμψυχον τοῦ ἀψύχου διὰ
and soul indeed than-body the and ensouled than-the soulless because-of
τὴν ψυχήν, καὶ τὸ εἶναι τοῦ μὴ εἶναι καὶ τὸ ζῆν τοῦ
the soul and the being than-the not being and the living than-the
μὴ ζῆν, διὰ ταύτας τὰς αἰτίας γένεσις ζῴων ἐστίν.
not living because-of these the causes generation of-animals is
Ἐπεὶ γὰρ ἀδύνατος ἡ φύσις τοῦ τοιούτου γένους ἀΐδιος
Since for impossible the nature of-the such kind eternal
εἶναι, καθ' ὃν ἐνδέχεται τρόπον, κατὰ τοῦτόν ἐστιν ἀΐδιον
to-be in which is-possible way in this is eternal
τὸ γινόμενον. Ἀριθμῷ μὲν οὖν ἀδύνατον (ἡ γὰρ οὐσία τῶν
the coming-to-be In-number indeed then impossible the for substance of-the
ὄντων ἐν τῷ καθ' ἕκαστον· τοιοῦτον δ' εἴπερ ἦν, ἀΐδιον ἂν
beings in the by each such but if-indeed it-were eternal —
ἦν), εἴδει δ' ἐνδέχεται. Διὸ γένος ἀεὶ ἀνθρώπων καὶ
it-would-be in-form but it-is-possible Wherefore kind always of-men and
ζῴων ἐστὶ καὶ φυτῶν. Ἐπεὶ δὲ τούτων ἀρχὴ τὸ θῆλυ καὶ τὸ
of-animals is and of-plants Since and of-these principle the female and the
ἄρρεν, ἕνεκα τῆς γενέσεως ἂν εἴη τὸ θῆλυ καὶ τὸ ἄρρεν
male for-the-sake-of the generation — would-be the female and the male
ἐν τοῖς οὖσιν. Βελτίονος δὲ καὶ θειοτέρας τὴν φύσιν οὔσης
in the beings Better and and more-divine in-the nature being
τῆς αἰτίας τῆς κινούσης πρώτης, ᾗ ὁ λόγος ὑπάρχει
the cause the moving first in-which the account belongs
καὶ τὸ εἶδος τῆς ὕλης, βέλτιον καὶ τὸ κεχωρίσθαι τὸ
and the form than-the matter better also the to-have-been-separated the
κρεῖττον τοῦ χείρονος. Διὰ τοῦτ' ἐν ὅσοις ἐνδέχεται
stronger from-the worse Because-of this in as-many-as it-is-possible

καὶ καθ' ὅσον ἐνδέχεται, κεχώρισται τοῦ θήλεος τὸ
and by as-much-as it-is-possible has-been-separated from-the female the
ἄρρεν. Βέλτιον γὰρ καὶ θειότερον ἡ ἀρχὴ τῆς κινήσεως,
male Better for and more-divine the principle of-the motion
ᾗ ἄρρεν ὑπάρχει τοῖς γινομένοις· ὕλη δὲ τὸ ᾗ θῆλυ.
insofar-as male belongs to-the coming-to-be matter and the insofar-as female
Συνέρχεται δὲ καὶ μίγνυται πρὸς τὴν ἐργασίαν τῆς γενέσεως
Comes-together and and is-mixed for the work of-the generation
τῷ θήλει τὸ ἄρρεν· αὕτη γὰρ κοινὴ ἀμφοτέροις. Κατὰ
with-the female the male this for common to-both In-respect-of
μὲν οὖν τὸ μετέχειν τοῦ θήλεος καὶ τοῦ ἄρρενος ζῇ,
indeed then the to-share of-the female and of-the male it-lives
διὸ καὶ τὰ φυτὰ μετέχει ζωῆς· κατὰ δὲ τὴν αἴσθησιν
wherefore also the plants share of-life in-respect-of but the perception
τὸ τῶν ζῴων ἐστὶ γένος. Τούτων δὲ σχεδὸν ἐν πᾶσι τοῖς
the of-the animals is kind Of-these and nearly in all the
πορευτικοῖς κεχώρισται τὸ θῆλυ καὶ τὸ ἄρρεν διὰ τὰς
able-to-move-about has-been-separated the female and the male because-of the
εἰρημένας αἰτίας· καὶ τούτων τὰ μέν, ὥσπερ ἐλέχθη,
said causes and of-these the-ones indeed just-as was-said
προΐεται σπέρμα, τὰ δ' οὐ προΐεται ἐν τῷ συνδυασμῷ.
emit seed the-others but not emit in the coupling
Τούτου δ' αἴτιον ὅτι τὰ τιμιώτερα καὶ αὐταρκέστερα τὴν
Of-this and cause that the more-honorable and more-self-sufficient in-the
φύσιν ἐστίν, ὥστε μεγέθους μετειληφέναι. Τοῦτο δ' οὐκ ἄνευ
nature are so-that of-size to-have-taken-share This and not without
θερμότητος ψυχικῆς· ἀνάγκη γὰρ τὸ μεῖζον ὑπὸ πλείονος
heat of-soul necessary for the larger by more
κινεῖσθαι δυνάμεως, τὸ δὲ θερμὸν κινητικόν. Διόπερ, ὡς
to-be-moved power the and hot motive Wherefore as
ἐπὶ τὸ πᾶν βλέψαντας εἰπεῖν, τὰ ἔναιμα μείζω τῶν
for the whole having-looked to-say the blooded larger than-the

ἀναίμων καὶ τὰ πορευτικὰ τῶν μονίμων ζῴων· ἅπερ
bloodless and the able-to-move-about than-the stationary animals which-very
προΐεται σπέρμα διὰ τὴν θερμότητα καὶ τὸ μέγεθος.
emit seed because-of the heat and the size
Καὶ περὶ μὲν ἄρρενος καὶ θήλεος, δι' ἣν αἰτίαν ἐστὶν
And about indeed male and female because-of which cause is
ἑκάτερον, εἴρηται. Τῶν δὲ ζῴων τὰ μὲν τελεσιουργεῖ
each it-has-been-said Of-the and animals the-ones indeed complete
καὶ ἐκπέμπει θύραζε ὅμοιον ἑαυτῷ, οἷον ὅσα ζῳοτοκεῖ
and send-forth outside like to-itself such-as as-many-as bear-live
εἰς τοὐμφανές, τὰ δὲ ἀδιάρθρωτον ἐκτίκτει καὶ οὐκ
into the-open the-others and unarticulated bring-forth and not
ἀπειληφὸς τὴν αὑτοῦ μορφήν. Τῶν δὲ τοιούτων τὰ μὲν
having-taken the its-own shape Of-the and such the-ones indeed
ἔναιμα ᾠοτοκεῖ, τὰ δ' ἄναιμα σκωληκοτοκεῖ. Διαφέρει
blooded lay-eggs the-others and bloodless bear-larvae Differs
δ' ᾠὸν καὶ σκώληξ· ᾠὸν μὲν γάρ ἐστιν ἐξ οὗ γίνεται
and egg and larva egg indeed for is from which comes-to-be
τὸ γινόμενον ἐκ μέρους, τὸ δὲ λοιπόν ἐστι τροφὴ τῷ
the coming-to-be from part the but rest is nourishment for-the
γινομένῳ, σκώληξ δ' ἐξ οὗ τὸ γινόμενον ὅλου ὅλον
coming-to-be larva but from which the coming-to-be whole whole
γίνεται. Τῶν δὲ εἰς τὸ φανερὸν ὅμοιον ἀποτελούντων ζῷον
comes-to-be Of-the and into the open like completing animal
καὶ ζῳοτοκούντων τὰ μὲν εὐθὺς ἐν αὑτοῖς ζῳοτοκεῖ,
and bearing-live the-ones indeed at-once in themselves bear-live
οἷον ἄνθρωπος καὶ ἵππος καὶ βοῦς καὶ τῶν θαλαττίων
such-as man and horse and ox and of-the sea-animals
δὲ δελφὶς καὶ τἆλλα τὰ τοιαῦτα, τὰ δ' ἐν αὑτοῖς
and dolphin and the-other the such the-others but in themselves
ᾠοτοκήσαντα πρῶτον οὕτω ζῳοτοκεῖ θύραζε, οἷον τὰ
having-laid-eggs first so bear-live outside such-as the

σελάχη καλούμενα. Τῶν δ' ᾠοτοκούντων τὰ μὲν τέλειον
selachians so-called Of-the but egg-laying the-ones indeed complete
προΐεται τὸ ᾠόν, οἷον ὄρνιθες καὶ ὅσα τετράποδα
emit the egg such-as birds and as-many-as quadrupeds
ᾠοτοκεῖ καὶ ὅσα ἄποδα, οἷον σαῦραι καὶ χελῶναι καὶ
lay-eggs and as-many-as footless such-as lizards and tortoises and
τῶν ὄφεων τὸ πλεῖστον γένος (τὰ γὰρ τούτων ᾠὰ ὅταν
of-the snakes the most kind the for of-these eggs when
ἐξέλθῃ, οὐκέτι λαμβάνει αὔξησιν), τὰ δ' ἀτελῆ,
it-has-gone-out no-longer takes growth the-others but incomplete
οἷον οἵ τ' ἰχθύες καὶ τὰ μαλακόστρακα καὶ τὰ μαλάκια
such-as the both fish and the crustaceans and the cephalopods
καλούμενα· τούτων γὰρ τὰ ᾠὰ αὐξάνεται ἐξελθόντα.
so-called of-these for the eggs grow having-gone-out
Πάντα δὲ τὰ ζῳοτοκοῦντα ἢ ᾠοτοκοῦντα ἔναιμά ἐστιν,
All and the live-bearing or egg-laying blooded are
καὶ τὰ ἔναιμα ἢ ζῳοτοκεῖ ἢ ᾠοτοκεῖ, ὅσα μὴ ὅλως
and the blooded either bear-live or lay-eggs as-many-as not altogether
ἄγονά ἐστιν. Τῶν δ' ἀναίμων τὰ ἔντομα σκωληκοτοκεῖ,
infertile are Of-the and bloodless the insects bear-larvae
ὅσα ἢ ἐκ συνδυασμοῦ γίνεται ἢ αὐτὰ συνδυάζεται.
as-many-as either from coupling come-to-be or themselves couple
Ἔστι γὰρ ἔνια τοιαῦτα τῶν ἐντόμων, ἃ γίνεται μὲν
There-are for some such of-the insects which come-to-be indeed
αὐτόματα, ἔστι δὲ θήλεα καὶ ἄρρενα, καὶ ἐκ συνδυαζομένων
spontaneously are but female and male and from coupling
γίνεταί τι αὐτῶν, ἀτελὲς μέντοι τὸ γιγνόμενον· ἡ
comes-to-be something of-them incomplete however the coming-to-be the
δ' αἰτία εἴρηται πρότερον ἐν ἑτέροις. Συμβαίνει δὲ
and cause has-been-said before in other-works Happens and
πολλὴ ἐπάλλαξις τοῖς γένεσιν. Οὔτε γὰρ τὰ δίποδα πάντα
much overlapping in-the kinds Neither for the two-footed all

ζῳοτοκεῖ (οἱ γὰρ ὄρνιθες ᾠοτοκοῦσιν) οὔτ' ᾠοτοκεῖ πάντα
bear-live the for birds lay-eggs nor lay-eggs all
(ὁ γὰρ ἄνθρωπος ζῳοτοκεῖ), οὔτε τὰ τετράποδα πάντα
the for man bears-live nor the quadrupeds all
ᾠοτοκεῖ (ἵππος γὰρ καὶ βοῦς καὶ ἄλλα μυρία ζῳοτοκεῖ)
lay-eggs horse for and ox and other countless bear-live
οὔτε ζῳοτοκεῖ πάντα (σαῦραι γὰρ καὶ κροκόδειλοι καὶ
nor bear-live all lizards for and crocodiles and
ἄλλα πολλὰ ᾠοτοκοῦσιν). Οὐδ' ἐν τῷ πόδας ἔχειν ἢ μὴ
other many lay-eggs Nor in the feet to-have or not
ἔχειν διαφέρει· καὶ γὰρ ἄποδα ζῳοτοκεῖ, οἷον οἱ ἔχεις καὶ
to-have it-differs and for footless bear-live such-as the vipers and
τὰ σελάχη, τὰ δ' ᾠοτοκεῖ, οἷον τὸ τῶν ἰχθύων γένος
the selachians the-others and lay-eggs such-as the of-the fish kind
καὶ τὸ τῶν ἄλλων ὄφεων· καὶ τῶν πόδας ἐχόντων καὶ
and the of-the other snakes and of-the feet having both
ᾠοτοκεῖ πολλὰ καὶ ζῳοτοκεῖ, οἷον τὰ εἰρημένα τετράποδα.
lay-eggs many and bear-live such-as the said quadrupeds
Καὶ ἐν αὐτοῖς δὲ ζῳοτοκεῖ καὶ πόδας ἔχοντα, οἷον
Also in themselves and bear-live both feet having such-as
ἄνθρωπος, καὶ ἄποδα, οἷον φάλαινα καὶ δελφίς. Ταύτῃ
man and footless such-as whale and dolphin In-this-way
μὲν οὖν οὐκ ἔστι διελεῖν, οὐδ' αἴτιον τῆς διαφορᾶς ταύτης
indeed then not it-is to-divide nor cause of-the difference this
οὐθὲν τῶν πορευτικῶν ὀργάνων, ἀλλὰ ζῳοτοκεῖ μὲν τὰ
none of-the locomotive organs but bear-live indeed the
τελεώτερα τὴν φύσιν τῶν ζῴων καὶ μετέχοντα καθαρωτέρας
more-complete in-the nature of-the animals and sharing in-purer
ἀρχῆς· οὐθὲν γὰρ ζῳοτοκεῖ ἐν αὑτῷ, μὴ δεχόμενον τὸ
principle nothing for bears-live in itself not receiving the
πνεῦμα καὶ ἀναπνέον. Τελεώτερα δὲ τὰ θερμότερα τὴν
breath and breathing More-complete and the hotter in-the

φύσιν καὶ ὑγρότερα καὶ μὴ γεώδη. Τῆς δὲ θερμότητος τῆς
nature and moister and not earthy Of-the and heat the
φυσικῆς ὅρος ὁ πλεύμων, ὅσων ἔναιμός ἐστιν· ὅλως
natural mark the lung in-as-many-as blooded it-is generally
μὲν γὰρ τὰ ἔχοντα πλεύμονα τῶν μὴ ἐχόντων θερμότερα,
indeed for the having lung than-the not having hotter
τούτων δ' αὐτῶν τὰ μὴ σομφὸν ἔχοντα μηδὲ στιφρὸν
of-these and themselves the not spongy having nor solid
μηδ' ὀλίγαιμον ἀλλ' ἔναιμον καὶ μαλακόν. Ὥσπερ δὲ τὸ
nor little-blooded but blooded and soft Just-as and the
μὲν ζῷον τέλεον, ὁ δὲ σκώληξ καὶ τὸ ᾠὸν ἀτελές, οὕτως
indeed animal complete the but larva and the egg incomplete so
τὸ τέλειον ἐκ τοῦ τελειοτέρου γίνεσθαι πέφυκεν. Τὰ δὲ
the complete from the more-complete to-come-to-be is-natural The and
θερμότερα μὲν διὰ τὸ ἔχειν πλεύμονα, ξηρότερα δὲ τὴν
hotter indeed because-of the to-have lung drier but in-the
φύσιν, ἢ τὰ ψυχρότερα μὲν ὑγρότερα δέ, τὰ μὲν ᾠοτοκεῖ
nature or the colder indeed moister but the-ones indeed lay-eggs
τέλειον ᾠόν, τὰ δ' ᾠοτοκήσαντα ζῳοτοκεῖ ἐν αὑτοῖς.
complete egg the-others but having-laid-eggs bear-live in themselves
Οἱ μὲν γὰρ ὄρνιθες καὶ τὰ φολιδωτὰ διὰ μὲν
The indeed for birds and the scaly because-of indeed
θερμότητα τελεσιουργοῦσι, διὰ δὲ ξηρότητα ᾠοτοκοῦσι,
heat complete because-of but dryness lay-eggs
τὰ δὲ σελάχη θερμὰ μὲν ἧττον τούτων, ὑγρὰ δὲ μᾶλλον,
the and selachians hot indeed less than-these moist but more
ὥστε μετέχει ἀμφοτέρων· καὶ γὰρ ᾠοτοκεῖ καὶ ζῳοτοκεῖ ἐν
so-that they-share both and for they-lay-eggs and bear-live in
αὑτοῖς, ᾠοτοκεῖ μὲν ὅτι ψυχρά, ζῳοτοκεῖ δ' ὅτι ὑγρά·
themselves they-lay-eggs indeed because cold they-bear-live but because moist
ζωτικὸν γὰρ τὸ ὑγρόν, πορρωτάτω δὲ τοῦ ἐμψύχου τὸ
vital for the moist farthest and from-the ensouled the

ξηρόν. Ἐπεὶ δ' οὔτε πτερωτὰ οὔτε φολιδωτὰ οὔτε λεπιδωτά
dry Since and neither feathered nor scaly nor scaled
ἐστιν, ἃ σημεῖα ξηρᾶς μᾶλλον καὶ γεώδους φύσεως,
they-are which signs of-dry rather and earthy nature
μαλακὸν τὸ ᾠὸν γεννῶσιν· ὥσπερ γὰρ οὐδ' ἐν αὑτῷ, οὐδ'
soft the egg they-generate just-as for not-even in itself nor
ἐν τῷ ᾠῷ ἐπιπολάζει τὸ γεηρόν. Καὶ διὰ τοῦτο εἰς
in the egg comes-to-the-surface the earthy And because-of this into
αὑτὸ ᾠοτοκεῖ· θύραζε γὰρ ἂν ἰὸν διεφθείρετο τὸ ᾠόν, οὐκ
itself it-lays-eggs outside for — going would-be-destroyed the egg not
ἔχον προβολήν. Τὰ δὲ ψυχρὰ καὶ ξηρὰ μᾶλλον ᾠοτοκεῖ μέν,
having protection The but cold and dry rather lay-eggs indeed
ἀτελὲς δὲ τὸ ᾠόν, καὶ σκληρόδερμον δὲ διὰ τὸ γεηρὰ
incomplete but the egg and hard-skinned and because-of the earthy
εἶναι καὶ ἀτελὲς προΐεσθαι, ἵνα σώζηται φυλακὴν ἔχον
to-be and incomplete to-emit so-that it-be-preserved protection having
τὸ ὀστρακῶδες. Οἱ μὲν οὖν ἰχθύες λεπιδωτοὶ ὄντες καὶ
the shell-like The indeed then fish scaled being and
τὰ μαλακόστρακα γεηρὰ ὄντα σκληρόδερμα τὰ ᾠὰ γεννᾷ.
the crustaceans earthy being hard-skinned the eggs generate
Τὰ δὲ μαλάκια, ὥσπερ αὐτὰ γλίσχρα τὴν τοῦ σώματός
The but cephalopods just-as themselves viscous the of-the body
ἐστι φύσιν, οὕτως σώζει ἀτελῆ προϊέμενα τὰ ᾠά· προΐεται
are nature so preserve incomplete emitting the eggs they-emit
γὰρ γλισχρότητα περὶ τὸ κύημα πολλήν. Τὰ δ' ἔντομα
for viscosity about the fetus much The and insects
πάντα σκωληκοτοκεῖ. Ἔστι δ' ἄπαντα ἄναιμα τὰ ἔντομα,
all bear-larvae Are and all bloodless the insects
διὸ καὶ σκωληκοτοκοῦντα θύραζε. Τὰ δ' ἄναιμα οὐ πάντα
wherefore also bearing-larvae outside The but bloodless not all
σκωληκοτοκεῖ ἁπλῶς· ἐπαλλάττουσι γὰρ ἀλλήλοις τά τ'
bear-larvae simply overlap for with-one-another the both

ἔντομα καὶ τὰ ἀτελὲς τίκτοντα τὸ ᾠόν, οἷον οἵ τ' ἰχθύες
insects and the incomplete bearing the egg such-as the both fish
οἱ λεπιδωτοὶ καὶ τὰ μαλακόστρακα καὶ τὰ μαλάκια. Τούτων
the scaled and the crustaceans and the cephalopods Of-these
μὲν γὰρ τὰ ᾠὰ σκωληκώδη ἐστίν (αὔξησιν γὰρ λαμβάνει
indeed for the eggs larva-like are growth for they-take
θύραζε), ἐκείνων δ' οἱ σκώληκες γίνονται προϊόντες ᾠοειδεῖς·
outside of-those but the larvae become going-forth egg-like
ὃν δὲ τρόπον, ἐν τοῖς ὕστερον διοριοῦμεν. Δεῖ δὲ
in-what and way in the later-parts we-shall-determine One-must and
νοῆσαι ὡς εὖ καὶ ἐφεξῆς τὴν γένεσιν ἀποδίδωσιν ἡ φύσις.
to-understand how well and in-order the generation renders the nature
Τὰ μὲν γὰρ τελεώτερα καὶ θερμότερα τῶν ζῴων τέλειον
The indeed for more-complete and hotter of-the animals complete
ἀποδίδωσι τὸ τέκνον κατὰ τὸ ποιόν (κατὰ δὲ τὸ ποσὸν
render the offspring in-respect-of the quality in-respect-of but the quantity
ὅλως οὐθὲν τῶν ζῴων· πάντα γὰρ γενόμενα λαμβάνει
at-all none of-the animals all for having-come-to-be take
αὔξησιν), καὶ γεννᾷ δὴ ταῦτα ζῷα ἐν αὑτοῖς εὐθύς.
growth and generate indeed these animals in themselves at-once
Τὰ δὲ δεύτερα ἐν αὑτοῖς μὲν οὐ γεννᾷ τέλεια εὐθύς
The and second in themselves indeed not generate complete at-once
(ζῳοτοκεῖ γὰρ ᾠοτοκήσαντα πρῶτον), θύραζε δὲ ζῳοτοκεῖ.
they-bear-live for having-laid-eggs first outside but they-bear-live
Τὰ δὲ ζῷον μὲν οὐ τέλειον γεννᾷ, ᾠὸν δὲ γεννᾷ, καὶ
The-others and animal indeed not complete generate egg but they-generate and
τοῦτο τέλειον τὸ ᾠόν. Τὰ δ' ἔτι τούτων ψυχροτέραν ἔχοντα
this complete the egg The but still than-these colder having
τὴν φύσιν ᾠὸν μὲν γεννᾷ οὐ τέλειον δὲ ᾠόν, ἀλλ' ἔξω
the nature egg indeed generate not complete but egg but outside
τελειοῦται, καθάπερ τὸ τῶν λεπιδωτῶν ἰχθύων γένος καὶ τὰ
it-is-completed just-as the of-the scaled fish kind and the

μαλακόστρακα καὶ τὰ μαλάκια. Τὸ δὲ πέμπτον γένος καὶ
crustaceans and the cephalopods The and fifth kind and
ψυχρότατον οὐδ' ᾠοτοκεῖ ἐξ αὑτοῦ, ἀλλὰ καὶ τὸ τοιοῦτον
coldest not-even lays-eggs from itself but also the such
ἔξω συμβαίνει πάθος αὐτῷ, ὥσπερ εἴρηται. Τὰ γὰρ ἔντομα
outside happens affection to-it just-as has-been-said The for insects
σκωληκοτοκεῖ τὸ πρῶτον· προελθὼν δ' ᾠώδης γίνεται ὁ
bear-larvae the first having-gone-forth but egg-like becomes the
σκώληξ (ἡ γὰρ χρυσαλλὶς καλουμένη δύναμιν ᾠοῦ ἔχει)· εἶτ'
larva the for chrysalis so-called power of-egg has then
ἐκ τούτου γίνεται ζῷον, ἐν τῇ τρίτῃ μεταβολῇ λαβὸν τὸ
from this comes-to-be animal in the third change having-taken the
τῆς γενέσεως τέλος. Τὰ μὲν οὖν οὐ γίνεται τῶν ζώων ἀπὸ
of-the generation end The-ones indeed then not come-to-be of-the animals from
σπέρματος, ὥσπερ ἐλέχθη καὶ πρότερον· τὰ δ' ἔναιμα πάντα
seed just-as was-said also before the but blooded all
γίνεται ἀπὸ σπέρματος, ὅσα ἐκ συνδυασμοῦ γίνεται,
come-to-be from seed as-many-as from coupling come-to-be
προϊεμένου τοῦ ἄρρενος εἰς τὸ θῆλυ γονήν, ἧς εἰσελθούσης
emitting the male into the female semen which having-entered
τὰ ζῷα συνίσταται καὶ λαμβάνει τὴν οἰκείαν μορφήν,
the animals are-constituted and take the proper shape
τὰ μὲν ἐν αὐτοῖς τοῖς ζώοις ὅσα ζῳοτοκεῖ, τὰ δ'
the-ones indeed in themselves the animals as-many-as bear-live the-others and
ἐν ᾠοῖς καὶ σπέρμασι καὶ τοιαύταις ἄλλαις ἀποκρίσεσιν.
in eggs and seeds and such other secretions
Περὶ ὧν ἐστὶν ἀπορία πλείων, πῶς ποτὲ γίνεται ἐκ τοῦ
About which there-is puzzle more how ever comes-to-be from the
σπέρματος τὸ φυτὸν ἢ τῶν ζώων ὁτιοῦν. Ἀνάγκη γὰρ
seed the plant or of-the animals any-whatever Necessary for
τὸ γιγνόμενον καὶ ἔκ τινος γίνεσθαι καὶ ὑπό τινος καὶ
the coming-to-be both from something to-come-to-be and by something and

τί. Ἐξ οὗ μὲν οὖν ἐστὶν ὕλη, ἣν ἔνια μὲν ζῷα ἔχει
something From which indeed then is matter which some indeed animals have
πρώτην ἐν αὑτοῖς, λαμβάνοντα ἐκ τοῦ θήλεος, οἷον ὅσα
first in themselves taking from the female such-as as-many-as
μὴ ζῳοτοκεῖται ἀλλὰ σκωληκοτοκεῖται ἢ ᾠοτοκεῖται,
not are-born-live but are-born-as-larvae or are-born-as-eggs
τὰ δὲ μέχρι πόρρω ἐκ τοῦ θήλεος λαμβάνει διὰ τὸ
the-others and up-to far from the female take because-of the
θηλάζειν, ὥσπερ ὅσα ζῳοτοκεῖται μὴ μόνον ἐκτὸς ἀλλὰ
suckling just-as as-many-as are-born-live not only outside but
καὶ ἐντός. Ἐξ οὗ μὲν οὖν γίνεται, ἡ τοιαύτη ὕλη ἐστίν·
also inside From which indeed then comes-to-be the such matter is
ζητεῖται δὲ νῦν οὐκ ἐξ οὗ ἀλλ' ὑφ' οὗ γίνεται τὰ μόρια.
is-sought and now not from which but by which come-to-be the parts
Ἤτοι γὰρ τῶν ἔξωθέν τι ποιεῖ, ἢ ἐνυπάρχει τι ἐν
Either for of-the from-outside something makes or is-present-in something in
τῇ γονῇ καὶ σπέρματι· καὶ τοῦτ' ἐστὶν ἢ μέρος τι ψυχῆς
the semen and seed and this is either part some of-soul
ἢ ψυχὴ ἢ ἔχον ἂν εἴη ψυχήν. Τῶν μὲν οὖν ἔξωθέν
or soul or having — would-be soul Of-the indeed then from-outside
τι ποιεῖν ἕκαστον ἢ τῶν σπλάγχνων ἢ τῶν ἄλλων
something to-make each either of-the viscera or of-the other
μερῶν ἄλογον ἂν δόξειεν· κινεῖν τε γὰρ μὴ ἁπτόμενον
parts irrational — would-seem to-move both for not touching
ἀδύνατον καὶ μὴ κινοῦντος πάσχειν τι ὑπὸ τούτου.
impossible and not moving to-suffer something by this
Ἐν αὐτῷ ἄρα τῷ κυήματι ἐνυπάρχει τι, ἢ δὴ
In itself then the fetus is-present-in something either indeed
αὐτοῦ μόριον ἢ κεχωρισμένον. Τὸ μὲν οὖν ἄλλο τι
of-it part or separated The indeed then other something
εἶναι κεχωρισμένον ἄλογον. Γεννηθέντος γὰρ τοῦ ζῴου
to-be separated irrational Having-been-generated for the animal

πότερον φθείρεται ἢ ἐμμένει; Ἀλλ' οὐδὲν τοιοῦτον φαίνεται
whether is-destroyed or remains But nothing such appears
ἐνὸν ὃ οὐ μόριον τοῦ ὅλου ἢ φυτοῦ ἢ ζῴου ἐστίν.
being-in which not part of-the whole either of-plant or of-animal is
Ἀλλὰ μὴν καὶ τὸ φθείρεσθαί γε ποιῆσαν εἴτε πάντα
But truly also the to-be-destroyed at-least having-made whether all
τὰ μέρη εἴτε τινὰ ἄτοπον· τὰ λοιπὰ γὰρ τί ποιήσει; Εἰ
the parts or some strange the rest for what will-make If
γὰρ ἐκεῖνο μὲν τὴν καρδίαν, εἶτ' ἐφθάρη, αὕτη δ' ἕτερον,
for that indeed the heart then was-destroyed this and other
τοῦ αὐτοῦ λόγου ἢ πάντα φθείρεσθαι ἢ πάντα μένειν.
of-the same account either all to-be-destroyed or all to-remain
Σώζεται ἄρα. Αὐτοῦ ἄρα μόριόν ἐστιν, ὃ εὐθὺς ἐνυπάρχει
It-is-preserved then Of-it then part is which at-once is-present-in
ἐν τῷ σπέρματι. Εἰ δὲ δὴ μή ἐστι τῆς ψυχῆς μηθὲν
in the seed If but indeed not is of-the soul nothing
ὃ μὴ τοῦ σώματός ἐστιν ἔν τινι μορίῳ, καὶ ἔμψυχον
which not of-the body is in some part also ensouled
ἄν τι εἴη μόριον εὐθύς. Τὰ οὖν ἄλλα πῶς; Ἢ γάρ
— some would-be part at-once The then others how Either for
τοι ἅμα πάντα γίγνεται τὰ μόρια, οἷον καρδία πλεύμων
indeed at-once all come-to-be the parts such-as heart lung
ἢπαρ ὀφθαλμὸς καὶ τῶν ἄλλων ἕκαστον, ἢ ἐφεξῆς, ὥσπερ
liver eye and of-the others each or in-order just-as
ἐν τοῖς καλουμένοις Ὀρφέως ἔπεσιν· ἐκεῖ γὰρ ὁμοίως
in the so-called of-Orpheus verses there for likewise
φησὶ γίγνεσθαι τὸ ζῷον τῇ τοῦ δικτύου πλοκῇ.
he-says to-come-to-be the animal to-the of-the net plaiting
Ὅτι μὲν οὖν οὐχ ἅμα, καὶ τῇ αἰσθήσει ἐστὶ φανερόν·
That indeed then not at-once also to-the perception it-is evident
τὰ μὲν γὰρ φαίνεται ἐνόντα ἤδη τῶν μορίων, τὰ
the-ones indeed for appear being-in already of-the parts the-others

δ᾽ οὔ. Ὅτι δ᾽ οὐ διὰ μικρότητα οὐ φαίνεται, δῆλον·
but not That but not because-of smallness not they-appear clear
μείζων γὰρ τὸ μέγεθος ὢν ὁ πνεύμων τῆς καρδίας
larger for in-the size being the lung than-the heart
ὕστερον φαίνεται τῆς καρδίας ἐν τῇ ἐξ ἀρχῆς γενέσει.
later appears than-the heart in the from beginning generation
Ἐπεὶ δὲ τὸ μὲν πρότερον τὸ δ᾽ ὕστερον, πότερον
Since and the-one indeed earlier the-other and later whether
θάτερον ποιεῖ θάτερον, καὶ ἔστι διὰ τὸ ἐχόμενον, ἢ
the-one makes the-other and is because-of the next or
μᾶλλον μετὰ τόδε γίνεται τόδε; λέγω δ᾽ οἷον οὐχ ἡ
rather after this comes-to-be this I-mean and such-as not the
καρδία γενομένη ποιεῖ τὸ ἧπαρ, τοῦτο δ᾽ ἕτερόν τι,
heart having-come-to-be makes the liver this and other something
ἀλλὰ τόδε μετὰ τόδε, ὥσπερ μετὰ τὸ παῖς ἀνὴρ γίνεται,
but this after this just-as after the child man comes-to-be
ἀλλ᾽ οὐχ ὑπ᾽ ἐκείνου. Λόγος δὲ τούτου, ὅτι ὑπὸ τοῦ
but not by that Account and of-this that by the
ἐντελεχείᾳ ὄντος τὸ δυνάμει ὂν γίνεται ἐν τοῖς φύσει ἢ
in-actuality being the in-potentiality being comes-to-be in the by-nature or
τέχνῃ γινομένοις, ὥστε δέοι ἂν τὸ εἶδος καὶ τὴν
by-art coming-to-be so-that it-would-be-needful — the form and the
μορφὴν ἐν ἐκείνῳ εἶναι, οἷον ἐν τῇ καρδίᾳ τὸ τοῦ ἥπατος.
shape in that to-be such-as in the heart the of-the liver
Καὶ ἄλλως δ᾽ ἄτοπος καὶ πλασματίας ὁ λόγος. Ἀλλὰ μὴν
Also otherwise and strange and fictitious the account But truly
καὶ τὸ ἐν τῷ σπέρματι εὐθὺς ἐνυπάρχειν τι μόριον τοῦ
also the in the seed at-once to-be-present-in some part of-the
ζῴου ἢ φυτοῦ γεγενημένον, εἴτε δυνάμενον ποιεῖν τἆλλα εἴτε
animal or plant having-come-to-be whether able to-make the-rest or
μή, ἀδύνατον, εἰ πᾶν ἐκ σπέρματος καὶ γονῆς γίγνεται.
not impossible if everything from seed and semen comes-to-be

Δῆλον γὰρ ὅτι ὑπὸ τοῦ τὸ σπέρμα ποιήσαντος ἐγένετο,
Clear for that by the the seed having-made it-came-to-be
εἴπερ εὐθὺς ἐνυπάρχει. Ἀλλὰ σπέρμα δεῖ γενέσθαι πρότερον,
if-indeed at-once it-is-present-in But seed must to-come-to-be first
καὶ τοῦτ' ἔργον τοῦ γεννῶντος. Οὐθὲν ἄρα οἷόν τε μόριον
and this work of-the generator No then possible — part
ὑπάρχειν. Οὐκ ἄρα ἔχει τὸ ποιοῦν τὰ μόρια ἐν αὐτῷ. Ἀλλὰ
to-be-present Not then has the making the parts in itself But
μὴν οὐδ' ἔξω· ἀνάγκη δὲ τούτων εἶναι θάτερον, πειρατέον
truly not-even outside necessary but of-these to-be one-of-the-two it-must-be-tried
δὴ ταῦτα λύειν· ἴσως γάρ τι τῶν εἰρημένων ἐστὶν
indeed these to-resolve perhaps for something of-the said is
οὐχ ἁπλοῦν, οἷον πῶς ποτὲ ὑπὸ τοῦ ἔξω οὐκ ἐνδέχεται
not simple such-as how ever by the outside not it-is-possible
γίνεσθαι. Ἔστι μὲν γὰρ ὡς ἐνδέχεται, ἔστι δ' ὡς οὔ. Τὸ
to-come-to-be It-is indeed for how it-is-possible it-is but how not The
μὲν οὖν τὸ σπέρμα λέγειν ἢ ἀφ' οὗ τὸ σπέρμα οὐθὲν
indeed then the seed to-say or from which the seed nothing
διαφέρει ᾗ ἔχει τὴν κίνησιν ἐν ἑαυτῷ, ἣν ἐκεῖνο ἐκίνει.
differs insofar-as it-has the motion in itself which that moved
Ἐνδέχεται δὲ τόδε μὲν τόδε κινῆσαι, τόδε δὲ τόδε, καὶ
It-is-possible and this indeed this to-move this and this and
εἶναι οἷον τὰ αὐτόματα τῶν θαυμάτων. Ἔχοντα γάρ πως
to-be such-as the automatic of-the marvels Having for somehow
ὑπάρχει δύναμιν τὰ μόρια ἠρεμοῦντα· ὧν τὸ πρῶτον
belong power the parts resting of-which the first
ὅταν τι κινήσῃ τῶν ἔξωθεν, εὐθὺς τὸ ἐχόμενον γίγνεται
when something move of-the from-outside at-once the next becomes
ἐνεργείᾳ. Ὥσπερ οὖν ἐν τοῖς αὐτομάτοις, τρόπον μέν τινα
in-actuality Just-as then in the automata in-a-way indeed some
ἐκεῖνο κινεῖ οὐχ ἁπτόμενον νῦν οὐθενός, ἁψάμενον μέντοι·
that moves not touching now anything having-touched however

ὁμοίως δὲ καὶ ἀφ᾽ οὗ τὸ σπέρμα ἢ τὸ ποιῆσαν τὸ
likewise and also from which the seed or the having-made the
σπέρμα, ἁψάμενον μέν τινος, οὐχ ἁπτόμενον δ᾽ ἔτι·
seed having-touched indeed something not touching but any-longer
τρόπον δέ τινα ἡ ἐνοῦσα κίνησις, ὥσπερ ἡ οἰκοδόμησις
in-a-way and some the being-in motion just-as the building
τὴν οἰκίαν. Ὅτι μὲν οὖν ἔστι τι ὃ ποιεῖ, οὐχ οὕτως
the house That indeed then there-is something which makes not so
δὲ ὡς τόδε τι, οὐδ᾽ ἐνυπάρχει ὡς τετελεσμένον τὸ
but as this something nor is-present-in as completed the
πρῶτον, δῆλον· πῶς δέ ποτε ἕκαστον γίγνεται, ἐντεῦθεν
first clear how and ever each comes-to-be from-here
δεῖ λαβεῖν, ἀρχὴν ποιησαμένους πρῶτον μὲν ὅτι
one-must to-take beginning having-made first indeed that
ὅσα φύσει γίγνεται ἢ τέχνῃ, ὑπ᾽ ἐνεργείᾳ ὄντος γίνεται
as-many-as by-nature come-to-be or by-art by in-actuality being come-to-be
ἐκ τοῦ δυνάμει τοιούτου. Τὸ μὲν οὖν σπέρμα τοιοῦτον,
from the in-potentiality such The indeed then seed such
καὶ ἔχει κίνησιν καὶ ἀρχὴν τοιαύτην, ὥστε παυομένης
and has motion and principle such so-that ceasing
τῆς κινήσεως γίνεσθαι ἕκαστον τῶν μορίων καὶ ἔμψυχον.
the motion to-come-to-be each of-the parts and ensouled
Οὐ γάρ ἐστι πρόσωπον μὴ ἔχον ψυχήν, οὐδὲ σάρξ, ἀλλὰ
Not for is face not having soul nor flesh but
φθαρέντα ὁμωνύμως λεχθήσεται τὸ μὲν εἶναι πρόσωπον
having-perished homonymously will-be-called the-one indeed to-be face
τὸ δὲ σάρξ, ὥσπερ κἂν εἰ ἐγίγνετο λίθινα ἢ ξύλινα.
the-other and flesh just-as even if they-came-to-be of-stone or of-wood
Ἅμα δὲ τὰ ὁμοιομερῆ γίνεται καὶ τὰ ὀργανικά· καὶ ὥσπερ
At-once and the uniform come-to-be and the instrumental and just-as
οὐδ᾽ ἂν πέλεκυν οὐδ᾽ ἄλλο ὄργανον φήσαιμεν ἂν ποιῆσαι
not-even — axe nor other instrument would-we-say — to-make

τὸ πῦρ μόνον, οὕτως οὐδὲ πόδα οὐδὲ χεῖρα. Τὸν αὐτὸν
the fire alone so not-even foot nor hand The same
δὲ τρόπον οὐδὲ σάρκα· καὶ γὰρ ταύτης ἔργόν τι ἐστίν.
and way not-even flesh and for of-this work some is
Σκληρὰ μὲν οὖν καὶ μαλακὰ καὶ γλίσχρα καὶ κραῦρα,
Hard indeed then and soft and viscous and brittle
καὶ ὅσα ἄλλα πάθη ὑπάρχει τοῖς ἐμψύχοις μορίοις,
and as-many-as other affections belong to-the ensouled parts
θερμότης καὶ ψυχρότης ποιήσειεν ἄν, τὸν δὲ λόγον ᾧ
heat and coldness would-make — the but account by-which
ἤδη τὸ μὲν σὰρξ τὸ δ' ὀστοῦν, οὐκέτι, ἀλλ' ἡ
already the-one indeed flesh the-other and bone no-longer but the
κίνησις ἡ ἀπὸ τοῦ γεννήσαντος τοῦ ἐντελεχείᾳ ὄντος ὅ
motion the from the generator the in-actuality being which
ἐστι δυνάμει ἡ ἐξ οὗ γίνεται, ὥσπερ καὶ ἐπὶ τῶν
is in-potentiality that from which comes-to-be just-as also in-the-case-of the
γινομένων κατὰ τέχνην. Σκληρὸν μὲν γὰρ καὶ μαλακὸν
coming-to-be by art Hard indeed for and soft
τὸν σίδηρον ποιεῖ τὸ θερμὸν καὶ τὸ ψυχρόν, ἀλλὰ ξίφος
the iron makes the hot and the cold but sword
ἡ κίνησις ἡ τῶν ὀργάνων ἔχουσα λόγον τὸν τῆς τέχνης.
the motion the of-the instruments having account the of-the art
Ἡ γὰρ τέχνη ἀρχὴ καὶ εἶδος τοῦ γινομένου, ἀλλ' ἐν ἑτέρῳ·
The for art principle and form of-the coming-to-be but in another
ἡ δὲ τῆς φύσεως κίνησις ἐν αὐτῷ ἀφ' ἑτέρας οὖσα φύσεως
the but of-the nature motion in itself from other being nature
τῆς ἐχούσης τὸ εἶδος ἐνεργείᾳ. Πότερον δ' ἔχει ψυχὴν τὸ
the having the form in-actuality Whether and has soul the
σπέρμα ἢ οὔ; Ὁ αὐτὸς λόγος καὶ περὶ τῶν μορίων· οὔτε
seed or not The same account also about the parts neither
γὰρ ψυχὴ ἐν ἄλλῳ οὐδεμία ἔσται πλὴν ἐν ἐκείνῳ οὗ γ'
for soul in other none will-be except in that of-which at-least

ἐστίν, οὔτε μόριον ἔσται μὴ μετέχον ἀλλ᾽ ἢ ὁμωνύμως,
it-is nor part will-be not sharing but only homonymously
ὥσπερ τεθνεῶτος ὀφθαλμός. Δῆλον οὖν ὅτι καὶ ἔχει καὶ
just-as of-a-dead-man eye Clear then that both it-has and
ἔστι δυνάμει. Ἐγγυτέρω δὲ καὶ πορρωτέρω αὐτὸ αὑτοῦ
it-is in-potentiality Nearer and and farther it than-itself
ἐνδέχεται εἶναι δυνάμει, ὥσπερ ὁ καθεύδων γεωμέτρης
it-is-possible to-be in-potentiality just-as the sleeping geometer
τοῦ ἐγρηγορότος πορρωτέρω, καὶ οὗτος τοῦ θεωροῦντος.
than-the waking farther and this-one than-the contemplating
Ταύτης μὲν οὖν οὐθὲν μόριον αἴτιον τῆς γενέσεως, ἀλλὰ
Of-this indeed then no part cause of-the generation but
τὸ πρῶτον κινῆσαν ἔξωθεν. Οὐθὲν γὰρ αὐτὸ ἑαυτὸ γεννᾷ·
the first having-moved from-outside Nothing for itself itself generates
ὅταν δὲ γένηται, αὔξει ἤδη αὐτὸ ἑαυτό. Διόπερ πρῶτόν
when but it-come-to-be it-grows already itself itself Wherefore first
τι γίγνεται, καὶ οὐχ ἅμα πάντα. Τοῦτο δὲ γίγνεσθαι
something comes-to-be and not at-once all This and to-come-to-be
ἀνάγκη πρῶτον, ὃ αὐξήσεως ἀρχὴν ἔχει· εἴτε γὰρ φυτὸν
necessary first which of-growth principle has whether for plant
εἴτε ζῷον, ὁμοίως τοῦτο πᾶσιν ὑπάρχει τὸ θρεπτικόν.
or animal likewise this to-all belongs the nutritive
Τοῦτο δ᾽ ἔστι τὸ γεννητικὸν ἑτέρου οἷον αὐτό· τοῦτο γὰρ
This and is the generative of-another like itself this for
παντὸς φύσει τελείου ἔργον καὶ ζῴου καὶ φυτοῦ. Ἀνάγκη
of-every by-nature complete work both of-animal and of-plant Necessary
δὲ διὰ τόδε, ὅτι ὅταν τι γένηται, αὐξάνεσθαι ἀνάγκη.
and because-of this that when something come-to-be to-grow necessary
Ἐγέννησε μὲν τοίνυν τὸ συνώνυμον, οἷον ἄνθρωπος
Generated indeed then the same-named such-as man
ἄνθρωπον, αὔξεται δὲ δι᾽ ἑαυτοῦ. Αὐτὸ ἄρα τι ὂν
man grows but through itself Itself then something being

αὔξει. Εἰ δὴ ἕν τι καὶ τοῦτο πρῶτον, τοῦτο ἀνάγκη
it-grows If indeed one something also this first this necessary
γίγνεσθαι πρῶτον. Ὥστ᾽ εἰ ἡ καρδία πρῶτον ἔν τισι ζῴοις
to-come-to-be first So-that if the heart first in some animals
γίγνεται, ἐν δὲ τοῖς μὴ ἔχουσι καρδίαν τὸ ταύτῃ ἀνάλογον,
comes-to-be in and the not having heart the to-this analogous
ἐκ ταύτης ἂν εἴη ἡ ἀρχὴ τοῖς ἔχουσι, τοῖς δ᾽ ἄλλοις
from this — would-be the principle for-the having for-the and others
ἐκ τοῦ ἀνάλογον. Τί μὲν οὖν ἐστὶν αἴτιον ὡς ἀρχὴ τῆς
from the analogous What indeed then is cause as principle of-the
περὶ ἕκαστον γενέσεως, κινοῦν πρῶτον καὶ δημιουργοῦν,
about each generation moving first and fashioning
εἴρηται πρὸς τὰ διαπορηθέντα πρότερον·
it-has-been-said with-regard-to the puzzled-over before

II · THE NATURE OF SEMEN

Semen leaves the body thick and white and cools to water, yet heat does not thicken water. It is water and hot breath, a foam, thick and white like oil and snow; the water stays when the hot breath leaves, and like air it does not freeze. Ctesias erred on elephant seed, Herodotus on black Ethiopian seed. Aphrodite is named from this foam.

Περὶ δὲ τῆς τοῦ σπέρματος φύσεως ἀπορήσειεν ἄν τις.
About and the of-the seed nature would-be-puzzled — someone
Τὸ γὰρ σπέρμα ἐξέρχεται μὲν ἐκ τοῦ ζῴου παχὺ καὶ
The for seed comes-out indeed from the animal thick and
λευκόν, ψυχόμενον δὲ γίνεται ὑγρὸν ὥσπερ ὕδωρ, καὶ τὸ
white being-cooled but becomes moist like water and the
χρῶμα ὕδατος. Ἄτοπον δὴ ἂν δόξειεν· οὐ γὰρ παχύνεται
color of-water Strange indeed — would-seem not for is-thickened

ὕδωρ θερμῷ, τὸ δ' ἔσωθεν ἐκ θερμοῦ ἐξέρχεται παχύ,
water by-heat the but from-within from hot comes-out thick
ψυχόμενον δὲ γίνεται ὑγρόν. Καίτοι πήγνυταί γε τὰ
being-cooled and becomes moist And-yet freeze at-least the
ὑδατώδη· τὸ δὲ σπέρμα οὐ πήγνυται τιθέμενον ἐν τοῖς
watery the but seed not freezes placed in the
πάγοις ὑπαίθριον, ἀλλ' ὑγραίνεται, ὡς ὑπὸ τοῦ ἐναντίου
frosts in-the-open but is-liquefied as by the opposite
παχυνθέν. Ἀλλὰ μὴν οὐδ' ὑπὸ θερμοῦ παχύνεσθαι
thickened But truly not-even by heat to-be-thickened
εὔλογον. Ὅσα γὰρ γῆς πλεῖον ἔχει, ταῦτα συνίσταται
reasonable As-many-as for earth more have these set
καὶ παχύνεται ἑψόμενα, οἷον καὶ τὸ γάλα. Ἔδει οὖν
and are-thickened being-boiled such-as also the milk It-should then
ψυχόμενον στερεοῦσθαι. Νῦν δ' οὐθὲν γίνεται στερεόν,
being-cooled to-become-solid Now but nothing becomes solid
ἀλλὰ πᾶν ὥσπερ ὕδωρ. Ἡ μὲν οὖν ἀπορία αὕτη ἐστίν.
but all like water The indeed then puzzle this is
Εἰ μὲν γὰρ ὕδωρ, τὸ ὕδωρ οὐ φαίνεται παχυνόμενον
If indeed for water the water not appears being-thickened
ὑπὸ τοῦ θερμοῦ, τὸ δ' ἐξέρχεται παχὺ καὶ θερμὸν καὶ
by the heat the but comes-out thick and hot and
ἐκ θερμοῦ τοῦ σώματος· εἰ δ' ἐκ γῆς ἢ μικτὸν γῆς
from hot the body if but from earth or mixed of-earth
καὶ ὕδατος, οὐκ ἔδει ὑγρὸν πᾶν γίνεσθαι καὶ ὕδωρ.
and water not should moist all to-become and water
Ἢ οὐ πάντα τὰ συμβαίνοντα διῃρήκαμεν. Οὐ γὰρ μόνον
Or not all the happenings we-have-distinguished Not for only
παχύνεται τὸ ἐξ ὕδατος καὶ γεώδους συνιστάμενον ὑγρόν,
is-thickened the from water and earthy being-constituted moist
ἀλλὰ καὶ τὸ ἐξ ὕδατος καὶ πνεύματος, οἷον καὶ ὁ ἀφρὸς
but also the from water and breath as also the foam

γίνεται παχύτερος καὶ λευκός, καὶ ὅσῳ ἂν ἐλάττους καὶ
becomes thicker and white and by-as-much-as — smaller and
ἀδηλότεραι αἱ πομφόλυγες ὦσι, τοσούτῳ καὶ λευκότερος καὶ
less-visible the bubbles be by-so-much both whiter and
στιφρότερος ὁ ὄγκος φαίνεται. Τὸ δ' αὐτὸ καὶ τὸ ἔλαιον
firmer the bulk appears The and same also the oil
πάσχει· παχύνεται γὰρ τῷ πνεύματι μιγνύμενον· διὸ καὶ
suffers it-is-thickened for by-the breath being-mixed wherefore also
τὸ λευκαινόμενον παχύτερον γίνεται, τοῦ ἐνόντος ὑδατώδους
the whitening thicker becomes the being-in watery
ὑπὸ τοῦ θερμοῦ διακρινομένου καὶ γινομένου πνεύματος.
by the heat being-separated and becoming breath
Καὶ ἡ μολύβδαινα μιγνυμένη ὕδατι ἢ καὶ ἐλαίῳ ἐξ
And the galena mixed with-water or also with-oil from
ὀλίγου τε πολὺν ὄγκον ποιεῖ καὶ ἐξ ὑγροῦ στιφρὸν καὶ
little both much bulk makes and from moist firm and
ἐκ μέλανος λευκόν. Αἴτιον δ' ὅτι ἐγκαταμίγνυται πνεῦμα,
from black white Cause and that is-mixed-in breath
ὃ τόν τε ὄγκον ποιεῖ καὶ τὴν λευκότητα διαφαίνει,
which the both bulk makes and the whiteness shows-through
ὥσπερ ἐν τῷ ἀφρῷ καὶ τῇ χιόνι· καὶ γὰρ ἡ χιών ἐστιν
just-as in the foam and the snow and for the snow is
ἀφρός. Καὶ αὐτὸ τὸ ὕδωρ τῷ ἐλαίῳ μιγνύμενον γίνεται
foam And itself the water with-the oil mixed becomes
παχὺ καὶ λευκόν· καὶ γὰρ ὑπὸ τῆς τρίψεως ἐγκατακλείεται
thick and white and for by the rubbing is-shut-in
πνεῦμα, καὶ αὐτὸ τὸ ἔλαιον ἔχει πνεῦμα πολύ· ἔστι γὰρ
breath and itself the oil has breath much is for
οὔτε γῆς οὔτε ὕδατος ἀλλὰ πνεύματος τὸ λιπαρόν.
neither of-earth nor of-water but of-breath the oily

Διὸ καὶ ἐπὶ τῷ ὕδατι ἐπιπολάζει· ὁ γὰρ ἐν αὐτῷ
Wherefore also on the water floats the for in it
ὢν ἀήρ, ὥσπερ ἐν ἀγγείῳ, φέρει ἄνω καὶ ἐπιπολάζει
being air just-as in vessel carries up and floats
καὶ αἴτιος τῆς κουφότητός ἐστιν. Καὶ ἐν τοῖς ψύχεσι δὲ
and cause of-the lightness is Also in the colds and
καὶ πάγοις παχύνεται τὸ ἔλαιον, πήγνυται δ' οὔ· διὰ
and frosts is-thickened the oil freezes but not because-of
μὲν γὰρ θερμότητα οὐ πήγνυται (ὁ γὰρ ἀὴρ θερμὸν καὶ
indeed for heat not freezes the for air hot and
ἄπηκτον), διὰ δὲ τὸ συνίστασθαι αὐτὸν καὶ πυκνοῦσθαι
unfreezable because-of and the to-be-constituted it and to-be-condensed
ὥσπερ ὑπὸ τοῦ ψύχους παχύτερον γίνεται τὸ ἔλαιον.
just-as by the cold thicker becomes the oil
Διὰ ταύτας τὰς αἰτίας καὶ τὸ σπέρμα ἔσωθεν μὲν
Because-of these the causes also the seed from-within indeed
ἐξέρχεται στιφρὸν καὶ λευκόν, ὑπὸ τῆς ἐντὸς θερμότητος
comes-out firm and white by the inside heat
πνεῦμα πολὺ ἔχον θερμόν, ἐξελθόντος δὲ ὅταν ἀποπνεύσῃ
breath much having hot having-come-out and when it-breathe-out
τὸ θερμὸν καὶ ὁ ἀὴρ ψυχθῇ, ὑγρὸν γίνεται καὶ μέλαν·
the hot and the air be-cooled moist becomes and dark
λείπεται γὰρ τὸ ὕδωρ καὶ εἴ τι μικρὸν γεῶδες, ὥσπερ ἐν
is-left for the water and if any little earthy just-as in
φλέγματι, καὶ ἐν τῷ σπέρματι ξηραινομένῳ. Ἔστι μὲν οὖν
phlegm also in the seed drying It-is indeed then
τὸ σπέρμα κοινὸν πνεύματος καὶ ὕδατος, τὸ δὲ πνεῦμά
the seed common of-breath and of-water the and breath
ἐστι θερμὸς ἀήρ· διὸ ὑγρὸν τὴν φύσιν, ὅτι ἐξ ὕδατος.
is hot air wherefore moist in-the nature because from water

Κτησίας γὰρ ὁ Κνίδιος ἃ περὶ τοῦ σπέρματος τῶν
Ctesias for the Cnidian what about the seed of-the
ἐλεφάντων εἴρηκε, φανερός ἐστιν ἐψευσμένος. Φησὶ γὰρ
elephants he-has-said evident is having-been-deceived He-says for
οὕτω σκληρύνεσθαι ξηραινόμενον ὥστε γίνεσθαι ἠλέκτρῳ
so to-harden drying so-that to-become to-amber
ὅμοιον. Τοῦτο δ' οὐ γίνεται· μᾶλλον μὲν γὰρ ἕτερον
like This but not happens more indeed for one
ἑτέρου σπέρμα γεωδέστερον ἀναγκαῖον εἶναι, καὶ μάλιστα
than-another seed more-earthy necessary to-be and most
τοιοῦτον ὅσοις πολὺ γεῶδες ὑπάρχει κατὰ τὸν ὄγκον
such in-whom much earthy belongs in-respect-of the bulk
τὸν τοῦ σώματος. Παχὺ δὲ καὶ λευκὸν διὰ τὸ
the of-the body Thick and and white because-of the
μεμῖχθαι πνεῦμα. Καὶ γὰρ λευκόν ἐστι τὸ σπέρμα
to-have-been-mixed breath And for white is the seed
πάντων· Ἡρόδοτος γὰρ οὐκ ἀληθῆ λέγει, φάσκων μέλαιναν
of-all Herodotus for not true says asserting black
εἶναι τὴν τῶν Αἰθιόπων γονήν, ὥσπερ ἀναγκαῖον ὂν τῶν
to-be the of-the Ethiopians semen just-as necessary being of-the
τὴν χρόαν μελάνων εἶναι πάντα μέλανα, καὶ ταῦθ' ὁρῶν
in-the color black to-be all black and these-things seeing
καὶ τοὺς ὀδόντας αὐτῶν ὄντας λευκούς. Αἴτιον δὲ τῆς
also the teeth of-them being white Cause and of-the
λευκότητος τοῦ σπέρματος ὅτι ἐστὶν ἡ γονὴ ἀφρός, ὁ δ'
whiteness of-the seed that is the semen foam the and
ἀφρὸς λευκόν, καὶ μάλιστα τὸ ἐξ ὀλιγίστων συγκείμενον
foam white and most the from smallest composed
μορίων καὶ οὕτω μικρῶν ὥσπερ ἑκάστης ἀοράτου τῆς
parts and so small just-as each invisible the
πομφόλυγος οὔσης, ὅπερ συμβαίνει καὶ ἐπὶ τοῦ
bubble being which-very happens also in-the-case-of the

ὕδατος καὶ τοῦ ἐλαίου μιγνυμένων καὶ τριβομένων, καθάπερ
water and the oil being-mixed and being-rubbed just-as
ἐλέχθη πρότερον. Ἔοικε δὲ οὐδὲ τοὺς ἀρχαίους λανθάνειν
was-said before Seems and not-even the ancients to-escape-notice
ἀφρώδης ἡ τοῦ σπέρματος οὖσα φύσις· τὴν γοῦν κυρίαν
foamy the of-the seed being nature the at-any-rate sovereign
θεὸν τῆς μίξεως ἀπὸ τῆς δυνάμεως ταύτης προσηγόρευσαν.
goddess of-the union from the power this they-named
Ἡ μὲν οὖν αἰτία τῆς λεχθείσης ἀπορίας εἴρηται, φανερὸν
The indeed then cause of-the said puzzle has-been-told evident
δὲ ὅτι διὰ τοῦτ᾽ οὐδὲ πήγνυται· ὁ γὰρ ἀὴρ ἄπηκτος.
and that because-of this not-even freezes the for air unfreezable

III · THE SOUL IN THE SEED

None of the semen becomes part of the fetus: its body dissolves into breath, as the fig juice setting milk does. The fetus has nutritive, perceptive, and rational soul in potential before in act; a power acting through a body cannot enter from outside, so only intellect, the divine, does. Soul shares a body diviner than the elements, the breath in the semen, like the stars' element; this, not fire, makes seed fertile. The female's residue has all parts in potential but not soul's principle, so wind-eggs never live.

Τούτου δ᾽ ἐχόμενόν ἐστιν ἀπορῆσαι καὶ εἰπεῖν, εἰ τῶν
Of-this and next it-is to-puzzle and to-say if of-the
προϊεμένων εἰς τὸ θῆλυ γονὴν μηθὲν μόριόν ἐστι τὸ εἰσελθὸν
emitting into the female semen no part is the having-entered
τοῦ γιγνομένου κυήματος, ποῦ τρέπεται τὸ σωματῶδες
of-the coming-to-be fetus where is-turned the bodily
αὐτοῦ, εἴπερ ἐργάζεται τῇ δυνάμει τῇ ἐνούσῃ ἐν αὐτῷ.
of-it if-indeed it-works by-the power the being-in in it

Διορίσαι τε δεῖ πότερον μεταλαμβάνει τὸ συνιστάμενον
To-determine both one-must whether takes-share the being-constituted
ἐν τῷ θήλει ἀπὸ τοῦ εἰσελθόντος τι ἢ οὐθέν, καὶ
in the female from the having-entered something or nothing and
περὶ ψυχῆς καθ' ἣν λέγεται ζῷον (ζῷον δ' ἐστὶ κατὰ τὸ
about soul by which is-called animal animal and is by the
μόριον τῆς ψυχῆς τὸ αἰσθητικόν) πότερον ἐνυπάρχει τῷ
part of-the soul the perceptive whether is-present-in in-the
σπέρματι καὶ τῷ κυήματι ἢ οὔ, καὶ πόθεν. Οὔτε γὰρ ὡς
seed and in-the fetus or not and whence Neither for as
ἄψυχον ἂν θείη τις τὸ κύημα κατὰ πάντα τρόπον
soulless — would-posit someone the fetus in every way
ἐστερημένον ζωῆς· οὐδὲν γὰρ ἧττον τά τε σπέρματα
deprived of-life nothing for less the both seeds
καὶ τὰ κυήματα τῶν ζῴων ζῇ τῶν φυτῶν, καὶ γόνιμα
and the fetuses of-the animals live than-the plants and fertile
μέχρι τινός ἐστιν. Ὅτι μὲν οὖν τὴν θρεπτικὴν ἔχουσι
up-to some-point are That indeed then the nutritive they-have
ψυχήν, φανερόν (δι' ὅτι δὲ ταύτην πρῶτον ἀναγκαῖόν
soul evident because-of what but this first necessary
ἐστι λαβεῖν, ἐκ τῶν περὶ ψυχῆς διωρισμένων ἐν ἄλλοις
it-is to-take from the about soul distinguished in other-works
φανερόν)· προϊόντα δὲ καὶ τὴν αἰσθητικήν, καθ' ἣν ζῷον.
evident going-on and also the perceptive by which animal
Οὐ γὰρ ἅμα γίνεται ζῷον καὶ ἄνθρωπος οὐδὲ ζῷον καὶ
Not for at-once becomes animal and man nor animal and
ἵππος, ὁμοίως δὲ καὶ ἐπὶ τῶν ἄλλων ζῴων· ὕστερον
horse likewise and also in-the-case-of the other animals later
γὰρ γίνεται τὸ τέλος, τὸ δ' ἴδιόν ἐστι τὸ ἑκάστου
for comes-to-be the end the and peculiar is the of-each
τῆς γενέσεως τέλος. Διὸ καὶ περὶ νοῦ, πότε καὶ
of-the generation end Wherefore also about intellect when and

πῶς μεταλαμβάνει καὶ πόθεν τὰ μετέχοντα ταύτης τῆς
how take-share and whence the sharing of-this the
ἀρχῆς, ἔχει τ' ἀπορίαν πλείστην, καὶ δεῖ προθυμεῖσθαι
principle has both puzzle most and one-must to-be-eager
κατὰ δύναμιν λαβεῖν καὶ καθ' ὅσον ἐνδέχεται. Τὴν
according-to power to-grasp and by as-much-as it-is-possible The
μὲν οὖν θρεπτικὴν ψυχὴν τὰ σπέρματα καὶ τὰ κυήματα
indeed then nutritive soul the seeds and the fetuses
τὰ χωριστὰ δῆλον ὅτι δυνάμει μὲν ἔχοντα θετέον,
the separate clear that in-potentiality indeed having must-be-posited
ἐνεργείᾳ δ' οὐκ ἔχοντα, πρὶν ἢ καθάπερ τὰ χωριζόμενα
in-actuality but not having before than just-as the being-separated
τῶν κυημάτων ἕλκει τὴν τροφὴν καὶ ποιεῖ τὸ τῆς τοιαύτης
of-the fetuses draws the nourishment and does the of-the such
ψυχῆς ἔργον. Πρῶτον μὲν γὰρ ἅπαντ' ἔοικε ζῆν τὰ
soul work First indeed for all seem to-live the
τοιαῦτα φυτοῦ βίον, ἑπομένως δὲ δῆλον ὅτι καὶ περὶ τῆς
such of-plant life consequently and clear that also about the
αἰσθητικῆς λεκτέον ψυχῆς καὶ περὶ τῆς νοητικῆς. Πάσας
perceptive must-be-said soul and about the intellective All
γὰρ ἀναγκαῖον δυνάμει πρότερον ἔχειν ἢ ἐνεργείᾳ.
for necessary in-potentiality earlier to-have than in-actuality
Ἀναγκαῖον δὲ ἤτοι μὴ οὔσας πρότερον ἐγγίνεσθαι πάσας,
Necessary and either not being earlier to-come-to-be-in all
ἢ πάσας προϋπαρχούσας, ἢ τὰς μὲν τὰς δὲ μή, καὶ
or all pre-existing or the-ones indeed the-others and not and
ἐγγίνεσθαι ἢ ἐν τῇ ὕλῃ μὴ εἰσελθούσας ἐν τῷ τοῦ
to-come-to-be-in either in the matter not having-entered in the of-the
ἄρρενος σπέρματι, ἢ ἐνταῦθα μὲν ἐκεῖθεν ἐλθούσας, ἐν δὲ
male seed or here indeed from-there having-come in and
τῷ ἄρρενι ἢ θύραθεν ἐγγινομένας ἁπάσας ἢ μηδεμίαν
the male either from-outside coming-to-be-in all or none

ἢ τὰς μὲν τὰς δὲ μή. Ὅτι μὲν τοίνυν οὐχ οἷόν
or the-ones indeed the-others and not That indeed then not possible
τε πάσας προϋπάρχειν, φανερόν ἐστιν ἐκ τῶν τοιούτων.
— all to-pre-exist evident is from the such
Ὅσων γάρ ἐστιν ἀρχῶν ἡ ἐνέργεια σωματική, δῆλον
Of-as-many-as for is of-principles the activity bodily clear
ὅτι ταύτας ἄνευ σώματος ἀδύνατον ὑπάρχειν, οἷον
that these without body impossible to-belong such-as
βαδίζειν ἄνευ ποδῶν· ὥστε καὶ θύραθεν εἰσιέναι ἀδύνατον.
to-walk without feet so-that also from-outside to-enter impossible
Οὔτε γὰρ αὐτὰς καθ' αὑτὰς εἰσιέναι οἷόν τε ἀχωρίστους
Neither for themselves by themselves to-enter possible — inseparable
οὔσας, οὔτ' ἐν σώματι εἰσιέναι· τὸ γὰρ σπέρμα περίττωμα
being nor in body to-enter the for seed residue
μεταβαλλούσης τῆς τροφῆς ἐστίν. Λείπεται δὲ τὸν νοῦν
changing the nourishment is It-remains and the intellect
μόνον θύραθεν ἐπεισιέναι καὶ θεῖον εἶναι μόνον· οὐθὲν
alone from-outside to-enter-besides and divine to-be alone nothing
γὰρ αὐτοῦ τῇ ἐνεργείᾳ κοινωνεῖ σωματικὴ ἐνέργεια.
for of-it with-the activity shares bodily activity
Πάσης μὲν οὖν ψυχῆς δύναμις ἑτέρου σώματος ἔοικε
Of-every indeed then soul power other body seems
κεκοινωνηκέναι καὶ θειοτέρου τῶν καλουμένων στοιχείων·
to-have-shared and more-divine than-the so-called elements
ὡς δὲ διαφέρουσι τιμιότητι αἱ ψυχαὶ καὶ ἀτιμίᾳ ἀλλήλων,
as but differ in-honor the souls and dishonor from-one-another
οὕτω καὶ ἡ τοιαύτη διαφέρει φύσις.
so also the such differs nature
Πάντων μὲν γὰρ ἐν τῷ σπέρματι ἐνυπάρχει, ὅπερ
Of-all indeed for in the seed is-present-in which-very
ποιεῖ γόνιμα εἶναι τὰ σπέρματα, τὸ καλούμενον θερμόν.
makes fertile to-be the seeds the so-called hot

Τοῦτο δ' οὐ πῦρ οὐδὲ τοιαύτη δύναμίς ἐστιν, ἀλλὰ τὸ
This and not fire nor such power is but the
ἐμπεριλαμβανόμενον ἐν τῷ σπέρματι καὶ ἐν τῷ ἀφρώδει
enclosed in the seed and in the foamy
πνεῦμα καὶ ἡ ἐν τῷ πνεύματι φύσις, ἀνάλογον οὖσα τῷ
breath and the in the breath nature analogous being to-the
τῶν ἄστρων στοιχείῳ. Διὸ πῦρ μὲν οὐθὲν γεννᾷ ζῷον,
of-the stars element Wherefore fire indeed no generates animal
οὐδὲ φαίνεται συνιστάμενον πυρουμένοις οὔτ' ἐν ὑγροῖς
nor appears being-constituted in-things-burned neither in moist
οὔτ' ἐν ξηροῖς οὐθέν· ἡ δὲ τοῦ ἡλίου θερμότης καὶ ἡ
nor in dry nothing the but of-the sun heat and the
τῶν ζῴων οὐ μόνον ἡ διὰ τοῦ σπέρματος, ἀλλὰ κἂν
of-the animals not only the through the seed but even-if
τι περίττωμα τύχῃ τῆς φύσεως ὂν ἕτερον, ὅμως ἔχει
some residue happen of-the nature being other nevertheless has
καὶ τοῦτο ζωτικὴν ἀρχήν. Ὅτι μὲν οὖν ἡ ἐν τοῖς ζῴοις
also this vital principle That indeed then the in the animals
θερμότης οὔτε πῦρ οὔτε ἀπὸ πυρὸς ἔχει τὴν ἀρχήν, ἐκ
heat neither fire nor from fire has the principle from
τῶν τοιούτων ἐστὶ φανερόν· τὸ δὲ τῆς γονῆς σῶμα, ἐν
the such is evident the and of-the semen body in
ᾧ συναπέρχεται τὸ σπέρμα τὸ τῆς ψυχικῆς ἀρχῆς, τὸ
which goes-away-with the seed the of-the soul principle the-one
μὲν χωριστὸν ὂν σώματος, ὅσοις ἐμπεριλαμβάνεται
indeed separate being from-body in-as-many-as is-enclosed
τὸ θεῖον (τοιοῦτος δ' ἐστὶν ὁ καλούμενος νοῦς), τὸ δ'
the divine such and is the so-called intellect the but
ἀχώριστον, τοῦτο τὸ σπέρμα τῆς γονῆς διαλύεται καὶ
inseparable this the seed of-the semen is-dissolved and
πνευματοῦται, φύσιν ἔχον ὑγρὰν καὶ ὑδατώδη.
becomes-breath nature having moist and watery

Διόπερ οὐ δεῖ ζητεῖν ἀεὶ θύραζε αὐτὸ ἐξιέναι, οὐδὲ
Wherefore not one-must to-seek always outside it to-come-out nor
μόριον οὐθὲν εἶναι τῆς συστάσης μορφῆς, ὥσπερ οὐδὲ τὸν
part any to-be of-the constituted shape just-as not-even the
ὀπὸν τὸν τὸ γάλα συνιστάντα· καὶ γὰρ οὗτος μεταβάλλει
fig-juice the the milk setting and for this changes
καὶ μόριον οὐθέν ἐστι τῶν συνισταμένων ὄγκων. Περὶ μὲν
and part none is of-the being-constituted bulks About indeed
οὖν ψυχῆς, πῶς ἔχει τὰ κυήματα καὶ ἡ γονὴ καὶ πῶς
then soul how have the fetuses and the semen and how
οὐκ ἔχει, διώρισται· δυνάμει μὲν γὰρ ἔχει, ἐνεργείᾳ
not have it-has-been-determined in-potentiality indeed for they-have in-actuality
δ' οὐκ ἔχει. Τοῦ δὲ σπέρματος ὄντος περιττώματος καὶ
but not they-have Of-the and seed being residue and
κινουμένου κίνησιν τὴν αὐτὴν καθ' ἥνπερ τὸ σῶμα αὐξάνεται
being-moved motion the same by which-very the body grows
μεριζομένης τῆς ἐσχάτης τροφῆς, ὅταν ἔλθῃ εἰς τὴν ὑστέραν,
being-divided the last nourishment when it-come into the uterus
συνίστησι καὶ κινεῖ τὸ περίττωμα τὸ τοῦ θήλεος τὴν αὐτὴν
it-constitutes and moves the residue the of-the female the same
κίνησιν ἥνπερ αὐτὸ τυγχάνει κινούμενον κἀκεῖνο. Καὶ
motion which-very itself happens being-moved also-that And
γὰρ ἐκεῖνο περίττωμα, καὶ πάντα τὰ μόρια ἔχει δυνάμει,
for that residue and all the parts has in-potentiality
ἐνεργείᾳ δ' οὐθέν, καὶ γὰρ τὰ τοιαῦτ' ἔχει μόρια δυνάμει,
in-actuality but none and for the such it-has parts in-potentiality
ᾗ διαφέρει τὸ θῆλυ τοῦ ἄρρενος. Ὥσπερ γὰρ καὶ ἐκ
in-which differs the female from-the male Just-as for also from
πεπηρωμένων ὁτὲ μὲν γίνεται πεπηρωμένα ὁτὲ δ' οὔ,
maimed at-times indeed become maimed at-times but not
οὕτω καὶ ἐκ θήλεος ὁτὲ μὲν θῆλυ, ὁτὲ δ' οὔ, ἀλλ' ἄρρεν.
so also from female at-times indeed female at-times but not but male

Τὸ γὰρ θῆλυ ὥσπερ ἄρρεν ἐστὶ πεπηρωμένον, καὶ τὰ
The for female just-as male is maimed and the
καταμήνια σπέρμα, οὐ καθαρὸν δέ. Ἓν γὰρ οὐκ ἔχει μόνον,
menses seed not pure but One for not it-has only
τὴν τῆς ψυχῆς ἀρχήν. Καὶ διὰ τοῦτο ὅσοις ὑπηνέμια
the of-the soul principle And because-of this in-as-many-as wind-eggs
γίνεται τῶν ζῴων, ἀμφοτέρων ἔχει τὰ μέρη τὸ συνιστάμενον
occur of-the animals of-both has the parts the being-constituted
ᾠόν, ἀλλὰ τὴν ἀρχὴν οὐκ ἔχει, διὸ οὐ γίνεται ἔμψυχον·
egg but the principle not it-has wherefore not it-becomes ensouled
ταύτην γὰρ τὸ τοῦ ἄρρενος ἐπιφέρει σπέρμα. Ὅταν δὲ
this for the of-the male brings-in seed When and
μετάσχῃ τοιαύτης ἀρχῆς τὸ περίττωμα τὸ τοῦ θήλεος,
it-share such principle the residue the of-the female
κύημα γίνεται. Τοῖς δ' ὑγροῖς μὲν σωματώδεσι δὲ
fetus it-becomes For-the and moist indeed bodily but
θερμαινομένοις περιίσταται, καθάπερ ἐν τοῖς ἑψήμασι
being-heated forms-around just-as in the boiled-things
ψυχομένοις τὸ περίξηρον. Πάντα δὲ τὰ σώματα συνέχει
being-cooled the dry-crust All and the bodies holds-together
τὸ γλίσχρον· ὅπερ καὶ προϊοῦσι καὶ μείζοσι γιγνομένοις
the viscous which-very also advancing and larger becoming
ἡ τοῦ νεύρου λαμβάνει φύσις, ἥπερ συνέχει τὰ μόρια
the of-the sinew takes nature which-very holds-together the parts
τῶν ζῴων, ἐν μὲν τοῖς οὖσα νεῦρον, ἐν δὲ τοῖς τὸ
of-the animals in indeed the-ones being sinew in but the-others the
ἀνάλογον. Τῆς δ' αὐτῆς μορφῆς ἐστὶ καὶ δέρμα καὶ φλὲψ
analogous Of-the and same shape is both skin and vein
καὶ ὑμὴν καὶ πᾶν τὸ τοιοῦτον γένος· διαφέρει γὰρ ταῦτα
and membrane and all the such kind differ for these
τῷ μᾶλλον καὶ ἧττον καὶ ὅλως ἐν ὑπεροχῇ καὶ ἐλλείψει.
by-the more and less and generally in excess and deficiency

The menses gather in the uterus from the fine veins that end there, a residue the female is too cold to concoct, and the male's semen sets them as rennet sets milk: the female supplies the matter and the body, the male the motion and the soul, so hybrids end in the female's shape. Conception can happen without her usual pleasure, and the woman emits no seed, for nature does nothing superfluous. The heart forms first, not the outer parts as Democritus says; the embryo grows through the navel as a plant through its roots. The nutritive soul is also the generative, and where the sexes are separate the male needs the female.

Τῶν δὲ ζῴων τὰ μὲν ἀτελεστέραν ἔχοντα τὴν φύσιν,
Of-the and animals the-ones indeed more-incomplete having the nature
ὅταν γένηται κύημα τέλειον, ζῷον δὲ μήπω τέλειον θύραζε
when come-to-be fetus complete animal but not-yet complete outside
προΐεται· δι' ἃς δ' αἰτίας εἴρηται πρότερον. Τέλειον
emit because-of which but causes it-has-been-said before Complete
δ' ἤδη τότ' ἐστίν, ὅταν τὸ μὲν ἄρρεν ᾖ τὸ δὲ θῆλυ
and already then it-is when the indeed male it-be the-other and female
τῶν κυημάτων, ἐν ὅσοις ἐστὶν αὕτη ἡ διαφορὰ τῶν
of-the fetuses in as-many-as is this the difference of-the
γινομένων· ἔνια γὰρ οὔτε θῆλυ γεννᾷ οὔτ' ἄρρεν, ὅσα
coming-to-be some for neither female generate nor male as-many-as
μηδ' αὐτὰ γίνεται ἐκ θήλεος καὶ ἄρρενος μηδ' ἐκ ζῴων
not-even themselves come-to-be from female and male nor from animals
μιγνυμένων. Καὶ περὶ μὲν τῆς τούτων γενέσεως ὕστερον
mixing And about indeed the of-these generation later
ἐροῦμεν· τὰ δὲ ζῳοτοκοῦντα ἐν αὑτοῖς τὰ τέλεια τῶν ζῴων,
we-shall-speak the but bearing-live in themselves the complete of-the animals
μέχρι περ ἂν οὗ γεννήσῃ ζῷον καὶ θύραζε ἐκπέμψῃ, ἔχει
until indeed — which it-generate animal and outside send-forth have
συμφυὲς ἐν αὑτῷ τὸ γιγνόμενον ζῷον. Ὅσα δὲ θύραζε
grown-together in itself the coming-to-be animal As-many-as but outside

μὲν ζῳοτοκεῖ ἐν αὑτοῖς δ' ᾠοτοκεῖ τὸ πρῶτον, ὅταν
indeed bear-live in themselves but lay-eggs the first when
γεννήσῃ τὸ ᾠὸν τέλειον, τούτων ἐνίων μὲν ἀπολύεται τὸ
it-generate the egg complete of-these in-some indeed is-loosed the
ᾠὸν ὥσπερ τῶν θύραζε ᾠοτοκούντων, καὶ τὸ ζῷον ἐκ
egg just-as of-the outside laying-eggs and the animal from
τοῦ ᾠοῦ γίνεται ἐν τῷ θήλει, ἐνίων δ' ὅταν καταναλωθῇ
the egg comes-to-be in the female in-some but when be-used-up
ἡ ἐκ τοῦ ᾠοῦ τροφή, τελειοῦται ἀπὸ τῆς ὑστέρας, καὶ
the from the egg nourishment it-is-completed from the uterus and
διὰ τοῦτο οὐκ ἀπολύεται τὸ ᾠὸν ἀπὸ τῆς ὑστέρας.
because-of this not is-loosed the egg from the uterus
Ταύτην δ' ἔχουσι τὴν διαφορὰν οἱ σελαχώδεις ἰχθύες, περὶ
This and have the difference the selachian fish about
ὧν ὕστερον καθ' αὑτὰ λεκτέον. Νῦν δ' ἀπὸ τῶν πρώτων
which later by themselves must-be-said Now but from the first
ἀρκτέον πρῶτον. Ἔστι δὲ τὰ τέλεια ζῷα πρῶτα,
one-must-begin first Are and the complete animals first
τοιαῦτα δὲ τὰ ζῳοτοκοῦντα, καὶ τούτων ἄνθρωπος πρῶτον.
such and the bearing-live and of-these man first
Ἡ μὲν οὖν ἀπόκρισις γίνεται πᾶσι τοῦ σπέρματος ὥσπερ
The indeed then secretion comes-about in-all of-the seed just-as
ἄλλου τινὸς περιττώματος. Φέρεται γὰρ ἕκαστον εἰς τὸν
of-other some residue Is-carried for each to the
οἰκεῖον τόπον οὐθὲν ἀποβιαζομένου τοῦ πνεύματος, οὐδ'
proper place nothing forcing the breath nor
ἄλλης αἰτίας τοιαύτης ἀναγκαζούσης, ὥσπερ τινές φασιν,
other cause such compelling just-as some say
ἕλκειν τὰ αἰδοῖα φάσκοντες ὥσπερ τὰς σικύας, τῷ τε
to-draw the genitals asserting just-as the cupping-glasses with-the both
πνεύματι βιαζομένων, ὥσπερ ἐνδεχόμενον ἄλλοθί που
breath forcing just-as it-being-possible elsewhere somewhere

πορευθῆναι μὴ βιασαμένων ταύτην τὴν περίττωσιν τὴν τῆς
to-travel not having-forced this the residue the of-the
ὑγρᾶς ἢ ξηρᾶς τροφῆς, ὅτι τὰς ἐξόδους αὐτῶν ἠθροισμένῳ
moist or dry nourishment because the outlets of-them with-collected
τῷ πνεύματι συνεκκρίνουσιν, τοῦτο δὲ κοινὸν κατὰ
the breath they-excrete-together this and common in-respect-of
πάντων ὅσα δεῖ κινῆσαι· διὰ γὰρ τοῦ τὸ πνεῦμα
all as-many-as one-must to-move through for the the breath
κατασχεῖν ἡ ἰσχὺς ἐγγίνεται, ἐπεὶ καὶ ἄνευ ταύτης τῆς
to-hold the strength comes-in since also without this the
βίας ἐκκρίνεται τὰ περιττώματα καὶ καθεύδουσι, ἂν ἄνετοί
force are-excreted the residues and for-those-sleeping if relaxed
τε καὶ πλήρεις περιττώματος οἱ τόποι τύχωσιν ὄντες.
both and full of-residue the places happen being
Ὅμοιον δὲ κἂν εἴ τις φαίη τοῖς φυτοῖς ὑπὸ τοῦ
Like and even if anyone should-say for-the plants by the
πνεύματος ἑκάστοτε τὰ σπέρματα ἀποκρίνεσθαι πρὸς τοὺς
breath each-time the seeds to-be-secreted to the
τόπους πρὸς οὓς εἴωθε φέρειν τὸν καρπόν. Ἀλλὰ τούτου
places to which it-is-wont to-bear the fruit But of-this
μὲν αἴτιον, ὥσπερ εἴρηται, τὸ πᾶσιν εἶναι μόρια δεκτικὰ
indeed cause just-as has-been-said the for-all to-be parts receptive
τοῖς περιττώμασι, τοῖς τ' ἀχρήστοις, οἷον τῇ τε ξηρᾷ
to-the residues to-the both useless such-as to-the both dry
καὶ τῇ ὑγρᾷ, καὶ τῷ αἵματι τὰς καλουμένας φλέβας. Τοῖς
and to-the moist and to-the blood the so-called veins For-the
μὲν οὖν θήλεσι περὶ τὸν τῶν ὑστερῶν τόπον, σχιζομένων
indeed then females about the of-the uteri place being-split
ἄνωθεν τῶν δύο φλεβῶν, τῆς τε μεγάλης καὶ τῆς ἀορτῆς,
from-above of-the two veins of-the both great and of-the aorta
πολλαὶ καὶ λεπταὶ φλέβες τελευτῶσιν εἰς τὰς ὑστέρας,
many and fine veins end into the uteri

ὧν ὑπερπληρουμένων ἐκ τῆς τροφῆς, καὶ τῆς φύσεως
which being-overfilled from the nourishment and of-the nature
διὰ ψυχρότητα πέττειν οὐ δυναμένης, ἐκκρίνεται διὰ
because-of coldness to-concoct not being-able is-excreted through
λεπτοτάτων φλεβῶν εἰς τὰς ὑστέρας, οὐ δυναμένων διὰ
finest veins into the uteri not being-able because-of
τὴν στενοχωρίαν δέχεσθαι τὴν ὑπερβολὴν τοῦ πλήθους,
the narrowness to-receive the excess of-the quantity
καὶ γίνεται τὸ πάθος οἷον αἱμορροΐς. Ἀκριβῶς μὲν οὖν ἡ
and comes-about the affection like hemorrhage Exactly indeed then the
περίοδος οὐ τέτακται ταῖς γυναιξί, βούλεται δὲ φθινόντων
period not has-been-fixed for-the women it-tends but waning
γίνεσθαι τῶν μηνῶν εὐλόγως· ψυχρότερα γὰρ τὰ σώματα
to-come-about the months reasonably colder for the bodies
τῶν ζῴων, ὅταν καὶ τὸ περιέχον συμβαίνῃ γίγνεσθαι
of-the animals when also the surrounding happen to-become
τοιοῦτον, αἱ δὲ τῶν μηνῶν σύνοδοι ψυχραὶ διὰ τὴν
such the and of-the months conjunctions cold because-of the
τῆς σελήνης ἀπόλειψιν, διόπερ καὶ χειμερίους συμβαίνει
of-the moon failing wherefore also wintry it-happens
τὰς συνόδους εἶναι τῶν μηνῶν μᾶλλον ἢ τὰς μεσότητας.
the conjunctions to-be of-the months more than the middles
Μεταβεβληκότος μὲν οὖν εἰς αἷμα τοῦ περιττώματος
Having-changed indeed then into blood the residue
βούλεται γίγνεσθαι τὰ καταμήνια κατὰ τὴν εἰρημένην
tend to-come-about the menses according-to the said
περίοδον, μὴ πεπεμμένου δὲ κατὰ μικρὸν ἀεί τι
period not concocted but by little always something
ἀποκρίνεται· διὸ τὰ λευκὰ μικροῖς ἔτι καὶ παιδίοις οὖσι
is-secreted wherefore the whites to-small still and children being
γίνεται τοῖς θήλεσιν. Μετριάζουσαι μὲν οὖν ἀμφότεραι
occur in-the females Being-moderate indeed then both

αὗται αἱ ἀποκρίσεις τῶν περιττωμάτων τὰ σώματα
these the secretions of-the residues the bodies
σώζουσιν, ἅτε γιγνομένης καθάρσεως τῶν περιττωμάτων,
preserve since coming-about purging of-the residues
ἃ τοῦ νοσεῖν αἴτια τοῖς σώμασιν· μὴ γινομένων δὲ ἢ
which of-the being-ill causes for-the bodies not occurring but or
πλειόνων γιγνομένων βλάπτει· ποιεῖ γὰρ ἢ νόσους ἢ τῶν
more occurring it-harms it-makes for either diseases or of-the
σωμάτων καθαίρεσιν, διὸ καὶ τὰ λευκὰ συνεχῶς γινόμενα
bodies reduction wherefore also the whites continuously occurring
καὶ πλεονάζοντα τὴν αὔξησιν ἀφαιρεῖται τῶν παιδίων. Ἐξ
and being-in-excess the growth take-away of-the children From
ἀνάγκης μὲν οὖν ἡ περίττωσις αὕτη γίνεται τοῖς θήλεσι
necessity indeed then the residue this comes-about in-the females
διὰ τὰς εἰρημένας αἰτίας· μὴ δυναμένης τε γὰρ πέττειν
because-of the said causes not being-able both for to-concoct
τῆς φύσεως ἀνάγκη περίττωμα γίγνεσθαι μὴ μόνον τῆς
the nature necessary residue to-come-about not only of-the
ἀχρήστου τροφῆς, ἀλλὰ καὶ ἐν ταῖς φλεψίν, ὑπερβάλλειν τε
useless nourishment but also in the veins to-exceed both
πληθύνοντα κατὰ τὰς λεπτοτάτας φλέβας. Ἕνεκα δὲ τοῦ
abounding in the finest veins For-the-sake and of-the
βελτίονος καὶ τοῦ τέλους ἡ φύσις καταχρῆται πρὸς τὸν
better and of-the end the nature uses to the
τόπον τοῦτον τῆς γενέσεως χάριν, ὅπως οἷον ἔμελλε
place this of-the generation for-the-sake that of-what-sort it-was-to-be
τοιοῦτον γένηται ἕτερον· ἤδη γὰρ ὑπάρχει δυνάμει γε
such it-become other already for belongs in-potentiality at-least
ὂν τοιοῦτον οἷου πέρ ἐστι σώματος ἀπόκρισις.
being such of-what-sort indeed it-is body secretion

Τοῖς μὲν οὖν θήλεσιν ἅπασιν ἀναγκαῖον γίγνεσθαι
In-the indeed then females all necessary to-come-about
περίττωμα, τοῖς μὲν αἱματικοῖς πλεῖον, καὶ τούτων ἀνθρώπῳ
residue in-the indeed sanguineous more and of-these in-man
πλεῖστον· ἀνάγκη δὲ καὶ τοῖς ἄλλοις ἀθροίζεσθαί τινα
most necessary and also for-the others to-be-collected some
σύστασιν εἰς τὸν ὑστερικὸν τόπον. Τὸ δ' αἴτιον, ὅτι τοῖς θ'
constitution into the uterine place The and cause that for-the both
αἱματικοῖς πλεῖον καὶ τούτων ὅτι πλεῖστον τοῖς ἀνθρώποις,
sanguineous more and of-these that most for-the men
εἴρηται πρότερον· τοῦ δ' ἐν μὲν τοῖς θήλεσι πᾶσιν
has-been-said before of-the and in indeed the females all
ὑπάρχειν περίττωμα τοιοῦτον, ἐν δὲ τοῖς ἄρρεσι μὴ πᾶσιν,
to-belong residue such in but the males not all
ἔνια γὰρ οὐ προΐεται γονήν, ἀλλ' ὥσπερ τὰ προειρημένα τῇ
some for not emit semen but just-as the aforesaid by-the
ἐν τῇ γονῇ κινήσει δημιουργεῖ τὸ συνιστάμενον ἐκ τῆς ἐν
in the semen motion fashion the being-constituted from the in
τοῖς θήλεσιν ὕλης, οὕτω τὰ τοιαῦτα ἐν τῇ ἐν αὑτοῖς κινήσει
the females matter so the such in the in themselves motion
ἐν τῷ μορίῳ τούτῳ, ὅθεν ἀποκρίνεται τὸ σπέρμα, ταὐτὸ
in the part this whence is-secreted the seed the-same
ποιεῖ καὶ συνίστησιν. Τοῦτο δ' ἐστὶν ὁ τόπος ὁ περὶ τὸ
does and constitutes This and is the place the about the
ὑπόζωμα πᾶσι τοῖς ἔχουσιν· ἀρχὴ γὰρ τῆς φύσεως ἡ καρδία
diaphragm for-all the having principle for of-the nature the heart
καὶ τὸ ἀνάλογον, τὸ δὲ κάτω προσθήκη καὶ τούτου χάριν.
and the analogous the and below addition and of-this for-the-sake
Αἴτιον δὴ τοῦ τοῖς μὲν ἄρρεσι μὴ πᾶσιν εἶναι περίττωμα
Cause indeed of-the for-the indeed males not all to-be residue
γεννητικόν, τοῖς δὲ θήλεσι πᾶσιν, ὅτι τὸ ζῷον σῶμα
generative for-the but females all that the animal body

ἔμψυχόν ἐστιν. Ἀεὶ δὲ παρέχει τὸ μὲν θῆλυ τὴν ὕλην, τὸ
ensouled is Always and provides the indeed female the matter the
δ' ἄρρεν τὸ δημιουργοῦν· ταύτην γὰρ αὐτῶν φαμὲν ἔχειν
and male the fashioning this for of-them we-say to-have
τὴν δύναμιν ἑκάτερον, καὶ τὸ εἶναι τὸ μὲν θῆλυ τὸ
the power each and the being the-one indeed female the-other
δ' ἄρρεν τοῦτο. Ὥστε τὸ μὲν θῆλυ ἀναγκαῖον παρέχειν
and male this So-that the indeed female necessary to-provide
σῶμα καὶ ὄγκον, τὸ δ' ἄρρεν οὐκ ἀναγκαῖον· οὔτε γὰρ
body and bulk the but male not necessary neither for
τὰ ὄργανα ἀνάγκη ἐνυπάρχειν ἐν τοῖς γιγνομένοις οὔτε τὸ
the instruments necessary to-be-present-in in the coming-to-be nor the
ποιοῦν. Ἔστι δὲ τὸ μὲν σῶμα ἐκ τοῦ θήλεος, ἡ δὲ ψυχὴ
maker Is and the indeed body from the female the but soul
ἐκ τοῦ ἄρρενος· ἡ γὰρ ψυχὴ οὐσία σώματός τινός ἐστιν.
from the male the for soul substance of-body some is
Καὶ διὰ τοῦτο ὅσα τῶν μὴ ὁμογενῶν μίγνυται θῆλυ
And because-of this as-many-as of-the not same-kind mix female
καὶ ἄρρεν (μίγνυται δὲ ὧν ἴσοι οἱ χρόνοι καὶ ἐγγὺς αἱ
and male mix and of-which equal the times and near the
κυήσεις, καὶ τὰ μεγέθη τῶν σωμάτων μὴ πολὺ διέστηκεν),
gestations and the sizes of-the bodies not much stand-apart
τὸ μὲν πρῶτον κατὰ τὴν ὁμοιότητα γίγνεται κοινὸν
the indeed first by the likeness comes-to-be common
ἀμφοτέρων, οἷον τὰ γιγνόμενα ἐξ ἀλώπεκος καὶ κυνὸς καὶ
of-both such-as the coming-to-be from fox and dog and
πέρδικος καὶ ἀλεκτρυόνος, προϊόντος δὲ τοῦ χρόνου καὶ ἐξ
partridge and cock going-on but the time and from
ἑτέρων ἕτερα γιγνόμενα τέλος ἀποβαίνει κατὰ τὸ θῆλυ τὴν
others others coming-to-be finally turns-out by the female the
μορφήν, ὥσπερ τὰ σπέρματα τὰ ξενικὰ κατὰ τὴν χώραν.
shape just-as the seeds the foreign by the land

Αὕτη γὰρ ἡ τὴν ὕλην παρέχουσα καὶ τὸ σῶμα τοῖς
This for the the matter providing and the body to-the
σπέρμασιν ἐστίν. Καὶ διὰ τοῦτο τοῖς μὲν θήλεσι τὸ
seeds is And because-of this for-the indeed females the
μόριον τὸ δεκτικὸν οὐ πόρος ἐστίν, ἀλλ' ἔχουσι διάστασιν
part the receptive not duct is but have cavity
αἱ ὑστέραι· τοῖς δ' ἄρρεσι πόροι τοῖς σπέρμα προϊεμένοις,
the uteri for-the but males ducts for-those seed emitting
ἄναιμοι δ' οὗτοι, τῶν δὲ περιττωμάτων ἕκαστον ἅμα ἔν τε
bloodless and these of-the and residues each at-once in both
τοῖς οἰκείοις τόποις ἐστὶ καὶ γίγνεται περίττωμα· πρότερον
the proper places is and becomes residue before
δ' οὐθέν, ἂν μή τι βίᾳ πολλῇ καὶ παρὰ φύσιν.
but nothing if not something by-force much and contrary-to nature
Δι' ἣν μὲν οὖν αἰτίαν ἀποκρίνεται τὰ περιττώματα τὰ
Because-of which indeed then cause are-secreted the residues the
γεννητικὰ τοῖς ζῴοις, εἴρηται. Ὅταν δ' ἔλθῃ τὸ σπέρμα
generative in-the animals it-has-been-said When but come the seed
ἀπὸ τοῦ ἄρρενος τῶν σπέρμα προϊεμένων, συνίστησι τὸ
from the male of-the seed emitting it-constitutes the
καθαρώτατον τοῦ περιττώματος. Τὸ γὰρ πλεῖστον ἄχρηστον
purest of-the residue The for most useless
καὶ ἐν τοῖς καταμηνίοις ἐστὶν ὑγρόν, ὥσπερ καὶ τῆς τοῦ
and in the menses is moist just-as also of-the of-the
ἄρρενος γονῆς τὸ ὑγρότατον, καὶ τῆς εἰσάπαξ προέσεως·
male semen the most-moist and of-the at-once emission
καὶ ἡ προτέρα τῆς ὑστέρας ἄγονος μᾶλλον τοῖς πλείστοις·
also the earlier than-the later infertile more in-the most
ἐλάττω γὰρ ἔχει θερμότητα ψυχικὴν διὰ τὴν ἀπεψίαν,
less for it-has heat of-soul because-of the unconcoctedness
τὸ δὲ πεπεμμένον πάχος ἔχει καὶ σεσωμάτωται μᾶλλον.
the but concocted thickness has and has-become-bodily more

Ὅσαις δὲ μὴ γίνεται θύραζέ τις πρόεσις, ἢ τῶν
In-as-many-as and not comes-about outside some emission either of-the
γυναικῶν ἢ τῶν ἄλλων ζῴων, διὰ τὸ μὴ ἐνυπάρχειν
women or of-the other animals because-of the not to-be-present-in
ἄχρηστον περίττωμα πολὺ ἐν τῇ ἀποκρίσει τῇ τοιαύτῃ,
useless residue much in the secretion the such
τοσοῦτόν ἐστι τὸ ἐγγινόμενον ὅσον τὸ ὑπολειπόμενον
so-much is the coming-to-be-in as-much-as the being-left-behind
τοῖς θύραζε προϊεμένοις ζῴοις, ὃ συνίστησιν ἡ τοῦ
in-the outside emitting animals which constitutes the of-the
ἄρρενος δύναμις ἡ ἐν τῷ σπέρματι τῷ ἀποκρινομένῳ, ἢ
male power the in the seed the being-secreted or
εἰς τὸ ἄρρεν ἐλθόντος τοῦ ἀνάλογον μορίου ταῖς ὑστέραις,
into the male having-come the analogous part to-the uteri
ὥσπερ ἔν τισι τῶν ἐντόμων φαίνεται συμβαῖνον. Ὅτι δ'
just-as in some of-the insects appears happening That but
ἡ γινομένη ὑγρότης μετὰ τῆς ἡδονῆς τοῖς θήλεσιν οὐδὲν
the arising moisture with the pleasure in-the females nothing
συμβάλλεται εἰς τὸ κύημα, εἴρηται πρότερον. Μάλιστα
contributes to the fetus has-been-said before Most
δ' ἂν δόξειεν, ὅτι καθάπερ τοῖς ἄρρεσι, γίγνεται καὶ ταῖς
and — it-would-seem that just-as in-the males it-occurs also in-the
γυναιξὶ νύκτωρ ὃ καλοῦσιν ἐξονειρώττειν. Ἀλλὰ τοῦτο
women at-night what they-call to-have-wet-dreams But this
σημεῖον οὐθέν· γίνεται γὰρ καὶ τοῖς νέοις τῶν ἀρρένων τοῖς
sign none occurs for also in-the young of-the males the
μέλλουσι μὲν μηθὲν δὲ προϊεμένοις, ἢ τοῖς ἐπιπροϊεμένοις
being-about indeed nothing but emitting or in-those emitting-besides
ἄγονον. Ἄνευ μὲν οὖν τῆς τοῦ ἄρρενος προέσεως ἐν τῇ
infertile Without indeed then the of-the male emission in the

συνουσίᾳ ἀδύνατον συλλαβεῖν, καὶ ἄνευ τῆς τῶν γυναικείων
intercourse impossible to-conceive and without the of-the womanly
περιττώσεως ἢ θύραζε προελθούσης ἢ ἐντὸς ἱκανῆς οὔσης.
residue either outside having-come-forth or inside sufficient being
Οὐ συμβαινούσης μέντοι τῆς εἰωθυίας γίγνεσθαι τοῖς θήλεσιν
Not happening however the accustomed to-come-about in-the females
ἡδονῆς περὶ τὴν ὁμιλίαν τὴν τοιαύτην συλλαμβάνουσιν,
pleasure about the intercourse the such they-conceive
ἂν τύχῃ ὁ τόπος ὀργῶν καὶ καταβεβηκυῖαι αἱ ὑστέραι
if happen the place being-in-heat and having-come-down the uteri
ἐγγύς. Ἀλλ' ὡς ἐπὶ τὸ πολὺ συμβαίνει ἐκείνως διὰ τὸ
near But as for the most-part it-happens that-way because-of the
μὴ συμμεμυκέναι τὸ στόμα γινομένης τῆς ἐκκρίσεως, μεθ'
not to-have-closed the mouth coming-about the excretion with
ἧς εἴωθε γίγνεσθαι καὶ τοῖς ἄρρεσιν ἡ ἡδονὴ καὶ ταῖς
which it-is-wont to-come-about also in-the males the pleasure and in-the
γυναιξίν· οὕτω δ' ἔχοντος εὐοδεῖται μᾶλλον καὶ τῷ
women so but being the-way-is-easy more also for-the
τοῦ ἄρρενος σπέρματι. Ἡ δ' ἄφεσις οὐκ ἐντὸς γίγνεται,
of-the male seed The but discharge not inside happens
καθάπερ οἴονταί τινες (στενὸν γὰρ τὸ στόμα τῶν ὑστερῶν),
just-as think some narrow for the mouth of-the uteri
ἀλλ' εἰς τὸ πρόσθεν, οὗπερ τὸ θῆλυ προΐεται τὴν ἐν ἐνίαις
but into the front where-very the female emits the in some
αὐτῶν ἰκμάδα γινομένην, ἐνταῦθα καὶ τὸ ἄρρεν προΐεται,
of-them moisture arising there also the male emits
ἐάν τις ἐξικμάσῃ. Ὁτὲ μὲν οὖν μένει τοῦτον ἔχοντα
if anyone produce-moisture At-times indeed then it-remains this having
τὸν τρόπον, ὁτὲ δέ, ἂν τύχῃ συμμέτρως ἔχουσα καὶ
the way at-times but if it-happen proportionately being and

θερμὴ διὰ τὴν κάθαρσιν ἡ ὑστέρα, εἴσω σπᾷ. Σημεῖον
hot because-of the purgation the uterus inward draws Sign
δέ· καὶ γὰρ τὰ πρόσθεν ὑγρὰ προστεθέντα ἀφαιρεῖται ξηρά.
and and for the in-front moist applied are-removed dry
Ἔτι δὲ ὅσα τῶν ζώων πρὸς τῷ ὑποζώματι ἔχει τὰς
Further and as-many-as of-the animals at the diaphragm have the
ὑστέρας, καθάπερ ὄρνις καὶ τῶν ἰχθύων οἱ ζωοτοκοῦντες,
uteri just-as bird and of-the fish the bearing-live
ἀδύνατον ἐκεῖ μὴ σπᾶσθαι τὸ σπέρμα, ἀλλ' ἀφεθὲν
impossible there not to-be-drawn the seed but having-been-discharged
ἐλθεῖν. Ἕλκει δὲ τὴν γονὴν ὁ τόπος διὰ τὴν θερμότητα
to-come Draws and the semen the place because-of the heat
τὴν ὑπάρχουσαν. Καὶ ἡ τῶν καταμηνίων δὲ ἔκκρισις καὶ
the belonging And the of-the menses and excretion and
συνάθροισις ἐμπυρεύει θερμότητα ἐν τῷ μορίῳ τούτῳ, ὥστε
collection kindles heat in the part this so-that
καθάπερ τὰ ἀκόνιτα τῶν ἀγγείων, ὅταν θερμῷ διακλυσθῇ,
just-as the narrow-necked of-the vessels when with-hot it-be-rinsed
σπᾷ τὸ ὕδωρ εἰς αὑτὰ καταστρεφομένου τοῦ στόματος. Καὶ
draws the water into themselves being-turned-down the mouth And
τοῦτον μὲν τὸν τρόπον γίγνεται σπάσις, ὡς δέ τινες λέγουσι,
this indeed the way comes-about drawing as but some say
τοῖς ὀργανικοῖς πρὸς τὴν συνουσίαν μορίοις οὐ γίνεται κατ'
by-the instrumental for the intercourse parts not it-happens in
οὐθένα τρόπον. Ἀνάπαλιν δὲ συμβαίνει καὶ τοῖς λέγουσι
no way The-reverse and happens also for-those saying
προΐεσθαι καὶ τὴν γυναῖκα σπέρμα. Προϊεμέναις γὰρ ἔξω
to-emit also the woman seed Emitting for outside
συμβαίνει ταῖς ὑστέραις πάλιν εἴσω σπᾶν, εἴπερ μιχθήσεται
it-happens to-the uteri again inward to-draw if-indeed it-will-be-mixed
τῇ γονῇ τῇ τοῦ ἄρρενος. Τὸ δ' οὕτω γίγνεσθαι περίεργον,
with-the semen the of-the male The but so to-come-about superfluous

ἡ δὲ φύσις οὐδὲν ποιεῖ περίεργον. Ὅταν δὲ συστῇ ἡ ἐν
the but nature nothing makes superfluous When and be-constituted the in
ταῖς ὑστέραις ἀπόκρισις τοῦ θήλεος ὑπὸ τῆς τοῦ ἄρρενος
the uteri secretion of-the female by the of-the male
γονῆς, παραπλήσιον ποιούσης ὥσπερ ἐπὶ τοῦ γάλακτος
semen similar doing just-as in-the-case-of the milk
τῆς πυετίας· καὶ γὰρ ἡ πυετία γάλα ἐστὶ θερμότητα
the rennet and for the rennet milk is heat
ζωτικὴν ἔχον, ᾗ τὸ ὅμοιον εἰς ἓν ἄγει καὶ συνίστησι, καὶ
vital having which the like into one brings and constitutes also
ἡ γονὴ πρὸς τὴν τῶν καταμηνίων φύσιν τοῦτο πέπονθεν·
the semen toward the of-the menses nature this has-undergone
ἡ γὰρ αὐτὴ φύσις ἐστὶ γάλακτος καὶ καταμηνίων.
the for same nature is of-milk and of-menses
Συνιόντος δὲ τοῦ σωματώδους ἐκκρίνεται τὸ ὑγρόν, καὶ
Coming-together and the bodily is-excreted the moist and
περιίστανται κύκλῳ ξηραινομένων τῶν γεηρῶν, ὑμένες, καὶ
form-around in-circle drying the earthy membranes both
ἐξ ἀνάγκης καὶ ἕνεκά τινος· καὶ γὰρ θερμαινομένων
from necessity and for-the-sake-of something and for being-heated
ξηραίνεσθαι ἀναγκαῖον τὰ ἔσχατα καὶ ψυχομένων, καὶ δεῖ
to-be-dried necessary the extremities and being-cooled and it-must
μὴ ἐν ὑγρῷ τὸ ζῷον εἶναι ἀλλὰ κεχωρισμένον. Καλοῦνται
not in moist the animal to-be but separated Are-called
δὲ τούτων οἱ μὲν ὑμένες τὰ δὲ χόρια, διαφέροντα
and of-these the-ones indeed membranes the-others and chorions differing
τῷ μᾶλλον καὶ ἧττον· ὁμοίως δ' ἐνυπάρχουσιν ἔν τε τοῖς
by-the more and less likewise and are-present-in in both the
ᾠοτόκοις ταῦτα καὶ τοῖς ζωοτόκοις. Ὅταν δὲ συστῇ τὸ
egg-laying these and the live-bearing When and be-constituted the
κύημα ἤδη, παραπλήσιον ποιεῖ τοῖς σπειρομένοις. Ἡ μὲν
fetus already similar it-does to-the sown-things The indeed

γὰρ ἀρχὴ καὶ ἐν τοῖς σπέρμασιν ἐν αὐτοῖς ἐστὶν ἡ πρώτη·
for principle also in the seeds in themselves is the first
ὅταν δ' αὕτη ἀποκριθῇ ἐνοῦσα δυνάμει πρότερον, ἀπὸ
when but this be-secreted being-in in-potentiality before from
ταύτης ἀφίεται ὅ τε βλαστὸς καὶ ἡ ῥίζα. Αὕτη δ' ἐστὶν
this is-sent-forth the both shoot and the root This and is
ἥ τὴν τροφὴν λαμβάνει· δεῖται γὰρ αὐξήσεως τὸ φυτόν.
by-which the nourishment it-takes needs for growth the plant
Οὕτω καὶ ἐν τῷ κυήματι τρόπον τινὰ πάντων ἐνόντων τῶν
So also in the fetus in-a-way some all being-in the
μορίων δυνάμει ἡ ἀρχὴ πρὸ ὁδοῦ μάλιστα ἐνυπάρχει.
parts in-potentiality the principle forward on-the-way most is-present-in
Διὸ ἀποκρίνεται πρῶτον ἡ καρδία ἐνεργείᾳ. Καὶ
Wherefore is-secreted first the heart in-actuality And
τοῦτο οὐ μόνον ἐπὶ τῆς αἰσθήσεως δῆλον (συμβαίνει
this not only on the perception clear it-happens
γὰρ οὕτως), ἀλλὰ καὶ ἐπὶ τοῦ λόγου. Ὅταν γὰρ ἀπ'
for so but also on the account When for from
ἀμφοῖν ἀποκριθῇ, δεῖ αὐτὸ αὑτὸ διοικεῖν τὸ γενόμενον,
both it-be-secreted it-must it itself to-manage the having-come-to-be
καθάπερ ἀποικισθὲν τέκνον ἀπὸ πατρός. Ὥστε δεῖ
just-as settled-away child from father So-that it-must
ἀρχὴν ἔχειν, ἀφ' ἧς καὶ ὕστερον ἡ διακόσμησις τοῦ
principle to-have from which also later the ordering of-the
σώματος γίνεται τοῖς ζῴοις. Εἰ γὰρ ἔξωθέν ποτ' ἔσται
body comes-about for-the animals If for from-outside ever it-will-be
καὶ ὕστερον ἐνεσομένη, οὐ μόνον διαπορήσειεν ἄν τις
and later going-to-be-in not only would-be-puzzled — someone
τὸ πότε, ἀλλ' ὅτι ἀνάγκη, ὅταν ἕκαστον χωρίζηται τῶν
the when but that necessary when each be-separated of-the
μορίων, ταύτην ὑπάρχειν πρῶτον, ἐξ ἧς καὶ ἡ αὔξησις
parts this to-belong first from which also the growth

ὑπάρχει καὶ ἡ κίνησις τοῖς ἄλλοις μορίοις. Διόπερ ὅσοι
belongs and the motion to-the other parts Wherefore as-many-as
λέγουσιν, ὥσπερ Δημόκριτος, τὰ ἔξω πρῶτον διακρίνεσθαι
say just-as Democritus the outer first to-be-separated
τῶν ζῴων, ὕστερον δὲ τὰ ἐντός, οὐκ ὀρθῶς λέγουσιν,
of-the animals later but the inner not correctly they-speak
ὥσπερ ξυλίνων ἢ λιθίνων ζῴων. Τὰ μὲν γὰρ τοιαῦτ' οὐκ
just-as of-wooden or of-stone animals The indeed for such not
ἔχει ἀρχὴν ὅλως, τὰ δὲ ζῷα πάντ' ἔχει καὶ ἐντὸς ἔχει.
have principle at-all the but animals all have and inside have
Διὸ πρῶτον ἡ καρδία φαίνεται διωρισμένη πᾶσι τοῖς
Wherefore first the heart appears distinct in-all the
ἐναίμοις· ἀρχὴ γὰρ αὕτη καὶ τῶν ὁμοιομερῶν καὶ τῶν
blooded principle for this both of-the uniform and of-the
ἀνομοιομερῶν. Ἤδη γὰρ ἀρχὴν ταύτην ἄξιον ἀκοῦσαι τοῦ
non-uniform Already for principle this worthy to-understand of-the
ζῴου καὶ τοῦ συστήματος, ὅταν δέηται τροφῆς· τὸ γὰρ δὴ
animal and of-the system when it-need nourishment the for indeed
ὂν αὐξάνεται. Τροφὴ δὲ ζῴου ἡ ἐσχάτη αἷμα καὶ τὸ
being grows Nourishment and of-animal the last blood and the
ἀνάλογον. Τούτων δ' ἀγγεῖον αἱ φλέβες· διὸ ἡ καρδία
analogous Of-these and vessel the veins wherefore the heart
καὶ τούτων ἀρχή. Δῆλον δὲ τοῦτο ἐκ τῶν ἱστοριῶν καὶ
also of-these principle Clear and this from the inquiries and
τῶν ἀνατομῶν. Ἐπεὶ δὲ δυνάμει μὲν ἤδη ζῷον ἀτελὲς δέ,
the dissections Since and in-potentiality indeed already animal incomplete but
ἄλλοθεν ἀναγκαῖον λαμβάνειν τὴν τροφήν· διὸ χρῆται
from-elsewhere necessary to-take the nourishment wherefore it-uses
τῇ ὑστέρᾳ καὶ τῇ ἐχούσῃ, ὥσπερ γῇ φυτόν, τοῦ λαμβάνειν
the uterus and the bearing just-as earth plant of-the to-take
τροφήν, ἕως ἂν τελεωθῇ πρὸς τὸ εἶναι ἤδη ζῷον δυνάμει
nourishment until — it-be-completed toward the to-be already animal in-potentiality

πορευτικόν. Διὸ ἐκ τῆς καρδίας τὰς δύο φλέβας πρῶτον
locomotive Wherefore from the heart the two veins first
ἡ φύσις ὑπέγραψεν· ἀπὸ δὲ τούτων φλέβια ἀπήρτηται πρὸς
the nature outlined from and these small-veins are-attached to
τὴν ὑστέραν ὁ καλούμενος ὀμφαλός. Ἔστι γὰρ ὁ ὀμφαλὸς
the uterus the so-called navel Is for the navel
φλέψ, τοῖς μὲν μία, τοῖς δὲ πλείους τῶν ζῴων.
vein for-the-ones indeed one for-the-others and more of-the animals
Περὶ δὲ ταύτας κέλυφος δερματικὸν διὰ τὸ δεῖσθαι
About and these sheath skin-like because-of the to-need
σωτηρίας καὶ σκέπης τὴν τῶν φλεβῶν ἀσθένειαν. Αἱ δὲ
protection and covering the of-the veins weakness The and
φλέβες οἷον ῥίζαι πρὸς τὴν ὑστέραν συνάπτουσι, δι' ὧν
veins like roots to the uterus join through which
λαμβάνει τὸ κύημα τὴν τροφήν. Τούτου γὰρ χάριν ἐν ταῖς
takes the fetus the nourishment Of-this for for-the-sake in the
ὑστέραις μένει τὸ ζῷον, ἀλλ' οὐχ ὡς Δημόκριτός φησιν,
uteri remains the animal but not as Democritus says
ἵνα διαπλάττηται τὰ μόρια κατὰ τὰ μόρια τῆς ἐχούσης.
so-that be-molded the parts according-to the parts of-the bearing
Τοῦτο γὰρ ἐπὶ τῶν ᾠοτοκούντων φανερόν· ἐκεῖνα γὰρ
This for in-the-case-of the egg-laying evident those for
ἐν τοῖς ᾠοῖς λαμβάνει τὴν διάκρισιν, κεχωρισμένα τῆς
in the eggs take the distinction separated from-the
μήτρας. Ἀπορήσειε δ' ἄν τις, εἰ τὸ αἷμα μὲν τροφή
womb Would-be-puzzled and — someone if the blood indeed nourishment
ἐστιν, ἡ δὲ καρδία πρώτη γίνεται ἔναιμος οὖσα, τὸ δ' αἷμα
is the but heart first comes-to-be blooded being the and blood
τροφή, ἡ δὲ τροφὴ θύραθεν, πόθεν εἰσῆλθεν ἡ πρώτη
nourishment the and nourishment from-outside whence entered the first
τροφή; Ἢ τοῦτ' οὐκ ἀληθές, ὡς πᾶσα θύραθεν, ἀλλ' εὐθύς,
nourishment Or this not true that all from-outside but at-once

ὥσπερ ἐν τοῖς τῶν φυτῶν σπέρμασιν ἔνεστί τι τοιοῦτον
just-as in the of-the plants seeds is-in something such
τὸ φαινόμενον πρῶτον γαλακτῶδες, οὕτω καὶ ἐν τῇ ὕλῃ
the appearing first milky so also in the matter
τῶν ζῴων τὸ περίττωμα τῆς συστάσεως τροφή ἐστιν.
of-the animals the residue of-the constitution nourishment is
Ἡ μὲν οὖν αὔξησις τῷ κυήματι γίνεται διὰ τοῦ
The indeed then growth for-the fetus comes-about through the
ὀμφαλοῦ τὸν αὐτὸν τρόπον ὅνπερ διὰ τῶν ῥιζῶν τοῖς
navel the same way in-which through the roots for-the
φυτοῖς, καὶ τοῖς ζῴοις αὐτοῖς, ὅταν ἀπολυθῶσιν ἐκ τῆς
plants and for-the animals themselves when they-be-loosed from the
ἐν αὑτοῖς τροφῆς· περὶ ὧν ὕστερον λεκτέον κατὰ τοὺς
in themselves nourishment about which later must-be-said at the
οἰκείους τῶν λόγων καιρούς. Ἡ δὲ διάκρισις γίγνεται τῶν
proper of-the discourses times The and distinction comes-about of-the
μορίων οὐχ ὥς τινες ὑπολαμβάνουσι, διὰ τὸ πεφυκέναι
parts not as some suppose because-of the to-be-natural
φέρεσθαι τὸ ὅμοιον πρὸς τὸ ὅμοιον (πρὸς γὰρ πολλαῖς
to-be-carried the like to the like in-addition-to for many
ἄλλαις αἷς ὁ λόγος οὗτος ἔχει δυσχερείαις, συμβαίνει χωρὶς
others which the account this has difficulties it-happens separately
ἕκαστον γίνεσθαι τῶν μορίων τῶν ὁμοιομερῶν, οἷον ὀστᾶ
each to-come-to-be of-the parts of-the uniform such-as bones
καθ' αὑτὰ καὶ νεῦρα, καὶ τὰς σάρκας καθ' αὑτάς, εἴ τις
by themselves and sinews and the flesh by themselves if anyone
ἀποδέξαιτο ταύτην τὴν αἰτίαν)· ἀλλ' ὅτι τὸ περίττωμα τὸ
should-accept this the cause but because the residue the
τοῦ θήλεος δυνάμει τοιοῦτόν ἐστιν οἷον φύσει τὸ ζῷον, καὶ
of-the female in-potentiality such is as by-nature the animal and
ἔνεστι δυνάμει τὰ μόρια, ἐνεργείᾳ δ' οὐθέν, διὰ ταύτην
are-in in-potentiality the parts in-actuality but none because-of this

τὴν αἰτίαν γίνεται ἕκαστον αὐτῶν, καὶ ὅτι τὸ ποιητικὸν
the cause comes-to-be each of-them and because the active
καὶ τὸ παθητικόν, ὅταν θίγωσιν ὧν τρόπον ἐστὶ τὸ μὲν
and the passive when they-touch in-what way is the indeed
ποιητικὸν τὸ δὲ παθητικόν (τὸν δὲ τρόπον λέγω τὸ ὡς
active the and passive the and way I-mean the how
καὶ οὗ καὶ ὅτε), εὐθὺς τὸ μὲν ποιεῖ τὸ δὲ πάσχει.
and where and when at-once the-one indeed acts the-other and suffers
Ὕλην μὲν οὖν παρέχει τὸ θῆλυ, τὴν δ' ἀρχὴν τῆς
Matter indeed then provides the female the and principle of-the
κινήσεως τὸ ἄρρεν. Ὥσπερ δὲ τὰ ὑπὸ τῆς τέχνης γινόμενα
motion the male Just-as and the by the art coming-to-be
γίνεται διὰ τῶν ὀργάνων, ἔστι δ' ἀληθέστερον εἰπεῖν
come-to-be through the instruments it-is and truer to-say
διὰ τῆς κινήσεως αὐτῶν, αὕτη δ' ἐστὶν ἡ ἐνέργεια
through the motion of-them this and is the activity
τῆς τέχνης, ἡ δὲ τέχνη μορφὴ τῶν γινομένων ἐν ἄλλῳ,
of-the art the and art shape of-the coming-to-be in another
οὕτως ἡ τῆς θρεπτικῆς ψυχῆς δύναμις, ὥσπερ καὶ ἐν
so the of-the nutritive soul power just-as also in
αὐτοῖς τοῖς ζῴοις καὶ τοῖς φυτοῖς ὕστερον ἐκ τῆς τροφῆς
themselves the animals and the plants later from the nourishment
ποιεῖ τὴν αὔξησιν, χρωμένη οἷον ὀργάνοις θερμότητι καὶ
makes the growth using as instruments heat and
ψυχρότητι (ἐν γὰρ τούτοις ἡ κίνησις ἐκείνης, καὶ λόγῳ
coldness in for these the motion of-that and by-ratio
τινὶ ἕκαστον γίνεται), οὕτω καὶ ἐξ ἀρχῆς συνίστησι
some each comes-to-be so also from beginning it-constitutes
τὸ φύσει γιγνόμενον. Ἡ γὰρ αὐτή ἐστιν ὕλη ᾗ
the by-nature coming-to-be The for same is matter by-which
αὐξάνεται καὶ ἐξ ἧς συνίσταται τὸ πρῶτον, ὥστε καὶ
it-grows and from which is-constituted the first so-that also

ἡ ποιοῦσα δύναμις ταὐτὸ τῷ ἐξ ἀρχῆς. Μείζων δὲ
the making power the-same as-the from beginning Greater and
αὕτη ἐστίν. Εἰ οὖν αὕτη ἐστὶν ἡ θρεπτικὴ ψυχή, αὕτη
this is If then this is the nutritive soul this
ἐστὶ καὶ ἡ γεννῶσα· καὶ τοῦτ' ἐστὶν ἡ φύσις ἡ ἑκάστου,
is also the generating and this is the nature the of-each
ἐνυπάρχουσα καὶ ἐν φυτοῖς καὶ ἐν ζῴοις πᾶσιν. Τὰ δ'
being-present-in both in plants and in animals all The and
ἄλλα μόρια τῆς ψυχῆς τοῖς μὲν ὑπάρχει τοῖς δ'
other parts of-the soul to-the-ones indeed belong to-the-others but
οὐχ ὑπάρχει τῶν ζῴων. Ἐν μὲν οὖν τοῖς φυτοῖς οὐ
not belong of-the animals In indeed then the plants not
κεχώρισται τὸ θῆλυ τοῦ ἄρρενος· ἐν δὲ τοῖς ζῴοις ἐν
has-been-separated the female from-the male in but the animals in
οἷς κεχώρισται, προσδεῖται τοῦ θήλεος τὸ ἄρρεν.
which it-has-been-separated needs-besides the female the male

V · WHY THE FEMALE NEEDS THE MALE

If the female has the soul and the matter, why can she not generate alone? Because an animal differs from a plant by perception, and the male supplies the perceptive soul wherever the sexes are separate. Wind-eggs show she generates up to a point, holding the nutritive soul in potential, and become fertile if the male mounts in time. Whether some fish generate without a male is not reliably observed. Once motion begins the parts follow one another like automata, the heart first and the last to leave life.

Καίτοι τις ἀπορήσειεν ἂν διὰ τίν' αἰτίαν, εἴπερ ἔχει
And-yet someone would-be-puzzled — because-of what cause if-indeed has
τὸ θῆλυ τὴν αὐτὴν ψυχὴν καὶ ἡ ὕλη τὸ περίττωμα
the female the same soul and the matter the residue

τὸ τοῦ θήλεός ἐστι, τί προσδεῖται τοῦ ἄρρενος, ἀλλ᾽ οὐκ
the of-the female is why it-needs-besides the male but not
αὐτὸ ἐξ αὑτοῦ γεννᾷ τὸ θῆλυ. Αἴτιον δ᾽ ὅτι διαφέρει
itself from itself generates the female Cause and that differs
τὸ ζῷον τοῦ φυτοῦ αἰσθήσει· ἀδύνατον δὲ πρόσωπον
the animal from-the plant by-perception impossible and face
ἢ χεῖρα ἢ σάρκα εἶναι ἢ ἄλλο τι μόριον μὴ ἐνούσης
or hand or flesh to-be or other some part not being-in
αἰσθητικῆς ψυχῆς, ἢ ἐνεργείᾳ ἢ δυνάμει, καὶ ἢ πῇ
perceptive soul either in-actuality or in-potentiality and either somehow
ἢ ἁπλῶς· ἔσται γὰρ οἷον νεκρὸς ἢ νεκροῦ μόριον. Εἰ
or simply it-will-be for like corpse or of-corpse part If
οὖν τὸ ἄρρεν ἐστὶ τὸ τῆς τοιαύτης ποιητικὸν ψυχῆς,
then the male is the of-the such productive soul
ὅπου κεχώρισται τὸ θῆλυ καὶ τὸ ἄρρεν, ἀδύνατον τὸ
where has-been-separated the female and the male impossible the
θῆλυ αὐτὸ ἐξ αὑτοῦ γεννᾶν ζῷον· τὸ γὰρ εἰρημένον ἦν
female itself from itself to-generate animal the for said was
τὸ ἄρρεν εἶναι· ἐπεὶ ὅτι γ᾽ ἔχει λόγον ἡ λεχθεῖσα
the male to-be since that at-least it-has reason the stated
ἀπορία, φανερὸν ἐπὶ τῶν ὀρνίθων τῶν τὰ ὑπηνέμια
puzzle evident in-the-case-of the birds of-the the wind-eggs
τικτόντων, ὅτι δύναται μέχρι γέ τινος τὸ θῆλυ γεννᾶν.
bearing that it-can up-to at-least some-point the female to-generate
Ἔτι δ᾽ ἔχει καὶ τοῦτο ἀπορίαν, πῶς τις αὐτῶν τὰ ᾠὰ
Further and has also this puzzle how anyone of-them the eggs
φήσει ζῆν. Οὔτε γὰρ οὕτως ὡς τὰ γόνιμα ᾠὰ ἐνδέχεται
will-say to-live Neither for so as the fertile eggs is-possible
(ἐγίγνετο γὰρ ἂν ἐξ αὐτῶν ἐνεργείᾳ ἔμψυχον) οὔθ᾽
would-come-to-be for — from them in-actuality ensouled nor
οὕτως ὥσπερ ξύλον ἢ λίθος. Ἔστι γὰρ καὶ τούτων
so just-as wood or stone There-is for also of-these

τῶν ᾠῶν φθορά τις ὡς μετεχόντων τρόπον τινὰ ζωῆς
the eggs destruction some as sharing in-a-way some of-life
πρότερον. Δῆλον οὖν ὅτι ἔχει τινὰ δυνάμει ψυχήν.
before Clear then that it-has some in-potentiality soul
Ποίαν οὖν ταύτην; Ἀνάγκη δὴ τὴν ἐσχάτην. Αὕτη δ'
Of-what-sort then this Necessary indeed the last This and
ἐστὶν ἡ θρεπτική· αὕτη γὰρ ὑπάρχει πᾶσιν ὁμοίως ζῴοις
is the nutritive this for belongs to-all likewise animals
τε καὶ φυτοῖς. Διὰ τί οὖν οὐκ ἀποτελεῖ τὰ μόρια
both and plants Because-of what then not does-it-complete the parts
καὶ τὸ ζῷον; Ὅτι δεῖ αἰσθητικὴν αὐτὰ ἔχειν ψυχήν·
and the animal Because it-must perceptive them to-have soul
οὐ γάρ ἐστιν ὥσπερ φυτοῦ τὰ μόρια τῶν ζῴων. Διὸ
not for is just-as of-plant the parts of-the animals Wherefore
δεῖται τῆς τοῦ ἄρρενος κοινωνίας· κεχώρισται γὰρ ἐν
it-needs the of-the male partnership has-been-separated for in
τούτοις τὸ ἄρρεν. Ὅπερ καὶ συμβαίνει· τὰ γὰρ ὑπηνέμια
these the male Which-very also happens the for wind-eggs
γίνεται γόνιμα, ἐὰν ἔν τινι καιρῷ τὸ ἄρρεν ἐποχεύσῃ.
become fertile if in some season the male mount
Ἀλλὰ περὶ μὲν τῆς τούτων αἰτίας ὕστερον διορισθήσεται·
But about indeed the of-these cause later it-will-be-determined
εἰ δ' ἔστι τι γένος ὃ θῆλυ μέν ἐστιν, ἄρρεν δὲ μὴ
if but there-is some kind which female indeed is male but not
ἔχει κεχωρισμένον, ἐνδέχεται τοῦτο ζῷον ἐξ αὑτοῦ γεννᾶν.
has separated it-is-possible this animal from itself to-generate
Ὅπερ ἀξιοπίστως μὲν οὐ συνῶπται μέχρι γε τοῦ
Which-very trustworthily indeed not has-been-observed up-to at-least the
νῦν, ποιεῖ δὲ διστάζειν ἐν τῷ γένει τῷ τῶν ἰχθύων· τῶν
now makes but to-doubt in the kind the of-the fish of-the
γὰρ καλουμένων ἐρυθρίνων ἄρρην μὲν οὐθεὶς ὤπταί πω,
for so-called erythrini male indeed none has-been-seen yet

θήλειαι δὲ καὶ κυημάτων πλήρεις. Ἀλλὰ τούτων μὲν οὔπω
females but and of-fetuses full But of-these indeed not-yet
πεῖραν ἔχομεν ἀξιόπιστον, οὔτε δὲ θήλεα οὔτε ἄρρενα καὶ ἐν
trial we-have trustworthy neither but female nor male also in
τῷ τῶν ἰχθύων γένει ἐστίν, οἷον αἵ τ' ἐγχέλεις καὶ γένος
the of-the fish kind is such-as the both eels and kind
τι κεστρέων περὶ τοὺς τελματιαίους ποταμούς. Ἐν ὅσοις
some of-mullets about the marshy rivers In as-many-as
δὲ κεχώρισται τὸ θῆλυ καὶ τὸ ἄρρεν, ἀδύνατον αὐτὸ καθ'
but has-been-separated the female and the male impossible itself by
αὑτὸ τὸ θῆλυ γεννᾶν εἰς τέλος· τὸ γὰρ ἄρρεν μάτην
itself the female to-generate to end the for male in-vain
ἂν ἦν, ἡ δὲ φύσις οὐδὲν ποιεῖ μάτην. Διόπερ ἐν τοῖς
— would-be the but nature nothing does in-vain Wherefore in the
τοιούτοις ἀεὶ τὸ ἄρρεν ἐπιτελεῖ τὴν γένεσιν. Ἐμποιεῖ γὰρ
such always the male completes the generation Puts-in for
τοῦτο τὴν αἰσθητικὴν ψυχήν, ἢ δι' αὑτοῦ ἢ διὰ τῆς
this the perceptive soul either through itself or through the
γονῆς. Ἐνυπαρχόντων δ' ἐν τῇ ὕλῃ δυνάμει τῶν μορίων,
semen Being-present-in and in the matter in-potentiality the parts
ὅταν ἀρχὴ γένηται κινήσεως, ὥσπερ ἐν τοῖς αὐτομάτοις
when principle come-to-be of-motion just-as in the automatic
θαύμασι, συνείρεται τὸ ἐφεξῆς· καὶ ὃ βούλονται λέγειν
marvels is-strung-together the next and what wish to-say
τινὲς τῶν φυσικῶν, τὸ φέρεσθαι εἰς τὸ ὅμοιον, λεκτέον
some of-the natural-philosophers the to-be-carried to the like must-be-said
οὐχ ὡς τόπον μεταβάλλοντα τὰ μόρια κινεῖσθαι, ἀλλὰ
not as place changing the parts to-be-moved but
μένοντα καὶ ἀλλοιούμενα μαλακότητι καὶ σκληρότητι καὶ
remaining and being-altered in-softness and hardness and

χρώμασι καὶ ταῖς ἄλλαις ταῖς τῶν ὁμοιομερῶν διαφοραῖς,
colors and the other the of-the uniform differences
γινόμενα ἐνεργείᾳ ἃ ὑπῆρχεν ὄντα δυνάμει πρότερον.
becoming in-actuality what were being in-potentiality before
Γίγνεται δὲ πρῶτον ἡ ἀρχή. Αὕτη δ' ἐστὶν ἡ καρδία
Comes-to-be and first the principle This and is the heart
τοῖς ἐναίμοις, τοῖς δ' ἄλλοις τὸ ἀνάλογον, ὥσπερ εἴρηται
in-the blooded in-the and others the analogous just-as has-been-said
πολλάκις. Καὶ τοῦτο φανερὸν οὐ μόνον κατὰ τὴν αἴσθησιν,
often And this evident not only by the perception
ὅτι γίνεται πρῶτον, ἀλλὰ καὶ περὶ τὴν τελευτήν·
that it-comes-to-be first but also about the end
ἀπολείπει γὰρ τὸ ζῆν ἐντεῦθεν τελευταῖον, συμβαίνει
leaves for the to-live from-there last it-happens
δ' ἐπὶ πάντων τὸ τελευταῖον γινόμενον πρῶτον
and in-the-case-of all the last coming-to-be first
ἀπολείπειν, τὸ δὲ πρῶτον τελευταῖον, ὥσπερ τῆς φύσεως
to-leave the and first last just-as the nature
διαυλοδρομούσης καὶ ἀνελιττομένης ἐπὶ τὴν ἀρχὴν ὅθεν
running-the-double-course and unrolling to the starting-point whence
ἦλθεν. Ἔστι γὰρ ἡ μὲν γένεσις ἐκ τοῦ μὴ ὄντος εἰς
it-came Is for the indeed generation from the not being into
τὸ ὄν, ἡ δὲ φθορὰ ἐκ τοῦ ὄντος πάλιν εἰς τὸ μὴ ὄν.
the being the but destruction from the being back into the not being

After the principle the inner parts form before the outer and the upper before the lower, shaped by breath, not the mother's. The moving principle comes first, so the heart forms first; Democritus wrongly denies that what always is has a cause. The veins run from the heart like a painter's outlines. The brain forms opposite the heart's heat, so head and eyes are large early, and eyes and eyelids finish last. Like a good steward, nature makes flesh and senses from the purest nourishment and bones, hair, and nails from residues; teeth, alone of the bones, grow for life.

Γίνεται δὲ μετὰ τὴν ἀρχήν, ὥσπερ ἐλέχθη, τὰ ἐντὸς
Come-to-be and after the principle just-as was-said the inner
πρότερον τῶν ἐκτός. Φαίνεται δὲ πρότερα τὰ μέγεθος
earlier than-the outer Appear and earlier the size
ἔχοντα τῶν ἐλαττόνων, οὐδ' ἔνια γιγνόμενα πρότερον.
having than-the smaller not-even some coming-to-be earlier
Πρῶτον δὲ τὰ ἄνω διαρθροῦται τοῦ διαζώματος,
First and the upper-parts are-articulated of-the midriff
καὶ διαφέρει μεγέθει· τὸ δὲ κάτω καὶ ἔλαττον καὶ
and differ in-size the and lower both smaller and
ἀδιοριστότερον. Καὶ τοῦτο γίγνεται ἐν πᾶσιν, ὅσοις τὸ ἄνω
more-indistinct And this happens in all in-whom the upper
καὶ τὸ κάτω διώρισται, πλὴν ἐν τοῖς ἐντόμοις· τούτων δ' ἐν
and the lower is-distinguished except in the insects of-these and in
τοῖς σκωληκοτοκουμένοις ἐπὶ τὸ ἄνω ἡ αὔξησις γίνεται· τὸ
the larva-born to the upper the growth comes-about the
γὰρ ἄνω ἐξ ὑπαρχῆς ἔλαττον. Ἀδιόριστον δὲ καὶ τὸ ἄνω
for upper from the-beginning smaller Indistinct and both the upper
καὶ τὸ κάτω τοῖς μαλακίοις τῶν πορευτικῶν μόνοις. Τὸ δὲ
and the lower in-the cephalopods of-the locomotive alone The and
λεχθὲν συμβαίνει καὶ ἐπὶ τῶν φυτῶν, τὸ προτερεῖν τῇ
said happens also in-the-case-of the plants the to-precede in-the

γενέσει τὸ ἄνω κύτος τοῦ κάτωθεν· τὰς γὰρ ῥίζας πρότερον
generation the upper trunk than-the lower the for roots earlier
ἀφιᾶσι τὰ σπέρματα τῶν πτόρθων. Διορίζεται δὲ τὰ μέρη
send-out the seeds than-the shoots Are-distinguished and the parts
τῶν ζῴων πνεύματι, οὐ μέντοι οὔτε τῷ τῆς γεννώσης
of-the animals by-breath not however either by-the of-the mother
οὔτε τῷ αὐτοῦ, καθάπερ τινὲς τῶν φυσικῶν φασίν.
or by-the its-own just-as some of-the natural-philosophers say
Φανερὸν γὰρ τοῦτο ἐπὶ τῶν ὀρνίθων καὶ τῶν ἰχθύων
Evident for this in-the-case-of the birds and the fish
καὶ τῶν ἐντόμων. Τὰ μὲν γὰρ χωρισθέντα τῆς
and the insects The-ones indeed for separated from-the
γεννώσης γίνεται ἐξ ᾠοῦ, ἐν ᾧ λαμβάνει τὴν διάρθρωσιν·
mother come-to-be from egg in which they-take the articulation
τὰ δ' ὅλως οὐκ ἀναπνεῖ τῶν ζῴων, σκωληκοτοκεῖται
the-others and at-all not breathe of-the animals are-born-as-larvae
δὲ καὶ ᾠοτοκεῖται· τὰ δ' ἀναπνέοντα καὶ ἐν τῇ
and also are-born-as-eggs the-others and breathing also in the
μήτρᾳ λαμβάνοντα τὴν διάρθρωσιν οὐκ ἀναπνεῖ, πρὶν ἢ
womb taking the articulation not breathe before than
ὁ πλεύμων λάβῃ τέλος· διαρθροῦται δὲ καὶ οὗτος καὶ τὰ
the lung take end is-articulated and also this and the
ἔμπροσθεν μόρια πρὶν ἀναπνεῖν. Ἔτι δ' ὅσα πολυσχιδῆ
front parts before to-breathe Further and as-many-as many-toed
τῶν τετραπόδων, οἷον κύων λέων λύκος ἀλώπηξ θώς,
of-the quadrupeds such-as dog lion wolf fox jackal
πάντα τυφλὰ γεννᾷ, καὶ διίσταται τὸ βλέφαρον γενομένων
all blind generate and separates the eyelid having-come-to-be
ὕστερον. Ὥστε δῆλον ὅτι τὸν αὐτὸν τρόπον καὶ ἐν τοῖς
later So-that clear that the same way also in the
ἄλλοις πᾶσι, καθάπερ καὶ τὸ ποιόν, καὶ τὸ ποσὸν γίνεται
others all just-as also the quality also the quantity comes-to-be

δυνάμει προϋπάρχον, ἐνεργείᾳ δ' ὕστερον, ὑπὸ τῶν αὐτῶν
in-potentiality pre-existing in-actuality but later by the same
αἰτίων ὑφ' ὧνπερ καὶ τὸ ποιὸν διορίζεται, καὶ γίγνεται
causes by which-very also the quality is-distinguished and become
δύο ἐξ ἑνός. Πνεῦμα δ' ὑπάρχειν ἀναγκαῖον, ὅτι ὑγρὸν
two from one Breath and to-belong necessary because moist
καὶ θερμόν, τοῦ μὲν ποιοῦντος, τοῦ δὲ πάσχοντος.
and hot of-the-one indeed acting of-the-other and being-acted-on
Τῶν δ' ἀρχαίων τινὲς φυσιολόγων τί μετὰ τί γίγνεται
Of-the and ancient some natural-philosophers what after what comes-to-be
τῶν μορίων ἐπειράθησαν λέγειν, οὐ λίαν ἐμπειρικῶς ἔχοντες
of-the parts tried to-say not very experienced being
τῶν συμβαινόντων. Τῶν γὰρ μορίων, ὥσπερ καὶ ἐπὶ
of-the happenings Of-the for parts just-as also in-the-case-of
τῶν ἄλλων, πέφυκεν ἕτερον ἑτέρου πρότερον. Τὸ δὲ
the others is-natural one than-another earlier The and
πρότερον ἤδη, πολλαχῶς ἐστίν, τό τε γὰρ οὗ ἕνεκα
earlier already in-many-ways is the both for of-which for-the-sake
καὶ τὸ τούτου ἕνεκα διαφέρει, καὶ τὸ μὲν τῇ γενέσει
and the of-this for-the-sake differ and the indeed in-the generation
πρότερον αὐτῶν ἐστί, τὸ δὲ τῇ οὐσίᾳ. Δύο δὲ διαφορὰς
earlier of-them is the and in-the substance Two and differences
ἔχει καὶ τὸ οὗ ἕνεκα· τὸ μὲν γάρ ἐστιν ὅθεν ἡ
has also the of-which for-the-sake the-one indeed for is whence the
κίνησις, τὸ δὲ ᾧ χρῆται τὸ οὗ ἕνεκα. Λέγω δ' οἷον
motion the-other and which uses the of-which for-the-sake I-mean and such-as
τό τε γεννητικὸν καὶ τὸ ὀργανικὸν τῷ γενομένῳ· τούτων
the both generative and the instrumental to-the coming-to-be of-these
γὰρ τὸ μὲν ὑπάρχειν δεῖ πρότερον, τὸ ποιητικόν, οἷον
for the-one indeed to-belong it-must earlier the productive such-as
τὸ διδάξαν τοῦ μανθάνοντος, τοὺς δ' αὐλοὺς ὕστερον
the having-taught than-the learner the but pipes later

τοῦ μανθάνοντος αὐλεῖν· περίεργον γὰρ μὴ ἐπισταμένοις
than-the learner to-pipe superfluous for not for-those-knowing
αὐλεῖν ὑπάρχειν αὐλούς. Τριῶν δ' ὄντων, ἑνὸς μὲν τοῦ
to-pipe to-belong pipes Three and being one indeed of-the
τέλους, ὃ λέγομεν εἶναι οὗ ἕνεκα, δευτέρου δὲ τῶν
end which we-say to-be of-which for-the-sake second and of-the
τούτου ἕνεκα τῆς ἀρχῆς τῆς κινητικῆς καὶ γεννητικῆς
of-this for-the-sake of-the principle the moving and generative
(τὸ γὰρ ποιητικὸν καὶ γεννητικόν, ᾗ τοιαῦτα, πρὸς τὸ
the for productive and generative insofar-as such toward the
ποιούμενόν ἐστι καὶ γεννώμενον), τρίτου δὲ τοῦ χρησίμου
being-made is and being-generated third and of-the useful
καὶ ᾧ χρῆται τὸ τέλος, πρῶτον μὲν ὑπάρχειν ἀναγκαῖόν
and which uses the end first indeed to-belong necessary
τι μόριον ἐν ᾧ ἡ ἀρχὴ τῆς κινήσεως (καὶ γὰρ
some part in which the principle of-the motion and for
εὐθὺς τοῦτο μόριόν ἐστι τοῦ τέλους ἓν καὶ κυριώτατον),
at-once this part is of-the end one and most-sovereign
ἔπειτα μετὰ τοῦτο τὸ ὅλον καὶ τὸ τέλος, τρίτον δὲ καὶ
then after this the whole and the end third and also
τελευταῖον τὰ ὀργανικὰ τούτοις μέρη πρὸς ἐνίας χρήσεις.
last the instrumental for-these parts for some uses
Ὥστ' εἴ τι τοιοῦτόν ἐστιν, ὅπερ ἀναγκαῖον ὑπάρχειν
So-that if something such is which-very necessary to-belong
ἐν τοῖς ζῴοις, τὸ πάσης ἔχον τῆς φύσεως ἀρχὴν καὶ
in the animals the of-all having the nature principle and
τέλος, τοῦτο γίνεσθαι πρῶτον ἀναγκαῖον, ᾗ μὲν
end this to-come-to-be first necessary insofar-as indeed
κινητικόν, πρῶτον, ᾗ δὲ μόριον τοῦ τέλους, μετὰ
moving first insofar-as but part of-the end with
τοῦ ὅλου. Ὥστε τῶν μορίων τῶν ὀργανικῶν ὅσα μέν
the whole So-that of-the parts the instrumental as-many-as indeed

ἐστι γεννητικὰ τὴν φύσιν, ἀεὶ πρότερον δεῖ ὑπάρχειν
are generative in-the nature always earlier it-must to-belong
αὐτά (ἄλλου γὰρ ἕνεκά ἐστιν, ὡς ἡ ἀρχή), ὅσα
they of-other for for-the-sake they-are as the principle as-many-as
δὲ μὴ τοιαῦτα τῶν ἄλλου ἕνεκα, ὕστερον. Διὸ οὐ
but not such of-the of-other for-the-sake later Wherefore not
ῥᾴδιον διελεῖν πότερα πρότερα τῶν μορίων, ὅσα
easy to-distinguish which earlier of-the parts as-many-as
ἄλλου ἕνεκα, ἢ οὗ ἕνεκα ταῦτα. Παρεμπίπτει γὰρ
of-other for-the-sake or of-which for-the-sake these Falls-in-beside for
τὰ κινητικὰ τῶν μορίων πρότερον ὄντα τῇ γενέσει τοῦ
the moving of-the parts earlier being in-the generation than-the
τέλους, τὰ δὲ κινητικὰ πρὸς τὰ ὀργανικὰ διελεῖν οὐ
end the but moving compared-to the instrumental to-distinguish not
ῥᾴδιον. Καίτοι κατὰ ταύτην τὴν μέθοδον δεῖ ζητεῖν τί
easy And-yet by this the method one-must to-seek what
γίνεται μετὰ τί· τὸ γὰρ τέλος ἐνίων μὲν ὕστερον, ἐνίων
comes-to-be after what the for end of-some indeed later of-some
δὲ πρότερον. Καὶ διὰ τοῦτο πρῶτον μὲν τὸ ἔχον τὴν
but earlier And because-of this first indeed the having the
ἀρχὴν γίνεται μόριον, εἶτ' ἐχόμενον τὸ ἄνω κύτος.
principle comes-to-be part then next the upper trunk
Διὸ τὰ περὶ τὴν κεφαλὴν καὶ τὰ ὄμματα μέγιστα κατ'
Wherefore the about the head and the eyes greatest at
ἀρχὰς φαίνεται τοῖς ἐμβρύοις, τὰ δὲ κάτω τοῦ ὀμφαλοῦ,
the-beginnings appear in-the embryos the but below the navel
οἷον τὰ κῶλα, μικρά· τοῦ γὰρ ἄνω τὰ κάτω ἕνεκεν, καὶ
such-as the limbs small of-the for upper the lower for-the-sake and
οὔτε μόρια τοῦ τέλους οὔτε γεννητικὰ αὐτοῦ. Οὐ καλῶς δὲ
neither parts of-the end nor generative of-it Not well and
λέγουσιν οὐδὲ τοῦ διὰ τί τὴν ἀνάγκην, ὅσοι λέγουσιν
speak nor of-the because-of what the necessity as-many-as say

ὅτι οὕτως ἀεὶ γίνεται, καὶ ταύτην εἶναι νομίζουσιν
that so always it-comes-about and this to-be think
ἀρχὴν ἐν αὐτοῖς, ὥσπερ Δημόκριτος ὁ Ἀβδηρίτης, ὅτι τοῦ
principle in them just-as Democritus the Abderite that of-the
μὲν ἀεὶ καὶ ἀπείρου οὐκ ἔστιν ἀρχή, τὸ δὲ διὰ τί
indeed always and infinite not there-is principle the but because-of what
ἀρχή, τὸ δ' ἀεὶ ἄπειρον, ὥστε τὸ ἐρωτᾶν τὸ διὰ τί
principle the but always infinite so-that the to-ask the because-of what
περὶ τῶν τοιούτων τινὸς τὸ ζητεῖν εἶναί φησι τοῦ ἀπείρου
about the such some the to-seek to-be he-says of-the infinite
ἀρχήν. Καίτοι κατὰ τοῦτον τὸν λόγον, καθ' ὃν ἀξιοῦσι τὸ
principle And-yet by this the account by which they-claim the
διὰ τί μὴ ζητεῖν, οὐθενὸς ἀπόδειξις ἔσται τῶν ἀϊδίων·
because-of what not to-seek of-nothing demonstration will-be of-the eternal
φαίνεται δ' οὖσα πολλῶν, τῶν μὲν γινομένων ἀεὶ τῶν δ'
it-appears but being of-many of-the indeed coming-to-be always of-the but
ὄντων, ἐπεὶ καὶ τὸ τρίγωνον ἔχειν δυσὶν ὀρθαῖς ἴσας ἀεὶ
being since also the triangle to-have to-two right equal always
καὶ τὸ τὴν διάμετρον ἀσύμμετρον εἶναι πρὸς τὴν πλευρὰν
and the the diagonal incommensurable to-be with the side
ἀΐδιον, ἀλλ' ὅμως ἐστὶν αὐτῶν αἴτιόν τι καὶ ἀπόδειξις.
eternal but nevertheless is of-them cause some and demonstration
Τὸ μὲν οὖν μὴ πάντων ἀξιοῦν ζητεῖν ἀρχὴν λέγεται
The indeed then not of-all to-claim to-seek principle is-said
καλῶς, τὸ δὲ τῶν ὄντων ἀεὶ καὶ γινομένων πάντων οὐ
well the but of-the being always and coming-to-be all not
καλῶς, ἀλλ' ὅσαι τῶν ἀϊδίων ἀρχαὶ τυγχάνουσιν οὖσαι·
well but as-many-as of-the eternal principles happen being
τῆς γὰρ ἀρχῆς ἄλλη γνῶσις καὶ οὐκ ἀπόδειξις. Ἀρχὴ δ' ἐν
of-the for principle other knowledge and not demonstration Principle and in
μὲν τοῖς ἀκινήτοις τὸ τί ἐστιν, ἐν δὲ τοῖς γινομένοις ἤδη
indeed the unmoved the what it-is in but the coming-to-be already

πλείους, τρόπον δ' ἄλλον καὶ οὐ πᾶσαι τὸν αὐτόν· ὧν
more way but other and not all the same of-which
μία τὸν ἀριθμόν, ὅθεν ἡ κίνησίς ἐστιν. Διὸ πάντα τὰ
one in-the number whence the motion is Wherefore all the
ἔναιμα καρδίαν ἔχει πρῶτον, ὥσπερ ἐλέχθη κατ' ἀρχάς·
blooded heart have first just-as was-said at the-beginnings
ἐν δὲ τοῖς ἄλλοις τὸ ἀνάλογον γίνεται τῇ καρδίᾳ πρῶτον.
in but the others the analogous comes-to-be to-the heart first
Ἐκ δὲ τῆς καρδίας αἱ φλέβες διατεταμέναι, καθάπερ οἱ
From and the heart the veins stretched-out just-as the
τοὺς κανάβους γράφοντες ἐν τοῖς τοίχοις· τὰ γὰρ μέρη περὶ
the outlines drawing on the walls the for parts about
ταύτας ἐστίν, ἅτε γινόμενα ἐκ τούτων. Ἡ δὲ γένεσίς ἐστιν
these are as coming-to-be from these The and generation is
ἐκ τῶν ὁμοιομερῶν ὑπὸ ψύξεως καὶ θερμότητος. Συνίσταται
from the uniform by cooling and heat Are-constituted
γὰρ καὶ πήγνυται τὰ μὲν ψυχρῷ τὰ δὲ θερμῷ.
for and are-congealed the-ones indeed by-cold the-others and by-heat
Περὶ δὲ τῆς τούτων διαφορᾶς εἴρηται πρότερον ἐν
About and the of-these difference it-has-been-said before in
ἑτέροις, ποῖα λυτὰ ὑγρῷ καὶ πυρί, καὶ ποῖα ἄλυτα
other-works what-sort soluble by-moist and by-fire and what-sort insoluble
ὑγρῷ καὶ ἄτηκτα πυρί. Διὰ μὲν οὖν τῶν φλεβῶν καὶ
by-moist and unmeltable by-fire Through indeed then the veins and
τῶν ἐν ἑκάστοις πόρων διαπιδύουσα ἡ τροφή, καθάπερ
the in each ducts oozing-through the nourishment just-as
ἐν τοῖς ὠμοῖς κεραμίοις τὸ ὕδωρ, γίνονται σάρκες ἢ τὸ
in the unbaked earthenware the water come-to-be flesh or the
ταύταις ἀνάλογον, ὑπὸ τοῦ ψυχροῦ συνιστάμεναι, διὸ
to-these analogous by the cold being-constituted wherefore
καὶ λύονται ὑπὸ πυρός. Ὅσα δὲ γεηρὰ λίαν τῶν
also they-are-dissolved by fire As-many-as and earthy very of-the

ἀνατελλόντων, ὀλίγην ἔχοντα ὑγρότητα καὶ θερμότητα,
rising-up little having moisture and heat
ταῦτα δὲ ψυχόμενα ἐξατμίζοντος τοῦ ὑγροῦ μετὰ τοῦ θερμοῦ
these and being-cooled evaporating the moisture with the heat
γίνεται σκληρὰ καὶ γεώδη τὴν μορφήν, οἷον ὄνυχες καὶ
become hard and earthy in-the shape such-as nails and
κέρατα καὶ ὁπλαὶ καὶ ῥύγχη· διὸ μαλάττεται μὲν πυρί,
horns and hoofs and beaks wherefore are-softened indeed by-fire
τήκεται δ' οὐθέν, ἀλλ' ἔνια τοῖς ὑγροῖς, οἷον τὰ κελύφη
are-melted but none but some by-the moist-things such-as the shells
τῶν ᾠῶν. Ὑπὸ δὲ τῆς ἐντὸς θερμότητος τά τε νεῦρα καὶ
of-the eggs By and the inner heat the both sinews and
τὰ ὀστᾶ γίνεται, ξηραινομένης τῆς ὑγρότητος. Διὸ καὶ
the bones come-to-be being-dried the moisture Wherefore also
ἄλυτά ἐστι τὰ ὀστᾶ ὑπὸ τοῦ πυρός, καθάπερ κέραμος· οἷον
insoluble are the bones by the fire just-as earthenware as
γὰρ ἐν καμίνῳ, ὠπτημένα ὑπὸ τῆς ἐν τῇ γενέσει θερμότητος.
for in kiln baked by the in the generation heat
Αὕτη δὲ οὔτε ὅ τι ἔτυχε ποιεῖ σάρκα ἢ ὀστοῦν, οὔθ' ὅπῃ
This and neither what ever chanced makes flesh or bone nor where
ἔτυχεν, ἀλλὰ τὸ πεφυκὸς καὶ ᾗ πέφυκε καὶ ὅτε πέφυκεν.
it-chanced but the natural and where it-is-natural and when it-is-natural
Οὔτε γὰρ τὸ δυνάμει ὂν ὑπὸ τοῦ μὴ τὴν ἐνέργειαν
Neither for the in-potentiality being by the not the activity
ἔχοντος κινητικοῦ ἔσται, οὔτε τὸ τὴν ἐνέργειαν ἔχον ποιήσει
having mover will-be nor the the activity having will-make
ἐκ τοῦ τυχόντος, ὥσπερ οὔτε κιβωτὸν μὴ ἐκ ξύλου ὁ
from the chance just-as neither chest not from wood the
τέκτων ποιήσειεν ἄν, οὔτ' ἄνευ τούτου κιβωτὸς ἔσται ἐκ
carpenter would-make — nor without this chest will-be from
τῶν ξύλων. Ἡ δὲ θερμότης ἐνυπάρχει ἐν τῷ σπερματικῷ
the timbers The and heat is-present-in in the seminal

περιττώματι τοσαύτην καὶ τοιαύτην ἔχουσα τὴν κίνησιν καὶ
residue so-much and such having the motion and
τὴν ἐνέργειαν, ὅση σύμμετρος εἰς ἕκαστον τῶν μορίων.
the activity as-much-as proportionate for each of-the parts
Καθ' ὅσον δ' ἂν ἐλλείπῃ ἢ ὑπερβάλλῃ, ἢ χεῖρον
By as-much-as but — it-fall-short or exceed either worse
ἀποτελεῖ ἢ ἀνάπηρον τὸ γινόμενον, παραπλησίως τοῖς ἔξω
it-completes or maimed the coming-to-be similarly to-the outside
συνισταμένοις διὰ τῆς ἑψήσεως πρὸς τροφῆς ἀπόλαυσιν
being-constituted through the boiling for nourishment's enjoyment
ἤ τινα ἄλλην ἐργασίαν. Ἀλλ' ἐνταῦθα μὲν ἡμεῖς τὴν τῆς
or some other working But here indeed we the of-the
θερμότητος συμμετρίαν εἰς τὴν κίνησιν παρασκευάζομεν,
heat proportion for the motion prepare
ἐκεῖ δὲ δίδωσιν ἡ φύσις ἡ τοῦ γεννῶντος.
there but gives the nature the of-the generator
Τοῖς δὲ αὐτομάτως γινομένοις ἡ τῆς ὥρας αἰτία κίνησις καὶ
For-the and spontaneously coming-to-be the of-the season cause motion and
θερμότης. Ἡ δὲ ψύξις στέρησις θερμότητός ἐστιν. Χρῆται
heat The and cooling privation of-heat is Uses
δ' ἀμφοτέροις ἡ φύσις ἔχουσι μὲν δύναμιν ἐξ ἀνάγκης
and both the nature having indeed power from necessity
ὥστε τὸ μὲν τοδὶ τὸ δὲ τοδὶ ποιεῖν, ἐν μέντοι τοῖς
so-that the-one indeed this the-other and that to-make in however the
γινομένοις ἕνεκά τινος συμβαίνει τὸ μὲν ψύχειν αὐτῶν
coming-to-be for-the-sake of-something it-happens the-one indeed to-cool of-them
τὸ δὲ θερμαίνειν, καὶ γίνεσθαι τῶν μορίων ἕκαστον, τὴν
the-other and to-heat and to-come-to-be of-the parts each the
μὲν σάρκα μαλακὴν τῇ μὲν ἐξ ἀνάγκης ποιούντων
indeed flesh soft in-one-way indeed from necessity making
τοιαύτην τῇ δ' ἕνεκά τινος, τὸ δὲ νεῦρον ξηρὸν
such in-another but for-the-sake of-something the and sinew dry

καὶ ἑλκτόν, τὸ δ' ὀστοῦν ξηρὸν καὶ θραυστόν. Τὸ δὲ δέρμα
and ductile the and bone dry and brittle The and skin
ξηραινομένης τῆς σαρκὸς γίνεται, καθάπερ ἐπὶ τοῖς ἑψήμασιν
drying the flesh comes-to-be just-as on the boiled-things
ἡ καλουμένη γραῦς. Οὐ μόνον δὲ διὰ τὸ ἔσχατον
the so-called scum Not only and because-of the outermost
συμβαίνει αὐτοῦ ἡ γένεσις, ἀλλὰ καὶ διότι ἐπιπολάζει τὸ
happens of-it the generation but also because floats the
γλίσχρον διὰ τὸ μὴ δύνασθαι ἐξατμίζειν. Ἐν μὲν οὖν
viscous because-of the not to-be-able to-evaporate In indeed then
τοῖς ἄλλοις αὐχμηρὸν τὸ γλίσχρον (διὸ ὀστρακόδερμα
the others dry the viscous wherefore testaceous
καὶ μαλακόστρακα τὰ ἔσχατά ἐστι τῶν ἀναίμων ζῴων),
and crustaceous the outermost are of-the bloodless animals
ἐν δὲ τοῖς ἐναίμοις τὸ γλίσχρον λιπαρώτερόν ἐστιν.
in but the blooded the viscous oilier is
Καὶ τούτων ὅσα μὴ γεώδη τὴν φύσιν ἔχει λίαν,
And of-these as-many-as not earthy the nature have very
ἀθροίζεται τὸ πιμελῶδες ὑπὸ τὴν τοῦ δέρματος σκέπην,
is-collected the fatty under the of-the skin covering
ὡς τοῦ δέρματος γινομένου ἐκ τῆς τοιαύτης γλισχρότητος·
as the skin coming-to-be from the such viscosity
ἔχει γάρ τινα γλισχρότητα τὸ λιπαρόν. Πάντα δὲ ταῦτα,
has for some viscosity the oily All and these
καθάπερ εἴπομεν, λεκτέον γίνεσθαι τῇ μὲν ἐξ ἀνάγκης
just-as we-said must-be-said to-come-to-be in-one-way indeed from necessity
τῇ δ' οὐκ ἐξ ἀνάγκης ἀλλ' ἕνεκά τινος. Πρῶτον
in-another and not from necessity but for-the-sake of-something First
μὲν οὖν τὸ ἄνω κύτος ἀφορίζεται κατὰ τὴν γένεσιν, τὸ δὲ
indeed then the upper trunk is-marked-off in the generation the and
κάτω προϊόντος τοῦ χρόνου λαμβάνει τὴν αὔξησιν ἐν τοῖς
lower going-on the time takes the growth in the

ἐναίμοις. Ἅπαντα δὲ ταῖς περιγραφαῖς διορίζεται πρότερον,
blooded All and by-the outlines are-distinguished first
ὕστερον δὲ λαμβάνει τὰ χρώματα καὶ τὰς μαλακότητας καὶ
later and take the colors and the softnesses and
τὰς σκληρότητας, ἀτεχνῶς ὥσπερ ἂν ὑπὸ ζωγράφου τῆς
the hardnesses simply just-as — by painter the
φύσεως δημιουργούμενα· καὶ γὰρ οἱ γραφεῖς ὑπογράψαντες
nature being-fashioned and for the painters having-sketched
ταῖς γραμμαῖς οὕτως ἐναλείφουσι τοῖς χρώμασι τὸ ζῷον.
with-the lines so paint-in with-the colors the animal
Διὰ μὲν οὖν τὸ τὴν ἀρχὴν ἐν τῇ καρδίᾳ τῶν αἰσθήσεων
Because-of indeed then the the principle in the heart of-the perceptions
εἶναι καὶ τοῦ ζῴου παντὸς αὕτη γίνεται πρῶτον· διὰ
to-be and of-the animal whole this comes-to-be first because-of
δὲ τὴν θερμότητα τὴν ταύτης, ᾗ τελευτῶσιν αἱ φλέβες
and the heat the of-this where end the veins
ἄνω, τὸ ψυχρὸν συνίστησιν ἀντίστροφον τῇ θερμότητι
above the cold constitutes counterpart to-the heat
τῇ περὶ τὴν καρδίαν τὸν ἐγκέφαλον.
the about the heart the brain
Διόπερ τὰ περὶ τὴν κεφαλὴν λαμβάνει συνεχῆ τὴν γένεσιν
Wherefore the about the head take continuous the generation
μετὰ τὴν καρδίαν, καὶ μεγέθει τῶν ἄλλων διαφέρει·
after the heart and in-size than-the others differ
πολὺς γὰρ καὶ ὑγρὸς ἐξ ἀρχῆς ὁ ἐγκέφαλος. Ἔχει δ'
much for and moist from beginning the brain Has and
ἀπορίαν τὸ περὶ τοὺς ὀφθαλμοὺς συμβαῖνον τῶν ζῴων.
puzzle the about the eyes happening of-the animals
Μέγιστοι μὲν γὰρ ἐξ ἀρχῆς φαίνονται καὶ πεζοῖς καὶ
Largest indeed for from beginning they-appear both in-walking and
πλωτοῖς καὶ πτηνοῖς, τελευταῖοι δὲ γίνονται τῶν μορίων·
in-swimming and in-winged last but they-come-to-be of-the parts

ἐν τῷ μεταξὺ γὰρ χρόνῳ συμπίπτουσιν. Αἴτιον δ' ὅτι
in the between for time they-collapse Cause and that
τὸ τῶν ὀφθαλμῶν αἰσθητήριον ἐστὶ μέν, ὥσπερ καὶ τὰ
the of-the eyes sense-organ is indeed just-as also the
ἄλλα αἰσθητήρια, ἐπὶ πόρων· ἀλλὰ τὸ μὲν τῆς ἁφῆς καὶ
other sense-organs on ducts but the indeed of-the touch and
γεύσεως εὐθύς ἐστιν ἢ σῶμα ἢ τοῦ σώματός τι
of-taste at-once is either body or of-the body some-part
τῶν ζῴων, ἡ δ' ὄσφρησις καὶ ἡ ἀκοὴ πόροι συνάπτοντες
of-the animals the but smell and the hearing ducts connecting
πρὸς τὸν ἀέρα τὸν θύραθεν, πλήρεις συμφύτου πνεύματος,
to the air the outside full of-connate breath
περαίνοντες δὲ πρὸς τὰ φλέβια τὰ περὶ τὸν ἐγκέφαλον
ending and at the small-veins the about the brain
τείνοντα ἀπὸ τῆς καρδίας· ὁ δ' ὀφθαλμὸς σῶμα μόνον
extending from the heart the but eye body only
ἴδιον ἔχει τῶν αἰσθητηρίων. Ἔστι δ' ὑγρὸν καὶ ψυχρόν,
peculiar has of-the sense-organs It-is and moist and cold
καὶ οὐ προϋπάρχον ἐν τῷ τόπῳ, καθάπερ καὶ τὰ ἄλλα
and not pre-existing in the place just-as also the other
μόρια δυνάμει, ἔπειτα ἐνεργείᾳ γινόμενα ὕστερον· ἀλλ'
parts in-potentiality then in-actuality coming-to-be later but
ἀπὸ τῆς περὶ τὸν ἐγκέφαλον ὑγρότητος ἀποκρίνεται τὸ
from the about the brain moisture is-secreted the
καθαρώτατον διὰ τῶν πόρων, οἱ φαίνονται φέροντες
purest through the ducts which appear leading
ἀπ' αὐτῶν πρὸς τὴν μήνιγγα τὴν περὶ τὸν ἐγκέφαλον.
from them to the membrane the about the brain
Τούτου δὲ τεκμήριον· οὔτε γὰρ ἄλλο μόριον ὑγρὸν καὶ
Of-this and proof neither for other part moist and
ψυχρόν ἐστιν ἐν τῇ κεφαλῇ παρὰ τὸν ἐγκέφαλον, τό
cold is in the head beside the brain the

τ᾽ ὄμμα ψυχρὸν καὶ ὑγρόν. Ἐξ ἀνάγκης οὖν ὁ τόπος
and eye cold and moist From necessity then the place
λαμβάνει μέγεθος τὸ πρῶτον, συμπίπτει δ᾽ ὕστερον. Καὶ
takes size the first collapses but later And
γὰρ περὶ τὸν ἐγκέφαλον συμβαίνει τὸν αὐτὸν τρόπον· τὸ
for about the brain it-happens the same way the
πρῶτον ὑγρὸς καὶ πολύς, ἀποπνέοντος δὲ καὶ πεττομένου
first moist and much breathing-off but and being-concocted
σωματοῦταί τε μᾶλλον καὶ συμπίπτει καὶ ὁ ἐγκέφαλος
becomes-bodily both more and collapses both the brain
καὶ τὸ μέγεθος τὸ τῶν ὀμμάτων. Ἐξ ἀρχῆς δὲ διὰ μὲν
and the size the of-the eyes From beginning and because-of indeed
τὸν ἐγκέφαλον ἡ κεφαλὴ μεγίστη, διὰ δὲ τὸ ὑγρὸν τὸ
the brain the head largest because-of and the moist the
ἐν τοῖς ὄμμασιν οἱ ὀφθαλμοὶ μεγάλοι φαίνονται. Τελευταῖοι
in the eyes the eyes large appear Last
δὲ λαμβάνουσι τέλος διὰ τὸ καὶ τὸν ἐγκέφαλον
and they-take completion because-of the also the brain
συνίστασθαι μόλις· ὀψὲ γὰρ παύεται τῆς ψυχρότητος καὶ
to-be-constituted barely late for it-ceases from-the coldness and
τῆς ὑγρότητος, ἐπὶ πάντων μέν, μάλιστα δ᾽ ἐπὶ
the moisture in-the-case-of all indeed most but in-the-case-of
τῶν ἀνθρώπων. Διὰ γὰρ τοῦτο καὶ τὸ βρέγμα τῶν
the men Because-of for this also the bregma of-the
ὀστῶν γίνεται τελευταῖον· ἤδη γὰρ γεγενημένων θύραζε
bones comes-to-be last already for born outside
τῶν ἐμβρύων μαλακόν ἐστι τοῦτο τὸ ὀστοῦν τῶν παιδίων.
the embryos soft is this the bone of-the children
Αἴτιον δὲ τοῦ μάλιστ᾽ ἐπὶ τῶν ἀνθρώπων τοῦτο
Cause and of-the most in-the-case-of the men this
συμβαίνειν, ὅτι τὸν ἐγκέφαλον ὑγρότατον ἔχουσι καὶ
to-happen that the brain most-moist they-have and

πλεῖστον τῶν ζῴων. Τούτου δ' αἴτιον ὅτι καὶ τὴν ἐν τῇ
most of-the animals Of-this and cause that also the in the
καρδίᾳ θερμότητα καθαρωτάτην. Δηλοῖ δὲ τὴν εὐκρασίαν
heart heat purest Shows and the good-temperament
ἡ διάνοια· φρονιμώτατον γάρ ἐστι τῶν ζῴων ἄνθρωπος.
the thought most-intelligent for is of-the animals man
Ἀκρατῆ δὲ καὶ τὰ παιδία μέχρι πόρρω τῆς κεφαλῆς ἐστὶ
Uncontrolled and also the children up-to far of-the head are
διὰ τὸ βάρος τὸ περὶ τὸν ἐγκέφαλον. Ὁμοίως δὲ καὶ
because-of the weight the about the brain Likewise and also
τῶν μορίων ὅσα δεῖ κινεῖν· ἡ γὰρ ἀρχὴ τῆς κινήσεως
of-the parts as-many-as it-must to-move the for principle of-the motion
ὀψὲ κρατεῖ τῶν ἄνωθεν καὶ τελευταῖον, ὅσων ἡ κίνησις
late masters the upper-parts and last of-those-whose the motion
μὴ συνήρτηται πρὸς αὐτὴν ὥσπερ τῶν κώλων. Τοιοῦτον δ'
not is-connected to it just-as of-the limbs Such and
ἐστὶ μόριον τὸ βλέφαρον. Ἐπεὶ δ' οὐθὲν ποιεῖ περίεργον
is part the eyelid Since and nothing does superfluous
οὐδὲ μάτην ἡ φύσις, δῆλον ὡς οὐδ' ὕστερον οὐδὲ πρότερον·
nor in-vain the nature clear that neither later nor earlier
ἔσται γὰρ τὸ γεγονὸς μάτην ἢ περίεργον. Ὥσθ' ἅμ'
will-be for the having-come-to-be in-vain or superfluous So-that at-once
ἀνάγκη τὰ βλέφαρα διαχωρίζεσθαι καὶ δύνασθαι κινεῖν. Ὀψὲ
necessary the eyelids to-be-separated and to-be-able to-move Late
μὲν οὖν διὰ τὸ πλῆθος τῆς περὶ τὸν ἐγκέφαλον πέψεως
indeed then because-of the quantity of-the about the brain concoction
τελειοῦται τὰ ὄμματα τοῖς ζῴοις, τελευταῖα δὲ διὰ τὸ
are-completed the eyes for-the animals last and because-of the
σφόδρα κρατούσης τῆς κινήσεως εἶναι τὸ κινεῖν καὶ τὰ
strongly mastering the motion to-be the to-move also the
οὕτως πόρρω τῆς ἀρχῆς καὶ ἀπεψυγμένα τῶν μορίων.
so far from-the principle and cooled of-the parts

Δηλοῖ δὲ τὰ βλέφαρα τοιαύτην ἔχοντα τὴν φύσιν· ἂν
Shows and the eyelids such having the nature if
γὰρ καὶ ὁποσονοῦν βάρος γένηται περὶ τὴν κεφαλὴν
for even any-whatever weight come-to-be about the head
δι᾽ ὕπνον ἢ μέθην ἢ ἄλλο τι τῶν τοιούτων, οὐ
because-of sleep or drunkenness or other something of-the such not
δυνάμεθα τὰ βλέφαρα αἴρειν, οὕτω βάρος αὐτῶν ἐχόντων
we-can the eyelids to-raise so weight them having
μικρόν. Περὶ μὲν οὖν ὀφθαλμῶν εἴρηται πῶς γίνονται
small About indeed then eyes it-has-been-said how they-come-to-be
καὶ δι᾽ ὅ τι, καὶ διὰ τίν᾽ αἰτίαν τελευταίαν
and because-of what — and because-of what cause last
λαμβάνουσι τὴν διάρθρωσιν. Τῶν δ᾽ ἄλλων γίνεται
they-take the articulation Of-the but other comes-to-be
μορίων ἕκαστον ἐκ τῆς τροφῆς, τὰ μὲν τιμιώτατα καὶ
parts each from the nourishment the indeed most-honorable and
μετειληφότα τῆς κυριωτάτης ἀρχῆς ἐκ τῆς πεπεμμένης
having-shared of-the most-sovereign principle from the concocted
καὶ καθαρωτάτης καὶ πρώτης τροφῆς, τὰ δ᾽ ἀναγκαῖα
and purest and first nourishment the but necessary
μόρια καὶ τούτων ἕνεκεν ἐκ τῆς χείρονος καὶ τῶν
parts and of-these for-the-sake from the worse and the
ὑπολειμμάτων καὶ περιττωμάτων. Ὥσπερ γὰρ οἰκονόμος
remnants and residues Just-as for steward
ἀγαθός, καὶ ἡ φύσις οὐθὲν ἀποβάλλειν εἴωθεν ἐξ ὧν
good also the nature nothing to-throw-away is-wont from which
ἔστι ποιῆσαί τι χρηστόν. Ἐν δὲ ταῖς οἰκονομίαις
it-is-possible to-make something useful In and the households
τῆς γινομένης τροφῆς ἡ μὲν βελτίστη τέτακται τοῖς
of-the arising nourishment the indeed best is-assigned to-the

ἐλευθέροις, ἡ δὲ χείρων καὶ τὸ περίττωμα ταύτης οἰκέταις,
free the but worse and the residue of-this to-servants
τὰ δὲ χείριστα καὶ τοῖς συντρεφομένοις διδόασι ζῴοις.
the but worst also to-the being-reared-with they-give animals
Καθάπερ οὖν τὴν αὔξησιν ὁ θύραθεν ταῦτα ποιεῖ νοῦς,
Just-as then the growth the outside these-things makes intellect
οὕτως ἐν τοῖς γινομένοις αὐτοῖς ἡ φύσις ἐκ μὲν τῆς
so in the coming-to-be themselves the nature from indeed the
καθαρωτάτης ὕλης σάρκας καὶ τῶν ἄλλων αἰσθητηρίων τὰ
purest matter flesh and of-the other sense-organs the
σώματα συνίστησιν, ἐκ δὲ τῶν περιττωμάτων ὀστᾶ καὶ
bodies constitutes from but the residues bones and
νεῦρα καὶ τρίχας, ἔτι δ' ὄνυχας καὶ ὁπλὰς καὶ πάντα τὰ
sinews and hairs further and nails and hoofs and all the
τοιαῦτα· διὸ τελευταῖα ταῦτα λαμβάνει τὴν σύστασιν,
such wherefore last these take the constitution
ὅταν ἤδη γίγνηται περίττωμα τῆς φύσεως. Ἡ μὲν οὖν τῶν
when already come-to-be residue of-the nature The indeed then of-the
ὀστῶν φύσις ἐν τῇ πρώτῃ συστάσει γίνεται τῶν μορίων ἐκ
bones nature in the first constitution comes-to-be of-the parts from
τῆς σπερματικῆς περιττώσεως, καὶ τῶν ζῴων αὐξανομένων
the seminal residue and the animals growing
ἐκ τῆς φυσικῆς τροφῆς λαμβάνει τὴν αὔξησιν, ἐξ ἥσπερ
from the natural nourishment takes the growth from which-very
τὰ μόρια τὰ κύρια, ταύτης μέντοι αὐτῆς τὰ ὑπολείμματα
the parts the sovereign of-this however itself the remnants
καὶ τὰ περιττωματικά. Γίνεται γὰρ ἐν παντὶ τὸ πρῶτον
and the residual Comes-to-be for in everything the first
καὶ τὸ δεύτερον, καὶ τῆς τροφῆς τὸ μὲν θρεπτικὸν
and the second also of-the nourishment the-one indeed nutritive
τὸ δ' αὐξητικόν, θρεπτικὸν μὲν ὃ τὸ εἶναι παρέχεται
the-other and growth-giving nutritive indeed which the being provides

τῷ τε ὅλῳ καὶ τοῖς μορίοις, αὐξητικὸν δὲ τὸ εἰς μέγεθος
to-the both whole and to-the parts growth-giving but the to size
ποιοῦν τὴν ἐπίδοσιν· περὶ ὧν ὕστερον διοριστέον μᾶλλον.
making the increase about which later must-be-determined more
Τὸν αὐτὸν δὲ τρόπον τοῖς ὀστοῖς καὶ τὰ νεῦρα συνίσταται
The same and way to-the bones also the sinews are-constituted
καὶ ἐκ τῶν αὐτῶν, ἐκ τῆς σπερματικῆς περιττώσεως
and from the same from the seminal residue
καὶ τῆς θρεπτικῆς. Ὄνυχες δὲ καὶ τρίχες καὶ ὁπλαὶ καὶ
and the nutritive Nails and and hairs and hoofs and
κέρατα καὶ ῥύγχη καὶ τὰ πλῆκτρα τῶν ὀρνίθων, καὶ
horns and beaks and the spurs of-the birds and
εἴ τι τοιοῦτον ἕτερόν ἐστι μόριον, ἐκ τῆς ἐπικτήτου
if anything such other is part from the acquired
τροφῆς καὶ τῆς αὐξητικῆς, ἥν τε παρὰ τοῦ θήλεος
nourishment and the growth-giving which both from the female
ἐπικτᾶται καὶ τῆς θύραθεν. Διὰ τοῦτο τὰ μὲν ὀστᾶ
it-acquires and the from-outside Because-of this the indeed bones
μέχρι τινὸς λαμβάνει τὴν αὔξησιν. Ἔστι γάρ τι πᾶσι
up-to some-point take the growth There-is for some for-all
τοῖς ζῴοις πέρας τοῦ μεγέθους, διὸ καὶ τῆς τῶν ὀστῶν
the animals limit of-the size wherefore also of-the of-the bones
αὐξήσεως. Εἰ γὰρ ταῦτ' εἶχεν αὔξησιν ἀεί, καὶ τῶν ζῴων
growth If for these had growth always also of-the animals
ὅσα ἔχει ὀστοῦν ἢ τὸ ἀνάλογον, ηὐξάνετ' ἂν ἕως
as-many-as have bone or the analogous they-would-grow — as-long-as
ἔζη· τοῦ γὰρ μεγέθους ὅρος ἐστὶ ταῦτα τοῖς ζῴοις.
it-lived of-the for size limit are these for-the animals
Δι' ἣν μὲν οὖν αἰτίαν οὐκ ἀεὶ λαμβάνουσιν αὔξησιν,
Because-of which indeed then cause not always they-take growth
λεκτέον ὕστερον· τρίχες δὲ καὶ τὰ συγγενῆ τούτοις, ἕως
must-be-said later hairs but and the akin to-these as-long-as

ἂν ὑπάρχωσιν, αὐξάνονται, καὶ μᾶλλον ἐν νόσοις καὶ τῶν
— they-be-present grow and more in diseases and the
σωμάτων γηρασκόντων καὶ φθινόντων· διὰ τὸ λείπεσθαι
bodies growing-old and wasting because-of the to-be-left
περίττωμα πλεῖον ἐλάττονος εἰς τὰ κύρια δαπανωμένου
residue more less into the sovereign being-spent
διὰ τὸ γῆρας καὶ τὰς νόσους, ἐπεί γ' ὅταν ὑπολείπῃ
because-of the old-age and the diseases since at-least when it-fail
καὶ τοῦτο διὰ τὴν ἡλικίαν, καὶ αἱ τρίχες ὑπολείπουσιν.
also this because-of the age also the hairs fail
Τὰ δ' ὀστᾶ τοὐναντίον· συμφθίνει γὰρ τῷ σώματι καὶ τοῖς
The but bones the-opposite waste-with for the body and the
μέρεσιν. Αὐξάνονται δ' αἱ τρίχες καὶ τεθνεώτων, οὐ μέντοι
parts Grow and the hairs even of-the-dead not however
γίνονταί γ' ἐξ ὑπαρχῆς. Περὶ δ' ὀδόντων ἀπορήσειεν
they-come-to-be at-least from the-beginning About and teeth would-be-puzzled
ἄν τις. Εἰσὶ γὰρ τὴν μὲν φύσιν τὴν αὐτὴν ἔχοντες
— someone They-are for the indeed nature the same having
τοῖς ὀστοῖς, καὶ γίνονται ἐκ τῶν ὀστῶν, ὄνυχες δὲ καὶ
to-the bones and come-to-be from the bones nails but and
τρίχες καὶ κέρατα καὶ τὰ τοιαῦτα ἐκ τοῦ δέρματος, διὸ
hairs and horns and the such from the skin wherefore
καὶ συμμεταβάλλουσι τῷ δέρματι τὰς χρόας· λευκά
also they-change-together with-the skin the colors white
τε γὰρ καὶ μέλανα γίνονται καὶ παντοδαπὰ κατὰ τὴν
both for and black they-become and of-every-kind according-to the
τοῦ δέρματος χρόαν, οἱ δ' ὀδόντες οὐθέν· ἐκ γὰρ τῶν
of-the skin color the but teeth not-at-all from for the
ὀστῶν εἰσίν, ὅσα τῶν ζῴων ἔχει ὀδόντας καὶ ὀστᾶ.
bones they-are as-many-as of-the animals have teeth and bones
Αὐξάνονται δὲ διὰ βίου μόνοι τῶν ἄλλων ὀστῶν· τοῦτο
Grow and through life alone of-the other bones this

δὲ δῆλον ἐπὶ τῶν παρακλινόντων ὀδόντων τὴν ἁφὴν
and clear in-the-case-of the inclining-aside teeth the contact
τὴν ἀλλήλων. Αἴτιον δὲ τῆς αὐξήσεως, ὡς μὲν ἕνεκά
the of-one-another Cause and of-the growth as indeed for-the-sake-of
του, διὰ τὸ ἔργον· ταχὺ γὰρ ἂν κατετρίβοντο μὴ
something because-of the work quickly for — they-would-be-worn-down not
γινομένης τινὸς ἐπιρρύσεως, ἐπεὶ καὶ νῦν ἐνίοις γηράσκουσι,
coming-about some inflow since even now in-some growing-old
τοῖς βρωτικοῖς μὲν μὴ μεγάλους δ' ἔχουσι, κατατρίβονται
the gluttonous indeed not large but having are-worn-down
πάμπαν· πλείονι γὰρ λόγῳ καθαιροῦνται τῆς αὐξήσεως.
altogether in-greater for ratio they-are-reduced than-the growth
Διὸ καὶ τοῦτο εὖ μεμηχάνηται πρὸς τὸ συμβαῖνον ἡ
Wherefore also this well has-contrived for the happening the
φύσις· συνάγει γὰρ εἰς τὸ γῆρας καὶ τὴν τελευτὴν τὴν
nature it-brings-together for into the old-age and the end the
ὑπόλειψιν τῶν ὀδόντων. Εἰ δ' ἦν μυριετὴς ὁ βίος
failing of-the teeth If but were of-ten-thousand-years the life
ἢ χιλιετής, παμμεγέθεις τ' ἂν ἔδει γίνεσθαι
or of-a-thousand-years huge both — it-would-be-needful to-become
τοὺς ἐξ ἀρχῆς καὶ φύεσθαι πολλάκις· καὶ γὰρ εἰ συνεχῆ
the from beginning and to-grow often and for if continuous
τὴν αὔξησιν εἶχον, ὅμως ἂν ἄχρηστοι λεαινόμενοι πρὸς
the growth they-had nevertheless — useless being-worn-smooth for
τὴν ἐργασίαν ἦσαν. Οὗ μὲν οὖν ἕνεκα λαμβάνουσι
the work they-would-be Of-which indeed then for-the-sake they-take
τὴν αὔξησιν εἴρηται· συμβαίνει δὲ μηδὲ τὴν αὐτὴν
the growth it-has-been-said it-happens and not-even the same
ἔχειν φύσιν τοῖς ἄλλοις ὀστοῖς τοὺς ὀδόντας. Τὰ μὲν
to-have nature to-the other bones the teeth The indeed
γὰρ ἐν τῇ πρώτῃ συστάσει γίνεται πάντα καὶ οὐθὲν
for in the first constitution come-to-be all and nothing

ὕστερον, οἱ δ' ὀδόντες ὕστερον. Διὸ καὶ πάλιν δύνανται
later the but teeth later Wherefore also again they-can
φύεσθαι ἐκπεσόντες· ἅπτονται γάρ, ἀλλ' οὐ συμπεφύκασι
to-grow having-fallen-out they-touch for but not have-grown-together
τοῖς ὀστοῖς. Ἐκ μέντοι τῆς τροφῆς τῆς εἰς τὰ ὀστᾶ
with-the bones From however the nourishment the into the bones
διαδιδομένης γίνονται, διὸ τὴν αὐτὴν ἔχουσι φύσιν,
being-distributed they-come-to-be wherefore the same they-have nature
καὶ τότε ὅταν ἐκεῖνα ἔχῃ ἤδη τὸν ἀριθμὸν τὸν αὑτῶν.
and then when those have already the number the their-own
Τὰ μὲν οὖν ἄλλα ζῷα ἔχοντα γίνεται ὀδόντας καὶ τὸ
The indeed then other animals having come-to-be teeth and the
ἀνάλογον τοῖς ὀδοῦσιν, ἐὰν μή τι γίγνηται παρὰ
analogous to-the teeth if not something come-about contrary-to
φύσιν, διὰ τὸ ἀπολύεσθαι τῆς γενέσεως τετελεσμένα
nature because-of the to-be-loosed from-the generation completed
τοῦ ἀνθρώπου μᾶλλον· ὁ δ' ἄνθρωπος, ἂν μή τι
than-the man more the but man if not something
συμβῇ παρὰ φύσιν, οὐκ ἔχων. Δι' ἣν δ' αἰτίαν οἱ
happen contrary-to nature not having Because-of which and cause the-ones
μὲν γίνονται τῶν ὀδόντων καὶ ἐκπίπτουσιν, οἱ δ' οὐκ
indeed come-to-be of-the teeth and fall-out the-others but not
ἐκπίπτουσιν, ὕστερον λεχθήσεται. Διότι δ' ἐκ περιττώματός
fall-out later will-be-told Because and from residue
ἐστι τὰ τοιαῦτα τῶν μορίων, διὰ τοῦτ' ἄνθρωπος
are the such of-the parts because-of this man
ψιλότατόν τε κατὰ τὸ σῶμα τῶν ζῴων πάντων ἐστὶ καὶ
most-hairless both in-respect-of the body of-the animals all is and
ὄνυχας ἐλαχίστους ἔχει ὡς κατὰ μέγεθος· ἐλάχιστον γὰρ
nails smallest has as in-respect-of size least for

ἔχει περίττωμα γεώδες, ἔστι δὲ περίττωμα μὲν τὸ ἄπεπτον,
he-has residue earthy is and residue indeed the unconcocted
τὸ δὲ γεηρὸν ἐν τοῖς σώμασι πάντων ἀπεπτότατον.
the but earthy in the bodies of-all most-unconcocted

VII · THE NAVEL AND HYBRIDS

The live-bearing embryo grows through the navel, which strikes into the uterus like a root, by cotyledons in some animals and by a single great vein in most of the hornless; those who say it sucks a bit of flesh are wrong. Animals close in kind, size, and gestation can interbreed, as dogs, foxes, and wolves, or partridges and hens, and the hybrids are fertile, except the mule. Sterility comes from maimed parts, fatness, or disease; a man's semen is tested in water, where fertile semen sinks, and a woman by pessaries and colors in the eyes, for the eyes are the head's most seminal region.

Πῶς μὲν οὖν ἕκαστον συνίσταται τῶν μορίων, εἴρηται,
How indeed then each is-constituted of-the parts it-has-been-said
καὶ τί τῆς γενέσεως αἴτιον· ἔχει δὲ τὴν αὔξησιν τὰ
and what of-the generation cause have and the growth the
ζῳοτοκούμενα τῶν ἐμβρύων, ὥσπερ ἐλέχθη πρότερον, διὰ
born-live of-the embryos just-as was-said before through
τῆς τοῦ ὀμφαλοῦ προσφύσεως. Ἐπεὶ γὰρ ἔνεστιν ἐν τοῖς
the of-the navel attachment Since for is-in in the
ζῴοις καὶ ἡ θρεπτικὴ δύναμις τῆς ψυχῆς, ἀφίησιν εὐθὺς
animals also the nutritive power of-the soul it-sends-forth at-once
οἷον ῥίζαν τὸν ὀμφαλὸν εἰς τὴν ὑστέραν. Ἔστι δὲ ὁ
like root the navel into the uterus Are and the
ὀμφαλὸς ἐν κελύφει φλέβες, τοῖς μὲν μείζοσι πλείους, οἷον
navel in sheath veins in-the indeed larger more such-as
βοΐ καὶ τοῖς τοιούτοις, τοῖς δὲ μέσοις δύο, μία δὲ τοῖς
in-ox and in-the such in-the and middle two one and in-the

ἐσχάτοις. Διὰ δὲ τούτου λαμβάνει τὴν τροφὴν αἱματικήν.
smallest Through and this it-takes the nourishment bloody
Αἱ γὰρ ὑστέραι πέρατα φλεβῶν πολλῶν εἰσίν. Τὰ μὲν
The for uteri ends of-veins many are The indeed
οὖν μὴ ἀμφώδοντα πάντα, καὶ τῶν ἀμφωδόντων
then not having-teeth-in-both-jaws all and of-the having-teeth-in-both-jaws
ὅσων ἡ ὑστέρα μὴ μίαν φλέβα μεγάλην ἔχει διατείνουσαν
as-many-as the uterus not one vein great has stretching-through
ἀλλ' ἀντὶ μιᾶς πυκνὰς πολλάς, ταῦτα ἐν ταῖς ὑστέραις
but instead-of one close many these in the uteri
ἔχει τὰς καλουμένας κοτυληδόνας, τὸ μὲν περιφερὲς
have the so-called cotyledons the indeed convex
ἐχούσας πρὸς τὴν ὑστέραν, τὸ δὲ κοῖλον πρὸς τὸ ἔμβρυον.
having toward the uterus the but concave toward the embryo
Μεταξὺ δὲ τῆς ὑστέρας καὶ τοῦ ἐμβρύου τὸ χόριον
Between and the uterus and the embryo the chorion
καὶ οἱ ὑμένες εἰσίν. Αἱ δὲ κοτυληδόνες αὐξανομένου καὶ
and the membranes are The but cotyledons growing and
τελεουμένου τοῦ ἐμβρύου γίνονται ἐλάττους, καὶ τέλος
being-completed the embryo become smaller and finally
ἀφανίζονται τελεωθέντος. Εἰς τοῦτο γὰρ προεκτίθεται
disappear it-having-been-completed Into this for sets-out
τοῖς ἐμβρύοις ἡ φύσις τὴν αἱματικὴν τροφὴν τῆς ὑστέρας
for-the embryos the nature the bloody nourishment of-the uterus
ὥσπερ εἰς μαστούς, καὶ διὰ τὸ ἀθροίζεσθαι καὶ κατὰ
just-as into breasts and because-of the to-be-collected and by
μικρὸν ἐκ πολλῶν οἷον ἐξάνθημα καὶ φλεγμασία γίνεται τὸ
little from many like eruption and inflammation becomes the
σῶμα τὸ τῆς κοτυληδόνος. Ἕως μὲν ἂν οὖν ἔλαττον ᾖ τὸ
body the of-the cotyledon As-long-as indeed — then smaller be the
ἔμβρυον, οὐ δυνάμενον πολλὴν λαμβάνειν τροφήν, δῆλαί εἰσι
embryo not being-able much to-take nourishment visible are

καὶ μείζονες, αὐξηθέντος δὲ συμπίπτουσιν. Τὰ δὲ πολλὰ τῶν
and larger grown but they-collapse The but most of-the
κολοβῶν ζῴων καὶ ἀμφωδόντων οὐκ ἔχει κοτυληδόνα ἐν
hornless animals and having-teeth-in-both-jaws not have cotyledon in
ταῖς ὑστέραις, ἀλλ᾽ ὁ ὀμφαλὸς εἰς φλέβα τείνει μίαν, αὕτη
the uteri but the navel to vein extends one this
δὲ τέταται διὰ τῆς ὑστέρας ἔχουσα μέγεθος. Ἐπεὶ δὲ τὰ
and is-stretched through the uterus having size Since and the-ones
μὲν μονοτόκα τὰ δὲ πολυτόκα τῶν τοιούτων ἐστὶ ζῴων,
indeed single-bearing the-others and many-bearing of-the such are animals
καὶ τὰ πλείω τῶν ἐμβρύων τὸν αὐτὸν ἔχει τρόπον τῷ ἑνί.
also the more of-the embryos the same have way to-the one
Δεῖ δὲ ταῦτα θεωρεῖν ἔκ τε τῶν παραδειγμάτων τῶν
One-must and these-things to-study from both the examples the
ἐν ταῖς ἀνατομαῖς καὶ τῶν ἐν ταῖς ἱστορίαις γεγραμμένων.
in the dissections and the in the inquiries written
Πεφύκασι γὰρ τὰ ζῷα ἐκ τοῦ ὀμφαλοῦ, ὁ δ᾽ ὀμφαλὸς ἐκ
Grow for the animals from the navel the and navel from
τῆς φλεβὸς ἐφεξῆς ἀλλήλοις, ὡσπερανεὶ παρ᾽ ὀχετὸν τὴν
the vein next to-one-another as-it-were beside a-channel the
φλέβα ῥέουσαν· περὶ δὲ ἕκαστον τῶν ἐμβρύων οἵ θ᾽ ὑμένες
vein flowing about and each of-the embryos the both membranes
καὶ τὸ χόριόν ἐστιν. Οἱ δὲ λέγοντες τρέφεσθαι τὰ παιδία
and the chorion is The but saying to-be-nourished the children
ἐν ταῖς ὑστέραις διὰ τοῦ σαρκίδιόν τι βδάλλειν οὐκ
in the uteri through the little-piece-of-flesh some to-suck not
ὀρθῶς λέγουσιν· ἐπί τε γὰρ τῶν ἄλλων ζῴων ταὐτὸν
correctly speak in-the-case-of both for the other animals the-same
συνέβαινεν ἄν, νῦν δ᾽ οὐ φαίνεται (θεωρῆσαι γὰρ τοῦτο
would-happen — now but not it-appears to-study for this
ῥᾴδιον διὰ τῶν ἀνατομῶν), καὶ περὶ ἅπαντα τὰ ἔμβρυα
easy through the dissections and about all the embryos

καὶ τὰ πτηνὰ καὶ τὰ πλωτὰ καὶ τὰ τῶν πεζῶν ὁμοίως
both the winged and the swimming and the of-the land likewise
λεπτοὶ περιέχουσιν ὑμένες χωρίζοντες ἀπὸ τῆς ὑστέρας καὶ
thin surround membranes separating from the uterus and
τῶν ἐγγινομένων ὑγρῶν, ἐν οἷς οὔτ' αὐτοῖς ἔνεστι τοιοῦτον
the arising-in fluids in which neither in-them is-in such
οὐθέν, οὔτε διὰ τούτων οὐθενὸς ἐνδέχεται ποιεῖσθαι τὴν
anything nor through these of-anything is-it-possible to-make the
ἀπόλαυσιν. Τὰ δ' ᾠοτοκούμενα πάντα ὅτι λαμβάνει τὴν
enjoyment The but egg-born all that take the
αὔξησιν χωρισθέντα τῆς μήτρας ἔξω, φανερόν.
growth separated from-the womb outside evident
Γίνεται δὲ ὁ συνδυασμὸς τοῖς ζῴοις κατὰ φύσιν μὲν
Comes-about and the coupling for-the animals according-to nature indeed
τοῖς ὁμογενέσιν, οὐ μὴν ἀλλὰ καὶ τοῖς μὲν ἐγγὺς τὴν
for-the same-kind not truly but also for-the indeed near the
φύσιν ἔχουσιν, οὐκ ἀδιαφόροις δὲ τῷ εἴδει, ἐὰν τά τε
nature having not undifferentiated but in-the species if the both
μεγέθη παραπλήσια ᾖ καὶ οἱ χρόνοι ἴσοι ὦσι τῆς κυήσεως.
sizes similar be and the times equal be of-the gestation
Σπάνια μὲν οὖν γίνεται τὰ τοιαῦτα ἐπὶ τῶν ἄλλων,
Rare indeed then come-to-be the such in-the-case-of the others
γίνεται δὲ καὶ ἐπὶ κυνῶν καὶ ἀλωπέκων καὶ
it-comes-about but also in-the-case-of dogs and foxes and
λύκων· καὶ οἱ Ἰνδικοὶ δὲ κύνες ἐκ θηρίου τινὸς κυνώδους
wolves and the Indian and dogs from beast some dog-like
γεννῶνται καὶ κυνός. Καὶ ἐπὶ τῶν ὀρνίθων δὲ
are-generated and dog And in-the-case-of the birds and
τῶν ὀχευτικῶν ὦπται τοῦτο συμβαῖνον, οἷον ἐπὶ
the salacious has-been-seen this happening such-as in-the-case-of
περδίκων καὶ ἀλεκτορίδων· καὶ τῶν γαμψωνύχων οἱ
partridges and hens and of-the crook-taloned the

ἱέρακες δοκοῦσιν οἱ διαφέροντες τῷ εἴδει μίγνυσθαι πρὸς
hawks seem the differing in-the species to-mix with
ἀλλήλους· καὶ ἐπ᾽ ἄλλων δέ τινων ὀρνέων ἔχει τὸν
one-another and in-the-case-of other and some birds it-has the
αὐτὸν τρόπον. Ἐπὶ δὲ τῶν θαλαττίων οὐθὲν ἀξιόλογον
same way In-the-case-of but the sea-animals nothing worth-mention
ἑώραται, δοκοῦσι δὲ μάλιστα οἱ ῥινοβάται καλούμενοι
has-been-seen seem and most the rhinobatus so-called
γίνεσθαι ἐκ ῥίνης καὶ βάτου συνδυαζομένων. Λέγεται δὲ
to-come-to-be from angel-shark and ray coupling Is-said and
καὶ τὸ περὶ τῆς Λιβύης παροιμιαζόμενον, ὡς ἀεί τι
also the about the Libya proverbial that always something
τῆς Λιβύης τρεφούσης καινόν, διὰ τὸ μίγνυσθαι καὶ τὰ
the Libya nourishing new because-of the to-mix also the
μὴ ὁμόφυλα ἀλλήλοις λεχθῆναι τοῦτο· διὰ γὰρ τὴν
not same-tribe with-one-another to-have-been-said this because-of for the
σπάνιν τοῦ ὕδατος ἀπαντῶντα πάντα πρὸς ὀλίγους τόπους
scarcity of-the water meeting all at few places
τοὺς ἔχοντας νάματα μίγνυσθαι καὶ τὰ μὴ ὁμογενῆ.
the having springs to-mix also the not same-kind
Τὰ μὲν οὖν ἄλλα τῶν ἐκ τοιαύτης μίξεως γινομένων
The indeed then others of-the from such mixing coming-to-be
συνδυαζόμενα φαίνεται πάλιν ἀλλήλοις καὶ μιγνύμενα
coupling appear again with-one-another and mixing
καὶ δυνάμενα τό τε θῆλυ καὶ τὸ ἄρρεν γεννᾶν, οἱ δ᾽
and being-able the both female and the male to-generate the but
ὀρεῖς ἄγονοι μόνοι τῶν τοιούτων· οὔτε γὰρ ἐξ ἀλλήλων
mules infertile alone of-the such neither for from one-another
οὔτ᾽ ἄλλοις μιγνύμενοι γεννῶσιν. Ἔστι δὲ τὸ πρόβλημα
nor with-others mixing they-generate Is and the problem
καθόλου μέν, διὰ τίν᾽ αἰτίαν ἄγονον ἢ ἄρρεν ἢ θῆλύ
generally indeed because-of what cause infertile either male or female

ἐστιν· εἰσὶ γὰρ καὶ γυναῖκες καὶ ἄνδρες ἄγονοι, καὶ τῶν
is are for both women and men infertile and of-the
ἄλλων ζῴων ἐν τοῖς γένεσιν ἑκάστοις οἷον ἐν ἵπποις καὶ
other animals in the kinds each such-as in horses and
προβάτοις. Ἀλλὰ τοῦτο τὸ γένος ὅλον ἄγονόν ἐστι, τὸ τῶν
sheep But this the kind whole infertile is the of-the
ἡμιόνων. Τὰ δ' αἴτια τῆς ἀγονίας ἐπὶ μὲν τῶν ἄλλων
mules The but causes of-the infertility in-the-case-of indeed the others
πλείω συμβαίνει· καὶ γὰρ ἐκ γενετῆς, ὅταν πηρωθῶσι
more happen and for from birth when they-be-maimed
τοὺς τόπους τοὺς πρὸς τὴν μίξιν χρησίμους, ἄγονοι
the places the for the mixing useful infertile
γίνονται καὶ γυναῖκες καὶ ἄνδρες, ὥστε τὰς μὲν μὴ
become both women and men so-that the-ones indeed not
ἡβᾶν τοὺς δὲ μὴ γενειᾶν, ἀλλ' εὐνουχίας διατελεῖν
to-reach-puberty the-others and not to-grow-beard but in-eunuchry to-continue
ὄντας· τοῖς δὲ προϊούσης τῆς ἡλικίας ταὐτὸν συμβαίνει
being for-the-ones and going-on the age the-same happens
πάσχειν, ὁτὲ μὲν δι' εὐτροφίαν τῶν σωμάτων (ταῖς
to-suffer at-times indeed because-of good-nourishment of-the bodies in-the
μὲν γὰρ πιοτέραις γινομέναις τοῖς δ' εὐεκτικωτέροις εἰς
indeed for fatter becoming in-the and in-better-condition into
τὸ σῶμα καταναλίσκεται τὸ περίττωμα τὸ σπερματικόν,
the body is-used-up the residue the seminal
καὶ ταῖς μὲν οὐ γίνεται καταμήνια τοῖς δὲ γονή), ὁτὲ
and in-the indeed not occur menses in-the and semen at-times
δὲ διὰ νόσον οἱ μὲν ὑγρὸν καὶ ψυχρὸν προΐενται,
and because-of disease the-ones indeed moist and cold emit
ταῖς δὲ γυναιξὶν αἱ καθάρσεις φαῦλαι καὶ πλήρεις
in-the and women the purgations poor and full
νοσηματικῶν περιττωμάτων, πολλοῖς δὲ καὶ πολλαῖς
of-morbid residues to-many and also to-many-women

καὶ διὰ πηρώματα τοῦτο συμβαίνει τὸ πάθος περὶ τὰ
also through maimings this happens the affection about the
μόρια καὶ τοὺς τόπους τοὺς περὶ τὴν ὁμιλίαν χρησίμους.
parts and the places the about the intercourse useful
Γίνεται δὲ τὰ μὲν ἰατὰ τὰ δ' ἀνίατα τῶν τοιούτων,
Become and the-ones indeed curable the-others and incurable of-the such
μάλιστα δὲ διατελοῦσιν ἄγονα κατὰ τὴν πρώτην
most and continue infertile according-to the first
σύστασιν τοιαῦτα γενόμενα· γίνονται γὰρ γυναῖκές τε
constitution such having-become become for women both
ἀρρενωποὶ καὶ ἄνδρες θηλυκοί, καὶ ταῖς μὲν οὐ γίνεται τὰ
masculine and men effeminate and in-the indeed not occur the
καταμήνια, τοῖς δὲ τὸ σπέρμα λεπτὸν καὶ ψυχρόν. Διόπερ
menses in-the but the seed thin and cold Wherefore
εὐλόγως βασανίζεται ταῖς πείραις τό γε τῶν ἀνδρῶν,
reasonably is-tested by-the trials the at-least of-the men
εἰ ἄγονον, ἐν τῷ ὕδατι· ταχὺ γὰρ διαχεῖται τὸ λεπτὸν
whether infertile in the water quickly for spreads the thin
καὶ ψυχρὸν ἐπιπολῆς, τὸ δὲ γόνιμον εἰς βυθὸν χωρεῖ· θερμὸν
and cold on-the-surface the but fertile to bottom goes hot
μὲν γὰρ τὸ πεπεμμένον ἐστί, πέπεπται δὲ τὸ συνεστηκὸς
indeed for the concocted is is-concocted and the set
καὶ πάχος ἔχον. Τὰς δὲ γυναῖκας βασανίζουσι τοῖς τε
and thickness having The and women they-test with-the both
προσθέτοις, ἐὰν διικνῶνται αἱ ὀσμαὶ πρὸς τὸ πνεῦμα
pessaries if pass-through the smells to the breath
τὸ θύραζε κάτωθεν ἄνω, καὶ τοῖς ἐγχρίστοις εἰς τοὺς
the outside from-below upward and with-the smeared-in into the
ὀφθαλμοὺς χρώμασιν, ἂν χρωματίζωσι τὸ ἐν τῷ στόματι
eyes colors if they-color the in the mouth
πτύελον. Ταῦτα γὰρ οὐ συμβαίνοντα δηλοῖ τὸ σῶμα τοὺς
spittle These-things for not happening shows the body the

πόρους δι᾽ ὧν ἀποκρίνεται τὸ περίττωμα, συγκεχυμένους
ducts through which is-secreted the residue confused
ἔχειν καὶ συμπεφυκότας. Ὅ τε γὰρ περὶ τοὺς ὀφθαλμοὺς
to-have and grown-together The both for about the eyes
τόπος τῶν περὶ τὴν κεφαλὴν σπερματικώτατός ἐστιν.
place of-the about the head most-seminal is
Δηλοῖ δ᾽ ἐν μὲν ταῖς ὁμιλίαις μετασχηματιζόμενος
It-shows and in indeed the intercourses changing-shape
ἐπιδήλως μόνος, καὶ τοῖς χρωμένοις πλείοσιν ἀφροδισίοις
evidently alone and for-those using more sex
ἐνδιδόασι τὰ ὄμματα φανερῶς. Αἴτιον δ᾽ ὅτι ἡ τῆς
give-way the eyes evidently Cause and that the of-the
γονῆς φύσις ὁμοίως ἔχει τῇ τοῦ ἐγκεφάλου· ὑδατώδης
semen nature likewise is to-the of-the brain watery
γάρ ἐστιν ἡ ὕλη αὐτῆς, ἡ δὲ θερμότης ἐπίκτητος. Καὶ
for is the matter of-it the and heat acquired And
αἱ σπερματικαὶ καθάρσεις ἀπὸ τοῦ ὑποζώματος εἰσιν, ἡ
the seminal purgations from the diaphragm are the
γὰρ ἀρχὴ τῆς φύσεως ἐντεῦθεν, ὥστε διικνεῖσθαι πρὸς
for principle of-the nature from-there so-that to-pass-through to
τὸν θώρακα τὰς κινήσεις ἀπὸ τῶν ἄρθρων· αἱ δ᾽ ἐκ
the chest the motions from the joints the and from
τοῦ θώρακος ὀσμαὶ ποιοῦσιν αἴσθησιν διὰ τῆς ἀναπνοῆς.
the chest smells make perception through the breathing

VIII · THE STERILITY OF MULES

Democritus blames damaged uterine ducts and Empedocles two soft seeds that harden like copper and tin, but neither explains why other hybrids breed. A general argument from unlike species is empty. The cause lies in horse and ass, each near sterility: each bears one, the mare scantily menstruous, the ass cold, with cold semen, so their young are sterile. A she-mule may conceive but cannot bear, for her menses go to growth. The ginnus, a maimed mule, and pygmies are like runts.

Ἐν μὲν οὖν τοῖς ἀνθρώποις καὶ τοῖς ἄλλοις γένεσιν,
In indeed then the men and the other kinds
ὥσπερ εἴρηται πρότερον, κατὰ μέρος ἡ τοιαύτη συμβαίνει
just-as has-been-said before by part the such happens
πήρωσις, τὸ δὲ τῶν ἡμιόνων γένος ὅλον ἄγονόν ἐστιν. Περὶ
maiming the but of-the mules kind whole infertile is About
δὲ τῆς αἰτίας, ὡς μὲν λέγουσιν Ἐμπεδοκλῆς καὶ Δημόκριτος,
and the cause as indeed say Empedocles and Democritus
λέγων ὁ μὲν οὐ σαφῶς, Δημόκριτος δὲ γνωρίμως
speaking the-one indeed not clearly Democritus and intelligibly
μᾶλλον, οὐ καλῶς εἰρήκασιν. Λέγουσι γὰρ ἐπὶ
more not well they-have-spoken They-speak for in-the-case-of
πάντων ὁμοίως τὴν ἀπόδειξιν τῶν παρὰ τὴν συγγένειαν
all likewise the demonstration of-the contrary-to the kinship
συνδυαζομένων. Δημόκριτος μὲν γάρ φησι διεφθάρθαι
coupling Democritus indeed for says to-have-been-destroyed
τοὺς πόρους τῶν ἡμιόνων ἐν ταῖς ὑστέραις διὰ τὸ μὴ
the ducts of-the mules in the uteri because-of the not
ἐκ συγγενῶν γίνεσθαι τὴν ἀρχὴν τῶν ζῴων. Συμβαίνει δ'
from akin to-come-to-be the beginning of-the animals It-happens but
ἐφ' ἑτέρων ζῴων τοῦτο μὲν ὑπάρχειν, γεννᾶν δὲ μηδὲν
in-the-case-of other animals this indeed to-belong to-generate but nothing
ἧττον· καίτοι χρῆν, εἴπερ αἴτιον τοῦτ' ἦν, ἄγονα καὶ
less and-yet it-would-be-needful if-indeed cause this were infertile also

τἆλλ᾽ εἶναι τὰ μιγνύμενα τὸν τρόπον τοῦτον. Ἐμπεδοκλῆς
the-others to-be the mixing the way this Empedocles
δ᾽ αἰτιᾶται τὸ μῖγμα τὸ τῶν σπερμάτων γίνεσθαι πυκνὸν ἐκ
but blames the mixture the of-the seeds to-become dense from
μαλακῆς τῆς γονῆς οὔσης ἑκατέρας· συναρμόττειν γὰρ τὰ
soft the semen being each to-fit-together for the
κοῖλα τοῖς πυκνοῖς ἀλλήλων, ἐκ δὲ τῶν τοιούτων γίνεσθαι
hollows to-the dense-parts of-one-another from but the such to-come-to-be
ἐκ μαλακῶν σκληρόν, ὥσπερ τῷ καττιτέρῳ μιχθέντα τὸν
from soft hard just-as with-the tin mixed the
χαλκόν, λέγων οὔτ᾽ ἐπὶ τοῦ χαλκοῦ καὶ τοῦ καττιτέρου
copper saying neither in-the-case-of the copper and the tin
τὴν αἰτίαν ὀρθῶς (εἴρηται δ᾽ ἐν τοῖς προβλήμασι περὶ
the cause correctly it-has-been-said and in the problems about
αὐτῶν) οὔθ᾽ ὅλως ἐκ γνωρίμων ποιούμενος τὰς ἀρχάς.
them nor at-all from intelligible-things making the principles
Τὰ γὰρ κοῖλα καὶ τὰ στερεὰ ἁρμόττοντα ἀλλήλοις πῶς
The for hollows and the solids fitting with-one-another how
ποιεῖ τὴν μίξιν, οἷον οἴνου καὶ ὕδατος; Τοῦτο γὰρ
do-they-make the mixing such-as of-wine and water This for
ὑπὲρ ἡμᾶς ἐστὶ τὸ λεγόμενον· πῶς γὰρ δεῖ λαβεῖν
beyond us is the said how for one-must to-take
τὰ κοῖλα τοῦ οἴνου καὶ τοῦ ὕδατος, λίαν ἐστὶ παρὰ
the hollows of-the wine and of-the water very is beyond
τὴν αἴσθησιν. Ἔτι δ᾽ ἐπειδὴ συμβαίνει καὶ ἐξ ἵππων
the perception Further and since it-happens both from horses
γίνεσθαι ἵππον καὶ ἐξ ὄνων ὄνον καὶ ἐξ ἵππου καὶ
to-come-to-be horse and from asses ass and from horse and
ὄνου ἡμίονον, ἀμφοτέρως ἄρρενος καὶ θήλεος ὁποτερουοῦν
ass mule in-both-ways male and female whichever
ὄντος, διὰ τί ἐκ μὲν τούτων γίνεται πυκνὸν οὕτως
being because-of what from indeed these comes-to-be dense so

ὥστ᾽ ἄγονον εἶναι τὸ γενόμενον, ἐκ δ᾽ ἵππου θήλεος καὶ
so-that infertile to-be the having-come-to-be from but horse female and
ἄρρενος ἢ ὄνου θήλεος καὶ ἄρρενος οὐ γίνεται ἄγονον;
male or ass female and male not comes-to-be infertile
καίτοι μαλακὸν καὶ τὸ τοῦ ἄρρενος ἵππου ἐστὶ καὶ τὸ
and-yet soft also the of-the male horse is and the
τοῦ θήλεος. Μίγνυται δὲ καὶ ὁ θῆλυς ἵππος καὶ ὁ ἄρρην
of-the female Mixes and both the female horse and the male
τῷ ὄνῳ, καὶ τῷ ἄρρενι καὶ τῷ θήλει. Καὶ διὰ
with-the ass both with-the male and with-the female And because-of
τοῦτο γίνονται ἄγονα ἐξ ἀμφοτέρων, ὡς φησίν, ὅτι ἐξ
this become infertile from both as he-says because from
ἀμφοῖν ἕν τι γίνεται, μαλακῶν ὄντων τῶν σπερμάτων.
both one something comes-to-be soft being the seeds
Ἔδει οὖν καὶ τὸ ἐξ ἵππου ἄρρενος καὶ θήλεος γινόμενον.
It-should then also the from horse male and female coming-to-be
Εἰ μὲν γὰρ θάτερον ἐμίγνυτο μόνον, ἐνῆν ἂν λέγειν
If indeed for one-of-the-two were-mixed only it-would-be-possible — to-say
ὅτι θάτερον αἴτιον τοῦ μὴ γεννᾶν ὅμοιον τῇ τοῦ ὄνου
that one-of-the-two cause of-the not to-generate like to-the of-the ass
γονῇ· νῦν δ᾽ οἵαπερ οὖσῃ ἐκείνῃ μίγνυται, τοιαύτῃ καὶ τῇ
semen now but such-as being that it-is-mixed with-such also with-the
τοῦ συγγενοῦς. Ἔτι δ᾽ ἡ μὲν ἀπόδειξις κατ᾽ ἀμφοτέρων
of-the akin Further and the indeed demonstration against both
εἴρηται ὁμοίως καὶ τοῦ θήλεος καὶ τοῦ ἄρρενος, γεννᾷ δ᾽ ὁ
has-been-said likewise both of-the female and of-the male generates but the
ἄρρην ἑπταέτης ὢν μόνος, ὡς φασίν· ἀλλ᾽ ἡ θήλεια ἄγονος
male seven-years-old being alone as they-say but the female infertile
ὅλως, καὶ αὕτη τῷ μὴ ἐκτρέφειν εἰς τέλος, ἐπεὶ ἤδη
altogether and this by-the not to-rear to end since already
κύημα ἔσχεν ἡμίονος. Ἴσως δὲ μᾶλλον ἂν δόξειεν ἀπόδειξις
fetus had she-mule Perhaps and rather — would-seem demonstration

εἶναι πιθανὴ τῶν εἰρημένων λογική. Λέγω δὲ λογικὴν
to-be persuasive of-the said logical I-call and logical
διὰ τοῦτο, ὅτι ὅσῳ καθόλου μᾶλλον, πορρωτέρω
because-of this that by-as-much-as general more farther
τῶν οἰκείων ἐστὶν ἀρχῶν. Ἔστι δὲ τοιαύτη τις. Εἰ γὰρ
from-the proper it-is principles Is and such something If for
ἐξ ὁμοειδῶν ἄρρενος καὶ θήλεος ὁμοειδὲς γίνεσθαι πέφυκε
from same-species male and female same-species to-come-to-be is-natural
τοῖς γεννήσασιν ἄρρεν ἢ θῆλυ, οἷον ἐκ κυνὸς ἄρρενος καὶ
to-the generators male or female such-as from dog male and
θήλεος κύων ἄρρην ἢ θήλεια, καὶ ἐξ ἑτέρων εἴδει ἕτερον
female dog male or female and from different in-species different
τῷ εἴδει, οἷον εἰ κύων ἕτερον λέοντος, καὶ ἐκ κυνὸς
in-the species such-as if dog different from-lion also from dog
ἄρρενος καὶ λέοντος θήλεος ἕτερον καὶ ἐκ λέοντος ἄρρενος
male and lion female different and from lion male
καὶ κυνὸς θήλεος ἕτερον· ὥστ' ἐπειδὴ γίνεται ἡμίονος
and dog female different so-that since comes-to-be mule
ἄρρην καὶ θῆλυς ἀδιαφόρων ὄντων τῷ εἴδει ἀλλήλοις,
male and female not-different being in-the species from-one-another
γίνεται δ' ἐξ ἵππου καὶ ὄνου ἡμίονος, ἕτερα δ' ἐστὶ τῷ
comes-to-be and from horse and ass mule different and are in-the
εἴδει ταῦτα καὶ οἱ ἡμίονοι, ἀδύνατον γενέσθαι ἐξ ἡμιόνων.
species these and the mules impossible to-come-to-be from mules
Ἕτερον γὰρ γένος οὐχ οἷόν τε διὰ τὸ ἐξ ἄρρενος καὶ
Other for kind not possible — because-of the from male and
θήλεος τῶν ὁμοειδῶν ταὐτὸ γίνεσθαι τῷ εἴδει· ἡμίονος δ'
female of-the same-species the-same to-come-to-be in-the species mule and
ὅτι ἐξ ἵππου καὶ ὄνου γίνεται ἑτέρων ὄντων τῷ εἴδει,
because from horse and ass comes-to-be different being in-the species
ἐκ δὲ τῶν ἑτέρων τῷ εἴδει ἕτερον ἐτέθη γίνεσθαι ζῷον.
from and the different in-the species different was-posited to-come-to-be animal

Οὗτος μὲν οὖν ὁ λόγος καθόλου λίαν καὶ κενός. Οἱ γὰρ
This indeed then the account general very and empty The for
μὴ ἐκ τῶν οἰκείων ἀρχῶν λόγοι κενοί, ἀλλὰ δοκοῦσιν
not from the proper principles accounts empty but seem
εἶναι τῶν πραγμάτων οὐκ ὄντες. Οἱ γὰρ ἐκ τῶν ἀρχῶν
to-be of-the matters not being The for from the principles
τῶν γεωμετρικῶν γεωμετρικοί, ὁμοίως δὲ καὶ ἐπὶ τῶν
the geometrical geometrical likewise and also in-the-case-of the
ἄλλων· τὸ δὲ κενὸν δοκεῖ μὲν εἶναί τι, ἔστι δ' οὐθέν.
others the and empty seems indeed to-be something is but nothing
Οὐκ ἀληθὲς δέ, ὅτι πολλὰ τῶν μὴ ὁμοειδῶν γενομένων
Not true and because many of-the not same-species coming-to-be
γίνεται γόνιμα, καθάπερ ἐλέχθη πρότερον. Τοῦτον μὲν οὖν
become fertile just-as was-said before This indeed then
τὸν τρόπον οὔτε περὶ τῶν ἄλλων δεῖ ζητεῖν οὔτε περὶ
the way neither about the others one-must to-seek nor about
τῶν φυσικῶν· ἐκ δὲ τῶν ὑπαρχόντων τῷ γένει τῷ τῶν
the natural from but the belonging to-the kind the of-the
ἵππων καὶ τῷ τῶν ὄνων θεωρῶν ἄν τις μᾶλλον λάβοι
horses and to-the of-the asses studying — someone rather would-take
τὴν αἰτίαν, ὅτι πρῶτον μὲν ἑκάτερον αὐτῶν ἐστὶ μονοτόκον
the cause that first indeed each of-them is single-bearing
ἐκ τῶν συγγενῶν ζῴων, ἔπειτ' οὐ συλληπτικὰ τὰ θήλεα
from the akin animals then not apt-to-conceive the females
ἐκ τῶν ἀρρένων ἀεί, διόπερ τοὺς ἵππους διαλείποντες
from the males always wherefore the horses leaving-intervals
ὀχεύουσι διὰ τὸ μὴ δύνασθαι συνεχῶς φέρειν.
they-mount because-of the not to-be-able continuously to-bear
Ἀλλ' ἡ μὲν ἵππος οὐ καταμηνιώδης, ἀλλ' ἐλάχιστον
But the indeed mare not menstruous but least
προΐεται τῶν τετραπόδων· ἡ δ' ὄνος οὐ δέχεται τὴν ὀχείαν,
emits of-the quadrupeds the but she-ass not receives the copulation

ἀλλ᾽ ἐξουρεῖ τὸν γόνον, διὸ μαστιγοῦσιν ἀκολουθοῦντες.
but urinates-out the semen wherefore they-whip following
Ἔτι δὲ ψυχρὸν τὸ ζῷον ὁ ὄνος ἐστί, διόπερ ἐν τοῖς
Further and cold the animal the ass is wherefore in the
χειμερινοῖς οὐ θέλει γίνεσθαι τόποις διὰ τὸ δύσριγον
wintry not is-willing to-come-to-be places because-of the shivery
εἶναι τὴν φύσιν, οἷον περὶ Σκύθας καὶ τὴν ὅμορον χώραν,
to-be the nature such-as about Scythians and the bordering land
οὐδὲ περὶ Κελτοὺς τοὺς ὑπὲρ τῆς Ἰβηρίας· ψυχρὰ γὰρ καὶ
nor about Celts the beyond the Iberia cold for also
αὕτη ἡ χώρα. Διὰ ταύτην δὲ τὴν αἰτίαν καὶ τὰ ὀχεῖα
this the land Because-of this and the cause also the stallions
ἐπιβάλλουσι τοῖς ὄνοις οὐχ ὥσπερ τοῖς ἵπποις κατ᾽ ἰσημερίαν,
they-put-to the asses not just-as to-the horses at equinox
ἀλλὰ περὶ τροπὰς θερινάς, ὅπως ἐν ἀλεεινῇ γίνηται ὥρᾳ
but about solstice summer so-that in warm come-to-be season
τὰ πωλία· ἐν τῇ αὐτῇ γὰρ γίνεται ἐν ᾗ ἂν ὀχευθῇ·
the foals in the same for they-come-to-be in which — it-be-mounted
ἐνιαυτὸν γὰρ κύει καὶ ἵππος καὶ ὄνος. Ὄντος δ᾽ ὥσπερ
a-year for is-pregnant both horse and ass Being and just-as
εἴρηται ψυχροῦ τὴν φύσιν, καὶ τὴν γονὴν ἀναγκαῖον εἶναι
has-been-said cold in-the nature also the semen necessary to-be
τοῦ τοιούτου ψυχράν. Σημεῖον δὲ τούτου· διὰ τοῦτο γάρ,
of-the such cold Sign and of-this because-of this for
ἐὰν μὲν ἵππος ἀναβῇ ἐπὶ ὠχευμένην ὑπὸ ὄνου, οὐ διαφθείρει
if indeed horse mount on mounted by ass not destroys
τὴν τοῦ ὄνου ὀχείαν, ὁ δ᾽ ὄνος ἐὰν ἐπαναβῇ, διαφθείρει
the of-the ass copulation the but ass if mount-after destroys
τὴν τοῦ ἵππου διὰ ψυχρότητα τὴν τοῦ σπέρματος.
the of-the horse because-of coldness the of-the seed

Ὅταν μὲν οὖν ἀλλήλοις μιχθῶσι, σώζεται διὰ τὴν
When indeed then with-one-another they-be-mixed it-is-preserved because-of the
θατέρου θερμότητα. Θερμότερον γὰρ τὸ ἀπὸ τοῦ ἵππου
of-the-other heat Hotter for the from the horse
ἀποκρινόμενον· ἡ μὲν γὰρ τοῦ ὄνου ψυχρὰ καὶ ἡ ὕλη καὶ
secreted the indeed for of-the ass cold both the matter and
ἡ γονή, ἡ δὲ τοῦ ἵππου θερμοτέρα. Ὅταν δὲ μιχθῇ ἢ
the semen the but of-the horse hotter When and be-mixed either
θερμὸν ἐπὶ ψυχρὸν ἢ ψυχρὸν ἐπὶ θερμόν, συμβαίνει αὐτὸ
hot onto cold or cold onto hot it-happens itself
μὲν τὸ ἐκ τούτων κύημα γινόμενον σώζεσθαι καὶ ταῦτ' ἐξ
indeed the from these fetus coming-to-be to-be-preserved and these from
ἀλλήλων εἶναι γόνιμα, τὸ δ' ἐκ τούτων μηκέτι γόνιμον ἀλλ'
one-another to-be fertile the but from these no-longer fertile but
ἄγονον εἰς τελειογονίαν. Ὅλως δ' ὑπάρχοντος ἑκατέρου
infertile for perfect-generation Generally and belonging each
εὐφυοῦς πρὸς ἀγονίαν, τῷ τε γὰρ ὄνῳ ὑπάρχει τὰ ἄλλα τὰ
naturally-apt for infertility to-the both for ass belong the others the
εἰρημένα, καὶ ἐὰν μὴ μετὰ τὸν βόλον τὸν πρῶτον ἄρξηται
said and if not after the shedding the first it-begin
γεννᾶν, οὐκέτι γεννᾷ τὸ παράπαν· οὕτως ἐπὶ μικροῦ ἔχεται
to-generate no-longer it-generates the at-all so by little is-held
τὸ ἄγονον εἶναι τὸ σῶμα τῶν ὄνων. Ὁμοίως δὲ καὶ ὁ ἵππος·
the infertile to-be the body of-the asses Likewise and also the horse
εὐφυὴς γὰρ πρὸς τὴν ἀγονίαν, καὶ τοσοῦτον λείπει τοῦ
naturally-apt for for the infertility and so-much lacks of-the
ἄγονος εἶναι ὅσον τὸ γενέσθαι τὸ ἐκ τούτου ψυχρότερον·
infertile to-be as-much-as the to-become the from this colder
τοῦτο δὲ γίνεται, ὅταν μιχθῇ τῇ τοῦ ὄνου ἀποκρίσει.
this and comes-about when it-be-mixed with-the of-the ass secretion

Καὶ ὁ ὄνος δὲ ὡσαύτως μικροῦ δεῖν κατὰ τὸν οἰκεῖον
Also the ass and likewise by-little lacking by the own
συνδυασμὸν ἄγονον γεννᾷ ὥστε ὅταν προσγένηται τὸ παρὰ
coupling infertile generates so-that when be-added the contrary-to
φύσιν, εἰ τότε ἑνὸς μόλις γεννητικὸν ἐξ ἀλλήλων ἦν, τὸ ἐκ
nature if then of-one barely generative from one-another it-was the from
τούτων ἔτι μᾶλλον ἄγονον καὶ παρὰ φύσιν οὐθενὸς δεήσει
these still more infertile and contrary-to nature of-nothing it-will-need
τοῦ ἄγονον εἶναι, ἀλλ' ἐξ ἀνάγκης ἔσται ἄγονον. Συμβαίνει
of-the infertile to-be but from necessity it-will-be infertile It-happens
δὲ καὶ τὰ σώματα τὰ τῶν ἡμιόνων μεγάλα γίνεσθαι διὰ
and also the bodies the of-the mules large to-become because-of
τὸ τὴν ἀπόκρισιν τὴν εἰς τὰ καταμήνια τρέπεσθαι εἰς τὴν
the the secretion the into the menses to-be-turned into the
αὔξησιν. Ἐπεὶ δ' ἐνιαύσιος ὁ τοκετὸς τῶν τοιούτων, οὐ
growth Since and yearly the birth of-the such not
μόνον συλλαβεῖν δεῖ τὴν ἡμίονον ἀλλὰ καὶ ἐκθρέψαι· τοῦτο
only to-conceive it-must the she-mule but also to-rear-to-term this
δ' ἀδύνατον μὴ γινομένων καταμηνίων. Ταῖς δ' ἡμιόνοις οὐ
and impossible not coming-about menses For-the and she-mules not
γίνεται ἀλλὰ τὸ μὲν ἄχρηστον μετὰ τοῦ περιττώματος
it-comes-about but the indeed useless with the residue
τοῦ ἐκ τῆς κύστεως ἐκκρίνεται (διόπερ οὐδὲ τῶν ἄρθρων
the from the bladder is-excreted wherefore not-even of-the genitals
οἱ ἡμίονοι οἱ ἄρρενες ὀσφραίνονται τῶν θηλειῶν, ὥσπερ
the mules the males smell the females just-as
τἆλλα τὰ μώνυχα, ἀλλ' αὐτοῦ τοῦ περιττώματος), τὰ
the-others the solid-hoofed but itself the residue the
δ' ἄλλα τρέπεται εἰς τὴν αὔξησιν καὶ τὸ μέγεθος.
but others is-turned into the growth and the size

Ὥστε συλλαβεῖν μὲν ἐνδέχεταί ποτε τὴν θήλειαν, ὅπερ
So-that to-conceive indeed it-is-possible sometimes the female which-very
ἤδη φαίνεται γεγονός, ἐκθρέψαι δὲ καὶ ἐξενεγκεῖν εἰς
already appears having-happened to-rear-to-term but and to-bring-forth to
τέλος ἀδύνατον. Ὁ δ' ἄρρην ποτὲ γεννήσειεν ἂν διά
end impossible The but male sometimes would-generate — because-of
τε τὸ θερμότερον εἶναι τοῦ θήλεος φύσει τὸ ἄρρεν, καὶ
both the hotter to-be than-the female by-nature the male and
διὰ τὸ μὴ συμβάλλεσθαι πρὸς τὴν μίξιν σῶμα μηδὲν τὸ
because-of the not to-contribute to the mixing body any the
ἄρρεν. Τὸ δ' ἀποτελεσθὲν γίνεται γίννος. Τοῦτο δ' ἐστὶν
male The and completed becomes ginnus This and is
ἡμίονος ἀνάπηρος· καὶ γὰρ ἐκ τοῦ ἵππου καὶ τοῦ ὄνου
mule maimed and for from the horse and the ass
γίνονται γίννοι, ὅταν νοσήσῃ τὸ κύημα ἐν τῇ ὑστέρᾳ. Ἔστι
come-to-be ginni when be-diseased the fetus in the uterus Is
γὰρ ὁ γίννος ὥσπερ τὰ μετάχοιρα ἐν τοῖς χοίροις· καὶ γὰρ
for the ginnus just-as the runts in the pigs and for
ἐκεῖ τὸ πηρωθὲν ἐν τῇ ὑστέρᾳ καλεῖται μετάχοιρον. Γίνεται
there the maimed in the uterus is-called runt Becomes
δὲ τοιοῦτος ὃς ἂν τύχῃ τῶν χοίρων. Ὁμοίως δὲ γίνονται
and such whichever — happen of-the pigs Likewise and come-to-be
καὶ οἱ πυγμαῖοι· καὶ γὰρ οὗτοι πηροῦνται τὰ μέρη καὶ τὸ
also the pygmies and for these are-maimed the parts and the
μέγεθος ἐν τῇ κυήσει, καὶ εἰσὶν ὥσπερ μετάχοιρα καὶ γίννοι.
size in the gestation and they-are like runts and ginni

BOOK III

I · BIRDS AND THEIR EGGS

Birds lay a complete, two-colored egg; most fish an incomplete, one-colored one grown outside. Heavy and small birds lay many, pigeons few but often, the hook-taloned few, their residue going to wings; spending it on seed exhausts trees, hens, and the old lion. Wind-eggs form from the female's seminal residue without copulation, not as remnants of an earlier one, and become fertile if she is mounted in time. Both come from the female: the hotter white holds the principle, the earthier yolk the food.

Περὶ μὲν οὖν τῆς τῶν ἡμιόνων ἀτεκνίας εἴρηται, καὶ
About indeed then the of-the mules childlessness it-has-been-said and
περὶ τῶν ζῳοτοκούντων καὶ θύραζε καὶ ἐν αὑτοῖς· ἐν δὲ τοῖς
about the live-bearing both outside and in themselves in but the
ᾠοτοκοῦσι τῶν ἐναίμων τῇ μὲν παραπλησίως ἔχει τὰ
egg-laying of-the blooded in-one-way indeed similarly have the
περὶ τὰς γενέσεις αὐτοῖς τε καὶ τοῖς πεζοῖς καὶ ταὐτόν
about the generations to-them both and to-the land-animals and the-same
τι λαβεῖν ἔστι περὶ πάντων, τῇ δ' ἔχει διαφορὰς
something to-grasp is-possible about all in-another and they-have differences
καὶ πρὸς ἄλληλα καὶ πρὸς τὰ πεζὰ τῶν ζῴων. Γίνεται
both toward one-another and toward the land of-the animals Come-to-be
μὲν οὖν ἀπὸ συνδυασμοῦ πάντα ὅλως, καὶ προϊεμένου
indeed then from coupling all generally and emitting
γονὴν εἰς τὸ θῆλυ τοῦ ἄρρενος· τῶν δ' ᾠοτοκούντων αἱ
semen into the female the male of-the and egg-laying the
μὲν ὄρνιθες προΐενται τέλειον ᾠὸν καὶ σκληρόδερμον, ἐὰν
indeed birds emit complete egg and hard-shelled if
μή τι πηρωθῇ διὰ νόσον, καὶ πάντα δίχροα τὰ τῶν
not something be-maimed because-of disease and all two-colored the of-the

ὀρνίθων ἐστίν, τῶν δ' ἰχθύων οἱ μὲν σελαχώδεις, ὥσπερ
birds are of-the and fish the indeed selachians just-as
εἴρηται πολλάκις, ἐν αὑτοῖς ᾠοτοκήσαντες ζῳοτοκοῦσι,
has-been-said often in themselves having-laid-eggs bear-live
μεταστάντος τοῦ ᾠοῦ ἐξ ἄλλου τόπου τῆς ὑστέρας εἰς
having-changed-place the egg from one place of-the uterus to
ἄλλον, μαλακόδερμον δὲ τὸ ᾠὸν καὶ ὁμόχρων ἐστὶν αὐτῶν.
another soft-shelled and the egg and one-colored is of-them
Εἷς δὲ μόνος οὐ ζῳοτοκεῖ τῶν τοιούτων ἐν αὑτῷ, ὁ
One and alone not bears-live of-the such in itself the
καλούμενος βάτραχος· περὶ οὗ τὴν αἰτίαν ὕστερον λεκτέον.
so-called fishing-frog about which the cause later must-be-said
Οἱ δὲ ἄλλοι ὅσοιπερ ᾠοτοκοῦσι τῶν ἰχθύων, μονόχρων
The and others as-many-as lay-eggs of-the fish one-colored
μὲν προΐενται τὸ ᾠόν, ἀτελὲς δὲ τοῦτο· λαμβάνει γὰρ
indeed emit the egg incomplete but this takes for
ἔξω τὴν αὔξησιν, διὰ τὴν αὐτὴν αἰτίαν δι' ἥνπερ
outside the growth because-of the same cause through which-very
καὶ τὰ ἔσω τελειούμενα τῶν ᾠῶν. Περὶ μὲν οὖν τῶν
also the inside completed of-the eggs About indeed then the
ὑστερῶν, τίνας ἔχουσι διαφορὰς καὶ διὰ τίνας αἰτίας,
uteri what they-have differences and because-of what causes
εἴρηται πρότερον. Καὶ γὰρ τῶν ζῳοτοκούντων τὰ
it-has-been-said before And for of-the live-bearing the-ones
μὲν ἄνω πρὸς τῷ ὑποζώματι ἔχει τὰς ὑστέρας, τὰ δὲ
indeed above at the diaphragm have the uteri the-others and
κάτω πρὸς τοῖς ἄρθροις, ἄνω μὲν τὰ σελαχώδη, κάτω δὲ
below at the joints above indeed the selachians below and
τὰ καὶ ἐν αὐτοῖς ζῳοτοκοῦντα καὶ θύραζε, οἷον ἄνθρωπος
the both in themselves bearing-live and outside such-as man
καὶ ἵππος καὶ τῶν ἄλλων ἕκαστον τῶν τοιούτων· καὶ
and horse and of-the others each of-the such and

τῶν ᾠοτοκούντων τὰ μὲν κάτω, καθάπερ τῶν ἰχθύων
of-the egg-laying the-ones indeed below just-as of-the fish
οἱ ᾠοτοκοῦντες, τὰ δ' ἄνω, καθάπερ οἱ ὄρνιθες.
the egg-laying the-others and above just-as the birds
Συνίσταται μὲν οὖν κυήματα τοῖς ὄρνισι καὶ αὐτόματα,
Are-constituted indeed then fetuses in-the birds also spontaneous
ἃ καλοῦσιν ὑπηνέμια καὶ ζεφύριά τινες, γίνεται δὲ
which they-call wind-eggs and zephyr-eggs some come-about and
ταῦτα τοῖς μὴ πτητικοῖς μηδὲ γαμψώνυξι τῶν ὀρνίθων,
these in-the not flying nor crook-taloned of-the birds
ἀλλὰ τοῖς πολυγόνοις, διὰ τὸ πολὺ περίττωμα ταῦτ'
but in-the prolific because-of the much residue these
ἔχειν, τοῖς δὲ γαμψώνυξιν εἰς τὰς πτέρυγας καὶ τὰ πτερὰ
to-have for-the and crook-taloned into the wings and the feathers
τρέπεσθαι τὴν τοιαύτην ἀπόκρισιν, τὸ δὲ σῶμα μικρὸν
to-be-turned the such secretion the and body small
ἔχειν καὶ ξηρόν τε καὶ θερμόν, τὴν δ' ἀπόκρισιν τὴν
to-have and dry both and hot the and secretion the
καταμηνιώδη καὶ τὴν γονὴν περίττωμα εἶναι· ἐπεὶ οὖν καὶ
menstrual and the semen residue to-be since then also
ἡ τῶν πτερῶν φύσις καὶ ἡ τοῦ σπέρματος γίνεται ἐκ
the of-the feathers nature and the of-the seed comes-to-be from
περιττώσεως, οὐ δύναται ἡ φύσις ἐπ' ἀμφότερα πολυχοεῖν.
residue not can the nature on both to-abound
Διὰ τὴν αὐτὴν δὲ ταύτην αἰτίαν καὶ τὰ μὲν γαμψώνυχα
Because-of the same and this cause also the indeed crook-taloned
οὔτ' ὀχευτικά ἐστιν οὔτε πολύγονα, τὰ δὲ βαρέα καὶ τῶν
neither salacious are nor prolific the but heavy and of-the
πτητικῶν ὅσων τὰ σώματα ὀγκώδη, καθάπερ περιστερᾶς
flying as-many-as the bodies bulky just-as of-pigeon
καὶ τῶν τοιούτων. Τοῖς μὲν γὰρ βαρέσι καὶ μὴ πτητικοῖς,
and of-the such In-the indeed for heavy and not flying

οἷον ἀλεκτορίσι καὶ πέρδιξι καὶ τοῖς ἄλλοις τοῖς τοιούτοις,
such-as hens and partridges and the other the such
πολὺ γίνεται περίττωμα τοιοῦτον· διὸ τά τε ἄρρενα
much comes-about residue such wherefore the both males
αὐτῶν ὀχευτικὰ καὶ τὰ θήλεα προΐεται πολλὴν ὕλην, καὶ
of-them salacious and the females emit much matter and
τίκτει τῶν τοιούτων τὰ μὲν πολλὰ τὰ δὲ πολλάκις,
bear of-the such the-ones indeed many the-others and often
πολλὰ μὲν οἷον ἀλεκτορὶς καὶ πέρδιξ καὶ στρουθὸς ὁ
many indeed such-as hen and partridge and ostrich the
Λιβυκός, τὰ δὲ περιστερώδη πολλὰ μὲν οὔ, πολλάκις δέ.
Libyan the and pigeon-like many indeed not often but
μεταξὺ γάρ ἐστι ταῦτα τῶν γαμψωνύχων καὶ τῶν βαρέων·
between for are these the crook-taloned and the heavy
πτητικὰ μὲν γάρ ἐστιν ὥσπερ τὰ γαμψώνυχα, πλήθη δ'
flying indeed for they-are just-as the crook-taloned bulk but
ἔχει τοῦ σώματος ὥσπερ τὰ βαρέα, ὥστε διὰ μὲν
they-have of-the body just-as the heavy so-that because-of indeed
τὸ πτητικὰ εἶναι καὶ ἐνταῦθα τρέπεσθαι τὸ περίττωμα
the flying to-be and there to-be-turned the residue
ὀλίγα τίκτουσι, διὰ δὲ τὸ πλῆθος τοῦ σώματος καὶ
few they-bear because-of but the bulk of-the body and
διὰ τὸ θερμὴν ἔχειν τὴν κοιλίαν καὶ πεπτικωτάτην,
because-of the hot to-have the belly and most-concoctive
πρὸς δὲ τούτοις καὶ διὰ τὸ ῥᾳδίως πορίζεσθαι τὴν
besides and these and because-of the easily to-procure the
τροφήν, τὰ δὲ γαμψώνυχα χαλεπῶς, πολλάκις.
nourishment the but crook-taloned with-difficulty often
Ὀχευτικὰ δὲ καὶ πολύγονα καὶ τὰ μικρὰ τῶν ὀρνέων
Salacious and and prolific also the small of-the birds
ἐστί, καθάπερ ἐνίοτε καὶ τῶν φυτῶν· ἡ γὰρ εἰς τὸ σῶμα
are just-as sometimes also of-the plants the for into the body

αὔξησις γίνεται περίττωμα σπερματικόν. Διὸ καὶ τῶν
growth becomes residue seminal Wherefore also of-the
ἀλεκτορίδων αἱ Ἀδριανικαὶ πολυτοκώταταί εἰσιν· διὰ γὰρ
hens the Adriatic most-prolific are because-of for
μικρότητα τοῦ σώματος εἰς τὴν τέκνωσιν καταναλίσκεται
smallness of-the body into the child-bearing is-used-up
ἡ τροφή. Καὶ αἱ ἀγεννεῖς τῶν γενναίων πολυτοκώτεραι·
the nourishment And the ignoble than-the noble more-prolific
ὑγρότερα γὰρ τὰ σώματα τῶνδε καὶ ὀγκωδέστερα, τῶν
moister for the bodies of-these and bulkier of-those
δὲ ἰσχνότερα καὶ ξηρότερα· ὁ γὰρ θυμὸς ὁ γενναῖος ἐν
but leaner and drier the for spirit the noble in
τοῖς τοιούτοις γίνεται σώμασι μᾶλλον. Ἔτι δὲ καὶ ἡ
the such comes-about bodies more Further and also the
τῶν σκελῶν λεπτότης καὶ ἀσθένεια συμβάλλεται πρὸς τὸ
of-the legs thinness and weakness contributes to the
τὴν φύσιν τῶν τοιούτων ὀχευτικὴν εἶναι καὶ πολύγονον,
the nature of-the such salacious to-be and prolific
καθάπερ καὶ ἐπὶ τῶν ἀνθρώπων· ἡ γὰρ εἰς τὰ
just-as also in-the-case-of the men the for into the
κῶλα τροφὴ τρέπεται τοῖς τοιούτοις εἰς περίττωμα
limbs nourishment is-turned for-the such into residue
σπερματικόν· ὃ γὰρ ἐκεῖθεν ἀφαιρεῖ ἡ φύσις, προστίθησιν
seminal what for from-there takes-away the nature it-adds
ἐνταῦθα. Τὰ δὲ γαμψώνυχα τὴν βάσιν ἰσχυρὰν ἔχει καὶ τὰ
here The but crook-taloned the base strong have and the
σκέλη πάχος ἔχοντα διὰ τὸν βίον, ὥστε διὰ πάσας
legs thickness having because-of the life so-that because-of all
ταύτας τὰς αἰτίας οὔτ᾽ ὀχευτικά ἐστιν οὔτε πολύγονα.
these the causes neither salacious are nor prolific

Μάλιστα δὲ ἡ κεγχρὶς πολύγονον· μόνον γὰρ σχεδὸν τοῦτο
Most and the kestrel prolific alone for nearly this
καὶ πίνει τῶν γαμψωνύχων, ἡ δ' ὑγρότης καὶ ἡ σύμφυτος
also drinks of-the crook-taloned the and moisture both the connate
καὶ ἡ ἐπακτὸς σπερματικὸν μετὰ τῆς ὑπαρχούσης αὐτῇ
and the acquired seminal with the belonging to-it
θερμότητος. Τίκτει δ' οὐδ' αὐτὴ πολλὰ λίαν, ἀλλὰ
heat It-bears but not-even it many very but
τέτταρα τὸ πλεῖστον. Ὁ δὲ κόκκυξ ὀλιγοτόκον ἐστὶν οὐκ
four at-the most The and cuckoo few-bearing is not
ὢν γαμψώνυχος ὅτι ψυχρὸς τὴν φύσιν ἐστίν (δηλοῖ δ'
being crook-taloned because cold in-the nature it-is shows and
ἡ δειλία τοῦ ὀρνέου), τὸ δὲ σπερματικὸν ζῷον δεῖ θερμὸν
the cowardice of-the bird the and seminal animal must hot
καὶ ὑγρὸν εἶναι. Ὅτι δὲ δειλόν, φανερόν· ὑπό τε γὰρ τῶν
and moist to-be That and cowardly evident by both for the
ὀρνέων διώκεται πάντων καὶ ἐν ἀλλοτρίαις τίκτει νεοττιαῖς.
birds it-is-chased all and in others' it-bears nests
Τὰ δὲ περιστερώδη δύο ὡς τὰ πολλὰ τίκτειν εἴωθεν· οὔτε
The and pigeon-like two as the most-part to-bear are-wont neither
γὰρ μονοτόκοι εἰσίν (οὐθεὶς γὰρ μονοτόκος ὄρνις πλὴν ὁ
for single-bearing they-are none for single-bearing bird except the
κόκκυξ, καὶ οὗτος ἐνίοτε διτοκεῖ) οὔτε πολλὰ τίκτουσιν,
cuckoo and this sometimes bears-two nor many they-bear
ἀλλὰ πολλάκις δύο ἢ τρία τὰ πλεῖστα γεννῶσι, τὰ δὲ πολλὰ
but often two or three the most they-generate the but most
δύο· οὗτοι γὰρ οἱ ἀριθμοὶ μεταξὺ τοῦ ἑνὸς καὶ πολλῶν.
two these for the numbers between the one and many
Ὅτι δὲ τοῖς πολυγόνοις τρέπεται εἰς τὸ σπέρμα ἡ τροφή,
That and in-the prolific is-turned into the seed the nourishment
φανερὸν ἐκ τῶν συμβαινόντων. Τῶν τε γὰρ δένδρων τὰ
evident from the happenings Of-the both for trees the

πολλὰ πολυκαρπήσαντα λίαν ἐξαναίνεται μετὰ τὴν φοράν,
many having-borne-much-fruit very wither after the crop
ὅταν μὴ ὑπολειφθῇ τῷ σώματι τροφή, καὶ τὰ ἐπέτεια
when not be-left for-the body nourishment and the annuals
ταὐτὸ πάσχειν ἔοικεν, οἷον τά τε χεδροπὰ καὶ ὁ σῖτος
the-same to-suffer seem such-as the both pulses and the grain
καὶ τἆλλα τὰ τοιαῦτα. Τὴν γὰρ τροφὴν ἀναλίσκουσιν εἰς
and the-other the such The for nourishment they-use-up into
τὸ σπέρμα πᾶσαν· ἔστι γὰρ πολύσπερμον τὸ γένος αὐτῶν.
the seed all is for many-seeded the kind of-them
Καὶ τῶν ἀλεκτορίδων ἔνιαι πολυτοκήσασαι λίαν οὕτως
And of-the hens some having-laid-many very so
ὥστε καὶ δύο τεκεῖν ἐν ἡμέρᾳ, μετὰ τὴν πολυτοκίαν
so-that even two to-lay in day after the laying-many
ἀπέθανον. Ὑπέρινοι γὰρ γίνονται καὶ οἱ ὄρνιθες καὶ τὰ
died Exhausted for become both the birds and the
φυτά· τοῦτο δ' ἐστὶ τὸ πάθος ὑπερβολὴ περιττώματος
plants this and is the affection excess of-residue
ἐκκρίσεως. Αἴτιον δὲ τὸ τοιοῦτον πάθος καὶ τῷ λέοντι
of-excretion Cause and the such affection also for-the lion
τῆς ἀγονίας τῆς ὕστερον· τὸ μὲν γὰρ πρότερον τίκτει
of-the infertility the later the indeed for first it-bears
πέντε ἢ ἕξ, εἶτα τῷ ὑστέρῳ ἔτει τέτταρας, πάλιν δὲ
five or six then in-the later year four again and
τρεῖς σκύμνους, εἶτα τὸν ἐχόμενον ἀριθμὸν ἕως ἑνός, εἶτ'
three cubs then the next number until one then
οὐθὲν ὡς ἐξαναλισκομένου τοῦ περιττώματος καὶ ἅμα
none as being-used-up the residue and at-once
τῆς ἡλικίας ληγούσης φθίνοντος τοῦ σπέρματος.
the age declining waning the seed

Τίσι μὲν οὖν γίνεται τὰ ὑπηνέμια τῶν ὀρνίθων, ἔτι
In-which indeed then come-about the wind-eggs of-the birds further
δὲ ποῖοι πολύγονοι καὶ ὀλιγόγονοι αὐτῶν, καὶ διὰ
and what-sort prolific and few-bearing of-them and because-of
τίνας αἰτίας, εἴρηται. Γίνεται δὲ τὰ ὑπηνέμια, καθάπερ
what causes it-has-been-said Come-about and the wind-eggs just-as
εἴρηται καὶ πρότερον, διὰ τὸ ὑπάρχειν ἐν τῷ θήλει
has-been-said also before because-of the to-belong in the female
τὴν ὕλην τὴν σπερματικήν, τοῖς δ' ὀρνέοις μὴ γίνεσθαι
the matter the seminal for-the but birds not to-come-about
τὴν τῶν καταμηνίων ἀπόκρισιν ὥσπερ τοῖς ζῳοτόκοις
the of-the menses secretion just-as for-the live-bearing
τοῖς ἐναίμοις· πᾶσι γὰρ τούτοις γίνεται, τοῖς μὲν
the blooded in-all for these it-comes-about in-the-ones indeed
πλείων, τοῖς δ' ἐλάττων, τοῖς δὲ τοσαύτη τὸ
more in-the-others and less in-the-others and so-much in-the
πλῆθος ὥστε ὅσον γε ἐπισημαίνειν. Ὁμοίως δ' οὐδὲ
quantity so-that as-much-as at-least to-show-signs Likewise but neither
τοῖς ἰχθύσι, καθάπερ τοῖς ὄρνισιν· διὸ καὶ τούτοις
in-the fish just-as in-the birds wherefore also in-these
γίνεται μὲν ἄνευ ὀχείας σύστασις κυημάτων, ὁμοίως καὶ
comes-about indeed without copulation constitution of-fetuses likewise also
τοῖς ὄρνισιν, ἧττον δ' ἐπιδήλως· ψυχροτέρα γὰρ ἡ φύσις
in-the birds less but evidently colder for the nature
αὐτῶν. Ἡ δὲ γινομένη τοῖς ζῳοτόκοις ἀπόκρισις τῶν
of-them The but arising in-the live-bearing secretion of-the
καταμηνίων συνίσταται τοῖς ὄρνισι κατὰ τοὺς ἱκνουμένους
menses is-constituted in-the birds at the fitting
χρόνους τοῦ περιττώματος, καὶ διὰ τὸ τὸν τόπον εἶναι
times of-the residue and because-of the the place to-be
θερμὸν τὸν πρὸς τῷ διαζώματι τελειοῦται τοῖς μεγέθεσιν.
hot the at the diaphragm it-is-completed in-the sizes

Πρὸς δὲ τὴν γένεσιν ἀτελῆ καὶ ταῦτα καὶ τὰ τῶν
For and the generation incomplete both these and the of-the
ἰχθύων ὁμοίως ἄνευ τῆς τοῦ ἄρρενος γονῆς· ἡ δ᾽ αἰτία
fish likewise without the of-the male semen the and cause
τούτων εἴρηται πρότερον. Οὐ γίνεται δὲ τὰ ὑπηνέμια
of-these has-been-said before Not come-about and the wind-eggs
τοῖς πτητικοῖς τῶν ὀρνίθων διὰ τὴν αὐτὴν αἰτίαν δι᾽
in-the flying of-the birds because-of the same cause through
ἥνπερ οὐδὲ πολυτοκεῖ τὰ τοιαῦτα· τοῖς γὰρ γαμψώνυξιν
which-very not-even are-prolific the such in-the for crook-taloned
ὀλίγον τὸ περίττωμα, καὶ προσδέονται τοῦ ἄρρενος πρὸς
little the residue and they-need-besides the male for
τὴν ὁρμὴν τῆς τοῦ σπέρματος ἐκκρίσεως. Πλείω δὲ τὰ
the impulse of-the of-the seed excretion More and the
ὑπηνέμια γίνεται τῶν γόνῳ γινομένων, ἐλάττω δὲ τὸ
wind-eggs come-about than-the by-semen coming-to-be smaller but the
μέγεθος διὰ μίαν αἰτίαν καὶ τὴν αὐτήν· διὰ μὲν
size because-of one cause and the same because-of indeed
γὰρ τὸ ἀτελῆ εἶναι ἐλάττω τὸ μέγεθος, διὰ δὲ τὸ τὸ
for the incomplete to-be smaller the size because-of and the the
μέγεθος ἔλαττον πλείω τὸν ἀριθμόν. Καὶ ἧττον δὲ ἡδέα
size smaller more the number Also less and pleasant
διὰ τὸ ἀπεπτότερα εἶναι· ἐν πᾶσι γὰρ τὸ πεπεμμένον
because-of the more-unconcocted to-be in all for the concocted
γλυκύτερον. Ὅτι μὲν οὖν οὔτε τὰ τῶν ὀρνίθων οὔτε τὰ
sweeter That indeed then neither the of-the birds nor the
τῶν ἰχθύων τελειοῦται πρὸς τὴν γένεσιν ἄνευ τῶν ἀρρένων,
of-the fish are-completed for the generation without the males
ἱκανῶς ὦπται, περὶ δὲ τοῦ γίνεσθαι καὶ ἐν τοῖς
sufficiently it-has-been-seen about and the to-come-about also in the
ἰχθύσι κυήματα ἄνευ τῶν ἀρρένων οὐχ ὁμοίως, μάλιστα
fish fetuses without the males not likewise most

δ' ἐπὶ τῶν ποταμίων ἑώραται περὶ τοὺς ἐρυθρίνους
but in-the-case-of the river-fish it-has-been-seen about the erythrini
συμβαῖνον· ἔνιοι γὰρ εὐθὺς ἔχοντες ᾠὰ φαίνονται, καθάπερ
happening some for at-once having eggs appear just-as
ἐν ταῖς ἱστορίαις γέγραπται περὶ αὐτῶν.
in the inquiries it-has-been-written about them
Ὅλως δ' ἔν γε τοῖς ὄρνισιν οὐδὲ τὰ γινόμενα διὰ
Generally and in at-least the birds not-even the coming-to-be through
τῆς ὀχείας ᾠὰ θέλει ὡς ἐπὶ τὸ πολὺ λαμβάνειν αὔξησιν,
the copulation eggs tend as for the most-part to-take growth
ἐὰν μὴ ὀχεύηται ἡ ὄρνις συνεχῶς. Τούτου δ' αἴτιον ὅτι
if not be-mounted the bird continuously Of-this and cause that
καθάπερ ἐπὶ τῶν γυναικῶν τὸ πλησιάζειν τοῖς ἄρρεσι
just-as in-the-case-of the women the to-approach the males
κατασπᾷ τὴν τῶν γυναικείων ἀπόκρισιν (ἕλκει γὰρ τὸ
draws-down the of-the womanly secretion draws for the
ὑγρὸν ἡ ὑστέρα θερμανθεῖσα, καὶ οἱ πόροι ἀναστομοῦνται),
moist the uterus heated and the ducts are-opened
τοῦτο συμβαίνει καὶ ἐπὶ τῶν ὀρνίθων ἐπιόντος κατὰ
this happens also in-the-case-of the birds coming-on by
μικρὸν τοῦ καταμηνιώδους περιττώματος, ὃ θύραζε μὲν
little the menstrual residue which outside indeed
οὐκ ἀποκρίνεται διὰ τὸ ὀλίγον εἶναι καὶ πρὸς τῷ
not is-secreted because-of the little to-be and at the
διαζώματι ἄνω τὰς ὑστέρας, συλλείβεται δ' εἰς αὐτὴν τὴν
diaphragm above the uteri trickles but into itself the
ὑστέραν. Τοῦτο γὰρ αὔξει τὸ ᾠόν, ὥσπερ τὰ ἔμβρυα τὰ
uterus This for grows the egg just-as the embryos the
τῶν ζῳοτόκων διὰ τοῦ ὀμφαλοῦ, τὸ ἐπιρρέον διὰ τῆς
of-the live-bearing through the navel the inflowing through the
ὑστέρας, ἐπεὶ ὅταν ἅπαξ ὀχευθῇ τὰ ὄρνεα, πάντα σχεδὸν
uterus since when once it-be-mounted the birds all nearly

ἀεὶ διατελεῖ ᾠὰ ἔχοντα, μικρὰ δὲ πάμπαν. Διὸ καὶ
always continue eggs having small but altogether Wherefore also
περὶ τῶν ὑπηνεμίων τινὲς εἰώθασι λέγειν ὡς οὐ γιγνομένων
about the wind-eggs some are-wont to-say that not coming-to-be
ἀλλ' ὡς ὑπολειμμάτων ἐκ προτέρας ὀχείας ὄντων.
but as remnants from earlier copulation being
Τοῦτο δ' ἐστὶ ψεῦδος· ὦπται γὰρ ἱκανῶς καὶ ἐπὶ
This but is false it-has-been-seen for sufficiently also in-the-case-of
νεοττῶν ἀλεκτορίδος καὶ χηνὸς γενόμενα ἄνευ ὀχείας. Ἔτι
chicks of-hen and of-goose coming-to-be without copulation Further
δὲ αἱ πέρδικες αἱ θήλειαι, αἵ τ' ἀνόχευτοι καὶ αἱ ὠχευμέναι
and the partridges the females the both unmounted and the mounted
τῶν εἰς τὰς θήρας ἀγομένων, ὀσμώμεναι τοῦ ἄρρενος
of-the into the hunts being-led smelling the male
καὶ ἀκούουσαι τῆς φωνῆς αἱ μὲν πληροῦνται αἱ
and hearing the voice the-ones indeed are-filled the-others
δὲ τίκτουσι παραχρῆμα. Τοῦ δὲ πάθους αἴτιον ταὐτὸν
and lay at-once Of-the and affection cause the-same
ὅπερ ἐπὶ τῶν ἀνθρώπων καὶ τῶν τετραπόδων·
which-very in-the-case-of the men and the quadrupeds
ἐὰν γὰρ ὀργῶντα τύχῃ τὰ σώματα πρὸς τὴν ὁμιλίαν,
if for being-in-heat happen the bodies toward the intercourse
τὰ μὲν ἰδόντα τὰ δὲ μικρᾶς γενομένης θίξεως
the-ones indeed having-seen the-others and small having-occurred touching
προΐεται σπέρμα. Τὰ δὲ τοιαῦτα τῶν ὀρνέων ὀχευτικὰ
emit seed The and such of-the birds salacious
καὶ πολύσπερμα τὴν φύσιν ἐστίν, ὥστε μικρᾶς δεῖσθαι
and many-seeded in-the nature are so-that little to-need
τῆς κινήσεως, ὅταν ὀργῶντα τύχῃ, καὶ γίνεσθαι ταχὺ
of-the motion when being-in-heat they-happen and to-come-about quickly
τὴν ἔκκρισιν αὐτοῖς, ὥστε τοῖς μὲν ἀνοχεύτοις ὑπηνέμια
the excretion for-them so-that in-the indeed unmounted wind-eggs

συνίστασθαι, τοῖς δ' ὠχευμένοις αὐξάνεσθαι καὶ τελειοῦσθαι
to-be-constituted in-the but mounted to-grow and to-be-completed
ταχέως. Τῶν δὲ θύραζε ᾠοτοκούντων οἱ μὲν ὄρνιθες
quickly Of-the and outside egg-laying the indeed birds
προΐενται τὸ ᾠὸν τέλειον, οἱ δ' ἰχθύες ἀτελές, ἀλλ' ἔξω
emit the egg complete the but fish incomplete but outside
λαμβάνει τὴν αὔξησιν, καθάπερ εἴρηται καὶ πρότερον.
it-takes the growth just-as has-been-said also before
Αἴτιον δ' ὅτι πολύγονόν ἐστι τὸ τῶν ἰχθύων γένος·
Cause and that prolific is the of-the fish kind
ἀδύνατον οὖν ἔσω πολλὰ λαμβάνειν τέλος, διόπερ
impossible then inside many to-take end wherefore
ἀποτίκτουσιν ἔξω. Ταχεῖα δ' ἡ πρόεσις· αἱ γὰρ ὑστέραι
they-lay outside Quick and the emission the for uteri
πρὸς τοῖς ἄρθροις τῶν θύραζε ᾠοτοκούντων ἰχθύων. Ἔστι
at the joints of-the outside egg-laying fish Are
δὲ τὰ μὲν τῶν ὀρνίθων δίχροα, τὰ δὲ τῶν ἰχθύων
and the indeed of-the birds two-colored the but of-the fish
μονόχροα πάντων. Τῆς δὲ διχροίας τὴν αἰτίαν ἴδοι
one-colored of-all Of-the and two-coloredness the cause could-see
τις ἂν ἐκ τῆς δυνάμεως ἑκατέρου τῶν μορίων, τοῦ τε
someone — from the power of-each of-the parts of-the both
λευκοῦ καὶ τοῦ ὠχροῦ. Γίνεται μὲν γὰρ ἡ ἀπόκρισις
white and of-the yellow Comes-about indeed for the secretion
ἐκ τοῦ αἵματος (οὐθὲν γὰρ ἄναιμον ᾠοτοκεῖ ζῷον), τὸ
from the blood nothing for bloodless lays-eggs animal the
δ' αἷμα ὅτι ἐστὶν ὕλη τοῖς σώμασιν, εἴρηται πολλάκις.
and blood that is matter for-the bodies has-been-said often
Τὸ μὲν οὖν ἐστὶν ἐγγύτερον αὐτοῦ τῆς μορφῆς τῶν
The indeed then is nearer of-it to-the shape of-the
μορίων γινομένων, τὸ θερμόν· τὸ δὲ γεωδέστερον τὴν
parts coming-to-be the hot the but more-earthy the

τοῦ σώματος παρέχεται σύστασιν καὶ πορρώτερόν ἐστιν.
of-the body provides constitution and farther is
Διόπερ ὅσα δίχροά ἐστι τῶν ᾠῶν, τὴν μὲν ἀρχὴν τὸ
Wherefore as-many-as two-colored are of-the eggs the indeed principle the
ζῷον λαμβάνει ἐκ τοῦ λευκοῦ τῆς γενέσεως (ἐν γὰρ τῷ
animal takes from the white of-the generation in for the
θερμῷ ἡ ψυχικὴ ἀρχή), τὴν δὲ τροφὴν ἐκ τοῦ ὠχροῦ.
hot the soul principle the but nourishment from the yellow
Τοῖς μὲν οὖν τὴν φύσιν θερμοτέροις τῶν ζῴων διακέκριται
For-the indeed then in-the nature hotter of-the animals has-been-separated
χωρὶς ἐξ οὗ τε ἡ ἀρχὴ γίνεται καὶ ἐξ οὗ τρέφεται,
apart from which both the principle comes-to-be and from which it-is-nourished
καὶ τὸ μὲν λευκόν ἐστι τὸ δ' ὠχρόν, καὶ πλέον
and the-one indeed white is the-other and yellow and more
ἀεὶ τὸ λευκὸν καὶ καθαρὸν τοῦ ὠχροῦ καὶ γεώδους·
always the white and pure than-the yellow and earthy
τοῖς δ' ἧττον θερμοῖς καὶ ὑγροτέροις τὸ ὠχρὸν πλέον καὶ
for-the but less hot and moister the yellow more and
ὑγρότερον. Ὅπερ συμβαίνει ἐπὶ τῶν λιμναίων ὀρνέων·
moister Which-very happens in-the-case-of the marsh birds
ὑγρότεροι γὰρ τὴν φύσιν καὶ ψυχρότεροι τῶν πεζευόντων
moister for in-the nature and colder than-the land
εἰσὶν ὀρνέων, ὥστε καὶ τὰ ᾠὰ τῶν τοιούτων πολλὴν ἔχει
are birds so-that also the eggs of-the such much have
τὴν καλουμένην λέκιθον καὶ ἧττον ὠχρὰν διὰ τὸ ἧττον
the so-called yolk and less yellow because-of the less
ἀποκεκρίσθαι τὸ λευκόν. Τὰ δ' ἤδη καὶ ψυχρὰ τὴν
to-have-been-separated the white The but already also cold in-the
φύσιν τῶν ᾠοτοκούντων καὶ ἔτι ὑγρὰ μᾶλλον (τοιοῦτον
nature of-the egg-laying and further moist more such
δ' ἐστὶ τὸ τῶν ἰχθύων γένος) οὐδ' ἀποκεκριμένον ἔχει
and is the of-the fish kind not-even separated has

τὸ λευκὸν διά τε μικρότητα καὶ διὰ τὸ πλῆθος τοῦ
the white because-of both smallness and because-of the quantity of-the
ψυχροῦ καὶ γεώδους· διόπερ γίνεται μονόχροα πάντα τὰ
cold and earthy wherefore become one-colored all the
τῶν ἰχθύων, καὶ ὡς μὲν ὠχρὰ λευκά, ὡς δὲ λευκὰ ὠχρά.
of-the fish and as indeed yellow white as but white yellow
Τὰ δὲ τῶν ὀρνέων καὶ τὰ ὑπηνέμια ἔχει ταύτην τὴν
The but of-the birds even the wind-eggs have this the
δίχροιαν· ἔχει γὰρ ἐξ οὗ ἑκάτερον ἔσται τῶν μορίων, καὶ
two-coloredness it-has for from which each will-be of-the parts and
ὅθεν ἡ ἀρχὴ καὶ ὅθεν ἡ τροφή, ἀλλὰ ταῦτ' ἀτελῆ καὶ
whence the principle and whence the nourishment but these incomplete and
προσδεόμενα τοῦ ἄρρενος· γίνεται γὰρ τὰ ὑπηνέμια γόνιμα,
needing-besides the male become for the wind-eggs fertile
ἐὰν ἔν τινι καιρῷ ὀχευθῇ ὑπὸ τοῦ ἄρρενος. Οὐκ ἔστι δὲ
if at some season it-be-mounted by the male Not is and
τῆς διχροίας αἴτιον τὸ ἄρρεν καὶ τὸ θῆλυ, ὡς τοῦ μὲν
of-the two-coloredness cause the male and the female as the indeed
λευκοῦ ὄντος ἀπὸ τοῦ ἄρρενος, τοῦ δ' ὠχροῦ ἀπὸ τοῦ
white being from the male the but yellow from the
θήλεος· ἀλλ' ἄμφω γίνεται ἀπὸ τοῦ θήλεος, ἀλλὰ τὸ μὲν
female but both come-to-be from the female but the indeed
ψυχρὸν τὸ δὲ θερμόν. Ἐν ὅσοις μὲν οὖν ἐστὶ πολὺ
cold the-other and hot In as-many-as indeed then is much
τὸ θερμόν, ἀποκρίνεται, ἐν ὅσοις δ' ὀλίγον, οὐ δύναται·
the hot it-is-separated in as-many-as but little not it-can
διὸ μονόχροα τὰ κυήματα, καθάπερ εἴρηται, τὰ τῶν
wherefore one-colored the fetuses just-as has-been-said the of-the
τοιούτων. Ἡ δὲ γονὴ συνέστησε μόνον· καὶ διὰ τοῦτο τὸ
such The but semen constituted only and because-of this the
μὲν πρῶτον φαίνεται λευκὸν καὶ μικρὸν τὸ κύημα ἐν τοῖς
indeed first appears white and small the fetus in the

ὄρνισι, προϊὸν δὲ ὠχρὸν ἅπαν, συμμιγνυμένου ἀεὶ πλείονος
birds going-on but yellow all being-mixed always more
αἱματώδους· τέλος δ' ἀποκρινομένου τοῦ θερμοῦ κύκλῳ
bloody finally and being-separated the hot in-circle
περιίσταται τὸ λευκόν, ὥσπερ ὑγροῦ ζέοντος, ὁμοίως πάντῃ·
stands-around the white just-as of-moist boiling equally everywhere
τὸ γὰρ λευκὸν φύσει μὲν ὑγρόν, ἔχει δ' ἐν αὑτῷ τὴν
the for white by-nature indeed moist it-has but in itself the
θερμότητα τὴν ψυχικήν· διὸ κύκλῳ ἀποκρίνεται, τὸ δ'
heat the soul wherefore in-circle it-is-separated the and
ὠχρὸν καὶ γεῶδες ἐντός. Κἂν πολλὰ συνεράσας τις ᾠὰ
yellow and earthy inside And-if many having-poured-together someone eggs
εἰς κύστιν ἤ τι τοιοῦτον ἕψῃ πυρὶ μὴ θάττονα ποιοῦντι
into bladder or something such boil with-fire not quicker making
τὴν τοῦ θερμοῦ κίνησιν ἢ τὴν ἐν τοῖς ᾠοῖς διάκρισιν,
the of-the hot motion than the in the eggs separation
ὥσπερ ἐν ἑνὶ ᾠῷ, καὶ τὸ ἐκ πάντων τῶν ᾠῶν σύστημα
just-as in one egg also the from all the eggs mass
τὸ μὲν ὠχρὸν ἐν μέσῳ γίνεται, κύκλῳ δὲ τὸ λευκόν.
the indeed yellow in middle becomes in-circle and the white

The egg is attached to the uterus at the sharp end, where the male's principle lies, so that end is harder and comes out last; the shell, a soft membrane when laid, sets as it cools. The yolk, not the white, feeds the chick, against Alcmaeon. Brooding, or warm earth and weather, concocts the eggs, and too much or too little heat addles them. Two navels run from the great vein, one to the yolk's membrane, the other to the chorion under the shell, and the yolk is at last drawn into the body.

Διότι μὲν οὖν τὰ μὲν μονόχροα τὰ δὲ δίχροα
Why indeed then the-ones indeed one-colored the-others and two-colored
τῶν ᾠῶν, εἴρηται· ἀποκρίνεται δ' ἐν τοῖς ᾠοῖς ἡ τοῦ
of-the eggs it-has-been-said is-separated and in the eggs the of-the
ἄρρενος ἀρχὴ καθ' ὃ προσπέφυκε τῇ ὑστέρᾳ τὸ ᾠόν,
male principle at which is-attached to-the uterus the egg
καὶ γίνεται δὴ ἀνόμοιον τὸ τῶν διχρόων ᾠῶν, καὶ οὐ
and becomes indeed unequal the of-the two-colored eggs and not
πάμπαν στρογγύλον ἀλλ' ἐπὶ θάτερα ὀξύτερον, διὰ
altogether round but on the-one-side sharper because-of
τὸ διαφέρειν δεῖν τοῦ λευκοῦ, ἐν ᾧ ἔχει τὴν ἀρχήν.
the to-differ to-be-needful the white in which it-has the principle
Διόπερ σκληρότερον ταύτῃ τὸ ᾠὸν ἢ κάτωθεν· σκεπάζειν
Wherefore harder there the egg than below to-cover
γὰρ δεῖ καὶ φυλάττειν τὴν ἀρχήν. Καὶ διὰ τοῦτο
for it-must and to-guard the principle And because-of this
ἐξέρχεται ὕστερον τοῦ ᾠοῦ τὸ ὀξύ· τὸ γὰρ προσπεφυκὸς
comes-out later of-the egg the sharp-end the for attached
ὕστερον ἐξέρχεται, κατὰ τὴν ἀρχὴν δὲ προσπέφυκεν,
later comes-out at the principle and it-is-attached
ἐν τῷ ὀξεῖ δ' ἡ ἀρχή. Τὸν αὐτὸν δ' ἔχει τρόπον
in the sharp-end and the principle The same and it-has way
καὶ ἐν τοῖς τῶν φυτῶν σπέρμασιν· προσπέφυκε γὰρ ἡ
also in the of-the plants seeds is-attached for the

ἀρχὴ τοῦ σπέρματος τὰ μὲν ἐν τοῖς κλάδοις, τὰ
principle of-the seed the-ones indeed on the branches the-others
δ' ἐν τοῖς κελύφεσι, τὰ δ' ἐν τοῖς περικαρπίοις.
and on the husks the-others and on the seed-cases
Δῆλον δ' ἐπὶ τῶν χεδροπῶν· ᾗ γὰρ συνῆπται
Clear and in-the-case-of the pulses where for is-joined
τὸ δίθυρον τῶν κυάμων καὶ τῶν τοιούτων σπερμάτων,
the two-valved of-the beans and of-the such seeds
ταύτῃ προσπέφυκεν· ἡ δ' ἀρχὴ ἐνταῦθα τοῦ σπέρματος.
there is-attached the and principle there of-the seed
Ἀπορήσειε δ' ἄν τις περὶ τῆς αὐξήσεως τῶν ᾠῶν,
Would-be-puzzled and — someone about the growth of-the eggs
τίνα τρόπον ἐκ τῆς ὑστέρας συμβαίνει. Τὰ μὲν γὰρ
in-what way from the uterus it-happens The indeed for
ζῷα διὰ τοῦ ὀμφαλοῦ λαμβάνει τὴν τροφήν, τὰ δ' ᾠὰ
animals through the navel take the nourishment the but eggs
διὰ τίνος; ἐπειδήπερ οὐχ ὥσπερ οἱ σκώληκες αὐτὰ δι'
through what since not just-as the larvae themselves through
αὑτῶν λαμβάνει τὴν αὔξησιν. Εἰ δ' ἔστι τι δι' οὗ
themselves take the growth If and there-is something through which
προσπέφυκε, τοῦτο ποῖ τρέπεται τελεωθέντος; οὐ γὰρ
it-is-attached this whither is-it-turned completed not for
συνεξέρχεται, καθάπερ ὁ ὀμφαλὸς τοῖς ζῴοις· γίνεται
it-comes-out-with just-as the navel with-the animals becomes
γὰρ τὸ πέριξ ὄστρακον τελεωθέντος. Τὸ μὲν οὖν εἰρημένον
for the around shell completed The indeed then said
ὀρθῶς ζητεῖται· λανθάνει δ' ὅτι τὸ γινόμενον ὄστρακον τὸ
rightly is-sought escapes-notice but that the becoming shell the
πρῶτον μαλακὸς ὑμήν ἐστιν, ἀλλὰ τελεωθέντος γίνεται
first soft membrane is but completed it-becomes
σκληρὸν καὶ κραῦρον, οὕτω συμμέτρως ὥστ' ἐξέρχεται
hard and brittle so proportionately so-that it-comes-out

μὲν ἔτι μαλακόν (πόνον γὰρ ἂν παρεῖχε τικτόμενον),
indeed still soft pain for — it-would-give being-laid
ἐξελθὸν δ' εὐθὺς πήγνυται ψυχθέν, συνεξατμίζοντος τοῦ
having-come-out but at-once it-sets cooled evaporating-with the
ὑγροῦ ταχὺ δι' ὀλιγότητα, λειπομένου δὲ τοῦ γεώδους.
moisture quickly because-of smallness being-left and the earthy
Τούτου δή τι τοῦ ὑμένος κατ' ἀρχὰς ὀμφαλῶδές ἐστι
Of-this indeed some of-the membrane at the-beginnings navel-like is
κατὰ τὸ ὀξύ, καὶ ἀπέχει ἔτι μικρῶν ὄντων οἷον αὐλός.
at the sharp-end and projects still small being like pipe
Φανερὸν δ' ἐστὶν ἐν τοῖς ἐκβολίμοις τῶν μικρῶν ᾠῶν·
Evident and it-is in the aborted of-the small eggs
ἐὰν γὰρ βρεχθῇ ἢ ἄλλως πως ῥιγώσασα ἐκβάλῃ ἡ
if for be-wet or otherwise somehow having-shivered abort the
ὄρνις, ἔτι αἱματῶδές τε φαίνεται τὸ κύημα καὶ ἔχον δι'
bird still blood-like both appears the fetus and having through
ἑαυτοῦ στόλον μικρὸν ὀμφαλώδη. Μείζονος δὲ γινομένου
itself stalk small navel-like Larger but becoming
περιτείνεται μᾶλλον οὗτος καὶ ἐλάττων γίνεται. Τελεωθέντος
is-stretched-round more this and smaller becomes Completed
δὲ τὸ ὀξὺ τοῦ ᾠοῦ τοῦτο συμβαίνει τὸ πέρας. Ὑπὸ δὲ
and the sharp-end of-the egg this happens the end Under and
τούτῳ ὁ ἐντὸς ὑμήν, ὃς ὁρίζει τὸ λευκὸν καὶ τὸ ὠχρὸν
this the inner membrane which divides the white and the yellow
ἀπὸ τούτου. Τελειωθέντος δ' ἀπολύεται ὅλον τὸ ᾠόν, καὶ οὐ
from this Completed and is-loosed whole the egg and not
φαίνεται εὐλόγως ὁ ὀμφαλός· αὐτοῦ γάρ ἐστι τοῦ ἐσχάτου
appears reasonably the navel of-it for is of-the outermost
τὸ ἄκρον. Ἡ δ' ἔξοδος τοὐναντίον γίνεται τοῖς ᾠοῖς ἢ
the tip The and exit the-opposite comes-about for-the eggs than
τοῖς ζῳοτοκουμένοις· τοῖς μὲν γὰρ ἐπὶ κεφαλὴν καὶ τὴν
for-the born-live for-the indeed for onto head and the

ἀρχήν, τῷ δ' ᾠῷ γίνεται ἡ ἔξοδος οἷον ἐπὶ πόδας.
principle for-the but egg comes-about the exit as onto feet
Τούτου δ' αἴτιον τὸ εἰρημένον, ὅτι προσπέφυκε κατὰ τὴν
Of-this and cause the said that it-is-attached at the
ἀρχήν. Ἡ δὲ γένεσις ἐκ τοῦ ᾠοῦ συμβαίνει τοῖς ὄρνισιν
principle The and generation from the egg happens for-the birds
ἐπῳαζούσης καὶ συμπεττούσης τῆς ὄρνιθος, ἀποκρινομένου
brooding and concocting-together the bird being-separated
μὲν τοῦ ζῴου ἐκ μέρους τοῦ ᾠοῦ, τὴν δ' αὔξησιν
indeed the animal from part of-the egg the and growth
λαμβάνοντος καὶ τελειουμένου ἐκ τοῦ λοιποῦ μέρους.
taking and being-completed from the remaining part
Ἡ γὰρ φύσις ἅμα τήν τε τοῦ ζῴου ὕλην ἐν τῷ ᾠῷ τίθησι
The for nature at-once the both of-the animal matter in the egg places
καὶ τὴν ἱκανὴν τροφὴν πρὸς τὴν αὔξησιν· ἐπεὶ γὰρ οὐ
and the sufficient nourishment for the growth since for not
δύναται τελεοῦν ἐν αὑτῇ ἡ ὄρνις, συνεκτίκτει τὴν τροφὴν
it-can to-complete in itself the bird it-bears-together the nourishment
ἐν τῷ ᾠῷ. Τοῖς μὲν γὰρ ζωοτοκουμένοις ἐν ἄλλῳ μορίῳ
in the egg For-the indeed for born-live in other part
γίνεται ἡ τροφή, τὸ καλούμενον γάλα, ἐν τοῖς μαστοῖς·
comes-about the nourishment the so-called milk in the breasts
τοῖς δ' ὄρνισι τοῦτο ποιεῖ ἡ φύσις ἐν τοῖς ᾠοῖς, τοὐναντίον
for-the but birds this does the nature in the eggs the-opposite
μέντοι ἢ οἵ τε ἄνθρωποι οἴονται καὶ Ἀλκμαίων φησὶν ὁ
however than the both men think and Alcmaeon says the
Κροτωνιάτης. Οὐ γὰρ τὸ λευκόν ἐστι γάλα, ἀλλὰ τὸ ὠχρόν·
Crotonian Not for the white is milk but the yellow
τοῦτο γάρ ἐστιν ἡ τροφὴ τοῖς νεοττοῖς· οἱ δ' οἴονται
this for is the nourishment for-the chicks they but think
τὸ λευκὸν διὰ τὴν ὁμοιότητα τοῦ χρώματος. Γίνεται
the white because-of the likeness of-the color Comes-to-be

μὲν οὖν ἐπῳζούσης, καθάπερ εἴρηται, τῆς ὄρνιθος ὁ
indeed then brooding just-as has-been-said the bird the
νεοττός· οὐ μὴν ἀλλὰ κἂν ἡ ὥρα ᾖ εὔκρατος ἢ ὁ τόπος
chick not truly but even-if the season be temperate or the place
ἀλεεινός, ἐν ᾧ ἂν κείμενα τυγχάνωσιν, ἐκπέττεται καὶ
warm in which — lying they-happen they-are-concocted both
τὰ τῶν ὀρνίθων καὶ τὰ τῶν τετραπόδων καὶ ᾠοτόκων.
the of-the birds and the of-the quadrupeds and egg-laying
Πάντα γὰρ εἰς τὴν γῆν ἐκτίκτει, καὶ συμπέττονται ὑπὸ
All for into the earth lay and are-concocted by
τῆς ἐν τῇ γῇ θερμότητος. Ὅσα δ' ἐπῳάζει φοιτῶντα
the in the earth heat As-many-as but brood visiting
τῶν ᾠοτόκων καὶ τετραπόδων, ταῦτα ποιεῖ μᾶλλον
of-the egg-laying and quadrupeds these do rather
φυλακῆς χάριν. Τὸν αὐτὸν δὲ τρόπον γίνεται τά τε
of-guarding for-the-sake The same and way come-to-be the both
τῶν ὀρνίθων ᾠὰ καὶ τὰ τῶν ζῴων τῶν τετραπόδων· καὶ
of-the birds eggs and the of-the animals the quadrupeds and
γὰρ σκληρόδερμα καὶ δίχροα, καὶ πρὸς τῷ διαζώματι
for hard-shelled and two-colored and at the diaphragm
συνίσταται καθάπερ καὶ τὰ τῶν ὀρνίθων, καὶ τἆλλα ταὐτὰ
are-constituted just-as also the of-the birds and the-other the-same
πάντα συμβαίνει καὶ ἐντὸς καὶ ἐκτός. Ὥστε ἡ αὐτὴ
all happen both inside and outside So-that the same
θεωρία περὶ τῆς αἰτίας ἐστὶ πάντων. Ἀλλὰ τὰ μὲν τῶν
study about the cause is of-all But the indeed of-the
τετραπόδων δι' ἰσχὺν ἐκπέττεται καὶ ὑπὸ τῆς ὥρας,
quadrupeds through strength are-concocted also by the season
τὰ δὲ τῶν ὀρνέων ἐπικηρότερα, καὶ δεῖται τῆς τεκούσης.
the but of-the birds more-perishable and need the mother
Ἔοικε δὲ καὶ ἡ φύσις βούλεσθαι τὴν τῶν τέκνων αἴσθησιν
Seems and also the nature to-wish the of-the offspring perception

ἐπιμελητικὴν παρασκευάζειν· ἀλλὰ τοῖς μὲν χείροσι τοῦτ'
caring to-provide but in-the indeed worse this
ἐμποιεῖ μέχρι τοῦ τεκεῖν μόνον, τοῖς δὲ καὶ περὶ τὴν
it-implants up-to the to-bear only in-the but also about the
τελέωσιν, ὅσα δὲ φρονιμώτερα, καὶ περὶ τὴν ἐκτροφήν.
completion as-many-as but more-intelligent also about the rearing
Τοῖς δὲ δὴ μάλιστα κοινωνοῦσι φρονήσεως καὶ πρὸς
In-the and indeed most sharing in-intelligence also toward
τελεωθέντα γίνεται συνήθεια καὶ φιλία, καθάπερ τοῖς τε
the-completed comes-about familiarity and friendship just-as in-the both
ἀνθρώποις καὶ τῶν τετραπόδων ἐνίοις, τοῖς δ' ὄρνισι μέχρι
men and of-the quadrupeds some in-the but birds up-to
τοῦ γεννῆσαι καὶ ἐκθρέψαι· διόπερ καὶ μὴ ἐπῳάζουσαι αἱ
the to-generate and to-rear wherefore also not brooding the
θήλειαι, ὅταν τέκωσι, διατίθενται χεῖρον, ὥσπερ ἑνός τινος
females when they-lay are-disposed worse just-as of-one some
στερισκόμεναι τῶν συμφύτων. Τελεοῦται δ' ἐν τοῖς ᾠοῖς
being-deprived of-the congenital-things Are-completed and in the eggs
τὰ ζῷα θᾶττον ἐν ταῖς ἀλεεινᾶις ἡμέραις· συνεργάζεται
the animals quicker in the warm days works-with
γὰρ ἡ ὥρα. Καὶ γὰρ ἡ πέψις θερμότης τίς ἐστιν. Ἡ
for the season And for the concoction heat a-kind is The
τε γὰρ γῆ συμπέττει τῇ θερμότητι, καὶ ἡ ἐπῳάζουσα
both for earth concocts-with by-the heat and the brooding
ταὐτὸ τοῦτο δρᾷ· προσεγχεῖ γὰρ τὸ ἐν αὐτῇ θερμόν.
the-same this does pours-in for the in her hot
Καὶ διαφθείρεται δὲ τὰ ᾠὰ καὶ γίνεται τὰ καλούμενα
Also are-destroyed and the eggs and become the so-called
οὔρια μᾶλλον κατὰ τὴν θερμὴν ὥραν εὐλόγως· ὥσπερ
wind-spoiled more in the hot season reasonably just-as
γὰρ καὶ οἱ οἶνοι ἐν ταῖς ἀλέαις ὀξύνονται ἀνατρεπομένης
for also the wines in the heats turn-sour being-stirred-up

τῆς ἰλύος (τοῦτο γὰρ αἴτιον τῆς διαφθορᾶς), καὶ ἐν τοῖς
the lees this for cause of-the destruction also in the
ᾠοῖς ἡ λέκιθος· τοῦτο γὰρ ἐν ἀμφοτέροις τὸ γεῶδες.
eggs the yolk this for in both the earthy
Διὸ καὶ ἀναθολοῦται ὁ οἶνος μιγνυμένης τῆς ἰλύος,
Wherefore also is-made-turbid the wine being-mixed the lees
καὶ τὰ διαφθειρόμενα ᾠὰ τῆς λεκίθου. Τοῖς μὲν οὖν
and the being-destroyed eggs the yolk For-the indeed then
πολυτόκοις συμβαίνει τὸ τοιοῦτον εὐλόγως (οὐ γὰρ ῥᾴδιον
prolific happens the such reasonably not for easy
τὴν ἁρμόττουσαν πᾶσιν ἀποδιδόναι θερμασίαν, ἀλλὰ τοῖς
the fitting to-all to-render heat but for-the
μὲν ἐλλείπειν τοῖς δὲ πλεονάζειν, καὶ ἀναθολοῦν οἷον
indeed to-fall-short for-the and to-exceed and to-make-turbid as
σήπουσαν), τοῖς δὲ γαμψώνυξιν ὀλιγοτόκοις οὖσιν οὐδὲν
rotting in-the but crook-taloned few-bearing being nothing
ἧττον συμβαίνει τοῦτο· πολλάκις μὲν γὰρ καὶ τοῖν δυοῖν
less happens this often indeed for also of-the two
θάτερον οὔριον γίνεται, τὸ δὲ τρίτον ὡς εἰπεῖν ἀεί· θερμὰ
one-of-the-two wind-spoiled becomes the but third as to-say always hot
γὰρ ὄντα τὴν φύσιν οἷον ὑπερζεῖν ποιεῖ τὴν ὑγρότητα
for being in-the nature as-it-were to-boil-over makes the moisture
τὴν ἐν τοῖς ᾠοῖς. Ἔχει γὰρ δὴ καὶ τὴν φύσιν ἐναντίαν
the in the eggs Has for indeed also the nature opposite
τό τε ὠχρὸν καὶ τὸ λευκόν. Τὸ μὲν γὰρ ὠχρὸν ἐν τοῖς
the both yellow and the white The indeed for yellow in the
πάγοις πήγνυται, θερμαινόμενον δὲ ὑγραίνεται· διὸ καὶ
frosts sets being-heated but is-liquefied wherefore also
συμπεττόμενον ἐν τῇ γῇ ἢ ὑπὸ τοῦ ἐπῳάζειν ὑγραίνεται,
being-concocted in the earth or by the brooding is-liquefied
καὶ τοιοῦτον ὂν γίνεται τροφὴ τοῖς συνισταμένοις
and such being becomes nourishment for-the being-constituted

ζῴοις. Πυρούμενον δὲ καὶ ὀπτώμενον οὐ γίνεται σκληρὸν
animals Being-burned but and being-roasted not becomes hard
διὰ τὸ εἶναι τὴν φύσιν γεώδες οὕτως ὥσπερ κηρός·
because-of the to-be in-the nature earthy so just-as wax
καὶ διὰ τοῦτο θερμαινόμενα μᾶλλον, ἐὰν ᾖ μὴ ἐξ
and because-of this being-heated more if it-be not from
ὑγροῦ περιττώματος, διοροῦται καὶ γίνεται οὔρια.
moist residue becomes-watery and becomes wind-spoiled
Τὸ δὲ λευκὸν ὑπὸ μὲν τῶν πάγων οὐ πήγνυται, ἀλλ'
The but white by indeed the frosts not sets but
ὑγραίνεται μᾶλλον (τὸ δ' αἴτιον εἴρηται πρότερον),
is-liquefied rather the and cause has-been-said before
πυρούμενον δὲ γίνεται στερεόν· διὸ καὶ πεττόμενον
being-burned but becomes solid wherefore also being-concocted
περὶ τὴν γένεσιν τῶν ζῴων παχύνεται. Ἐκ τούτου γὰρ
about the generation of-the animals is-thickened From this for
συνίσταται τὸ ζῷον, τὸ δ' ὠχρὸν τροφὴ γίνεται, καὶ τοῖς
is-constituted the animal the but yellow nourishment becomes also for-the
ἀεὶ συνισταμένοις τῶν μορίων ἐντεῦθεν ἡ αὔξησις. Διὸ
always being-constituted of-the parts from-there the growth Wherefore
καὶ διώρισται τό τε ὠχρὸν καὶ τὸ λευκὸν χωρὶς ὑμέσιν
also are-separated the both yellow and the white apart by-membranes
ὡς ἔχοντα τὴν φύσιν ἑτέραν. Δι' ἀκριβείας μὲν οὖν,
as having the nature different Through exactness indeed then
ὃν τρόπον ἔχουσι ταῦτα πρὸς ἄλληλα κατ' ἀρχάς
in-what way have these to one-another at beginnings
τε τῆς γενέσεως καὶ συνισταμένων τῶν ζῴων, ἔτι δὲ
both of-the generation and being-constituted the animals further and
περί τε ὑμένων καὶ ὀμφαλῶν, ἐκ τῶν ἐν ταῖς ἱστορίαις
about both membranes and navels from the in the inquiries
γεγραμμένων δεῖ θεωρεῖν· πρὸς δὲ τὴν παροῦσαν
written one-must to-study for and the present

σκέψιν ἱκανὸν φανερὸν εἶναι τοσοῦτον, ὅτι συστάσης
inquiry sufficient evident to-be so-much that being-constituted
πρώτης τῆς καρδίας, καὶ τῆς μεγάλης φλεβὸς ἀπὸ ταύτης
first the heart and the great vein from this
ἀφορισθείσης, δύο ὀμφαλοὶ ἀπὸ τῆς φλεβὸς τείνουσιν,
being-marked-off two navels from the vein stretch
ὁ μὲν εἰς τὸν ὑμένα τὸν περιέχοντα τὸ ὠχρόν, ὁ δ'
the indeed to the membrane the surrounding the yellow the and
ἕτερος εἰς τὸν ὑμένα τὸν χοροειδῆ, ὃς κύκλῳ περιέχει τὸ
other to the membrane the chorion-like which in-circle surrounds the
ζῷον· ἔστι δ' οὗτος περὶ τὸν ὑμένα τὸν τοῦ ὀστράκου.
animal is and this about the membrane the of-the shell
Διὰ μὲν οὖν θατέρου λαμβάνει τὴν ἐκ τοῦ ὠχροῦ
Through indeed then the-one it-takes the from the yellow
τροφήν, τὸ δ' ὠχρὸν γίνεται πλέον· ὑγρότερον γὰρ γίνεται
nourishment the and yellow becomes more moister for becomes
θερμαινόμενον. Δεῖ γὰρ τὴν τροφὴν σωματώδη οὖσαν
being-heated It-must for the nourishment bodily being
ὑγρὰν εἶναι καθάπερ τοῖς φυτοῖς, ζῇ δὲ τὸ πρῶτον καὶ τὰ
moist to-be just-as for-the plants lives and the first also the
ἐν τοῖς ᾠοῖς γιγνόμενα καὶ τὰ ἐν τοῖς ζῴοις φυτοῦ βίον· τῷ
in the eggs coming-to-be and the in the animals of-plant life by-the
πεφυκέναι γὰρ ἔκ τινος λαμβάνει τὴν πρώτην αὔξησιν καὶ
to-be-attached for from something it-takes the first growth and
τροφήν. Ὁ δ' ἕτερος ὀμφαλὸς τείνει εἰς τὸ περιέχον χόριον.
nourishment The and other navel stretches to the surrounding chorion
Δεῖ γὰρ ὑπολαβεῖν τὰ ᾠοτοκούμενα τῶν ζῴων πρὸς μὲν
One-must for to-suppose the egg-born of-the animals toward indeed
τὸ ὠχρὸν οὕτως ἔχειν τὸν νεοττὸν ὥσπερ πρὸς τὴν μητέρα
the yellow so to-be the chick just-as toward the mother
τὰ ζῳοτοκούμενα ἔμβρυα, ὅταν ἐν τῇ μητρὶ ᾖ (ἐπεὶ
the born-live embryos when in the mother it-be since

γὰρ οὐκ ἐκτρέφονταί γε ἐν τῇ μητρὶ τὰ ᾠοτοκούμενα,
for not are-reared at-least in the mother the egg-born
ἐκλαμβάνει τι μέρος αὐτῆς), πρὸς δὲ τὸν ἐξωτάτω ὑμένα
it-takes some part of-her toward and the outermost membrane
τὸν αἱματώδη ὡς πρὸς τὴν ὑστέραν. Ἅμα δὲ περί τε τὸ
the blood-like as toward the uterus At-once and about both the
ὠχρὸν καὶ τὸ χόριον τὸ ἀνάλογον τῇ ὑστέρᾳ τὸ ὄστρακον
yellow and the chorion the analogous to-the uterus the shell
τοῦ ᾠοῦ περιπέφυκεν, ὥσπερ ἂν εἴ τις περιθείη
of-the egg has-grown-round just-as — if someone should-put-around
περί τε τὸ ἔμβρυον αὐτὸ καὶ περὶ τὴν μητέρα ὅλην.
about both the embryo itself and about the mother whole
Ἔχει δ' οὕτως, διότι δεῖ τὸ ἔμβρυον ἐν τῇ ὑστέρᾳ
It-is and so because it-must the embryo in the uterus
εἶναι καὶ πρὸς τῇ μητρί. Ἐν μὲν οὖν τοῖς ζῳοτοκουμένοις
to-be and at the mother In indeed then the born-live
ἡ ὑστέρα ἐν τῇ μητρί ἐστιν, ἐν δὲ τοῖς ᾠοτοκουμένοις
the uterus in the mother is in but the egg-born
ἀνάπαλιν, ὥσπερ ἂν εἴ τις εἴποι τὴν μητέρα ἐν τῇ
the-reverse just-as — if someone should-say the mother in the
ὑστέρᾳ εἶναι· τὸ γὰρ ἀπὸ τῆς μητρὸς γινόμενον ἡ τροφὴ
uterus to-be the for from the mother coming the nourishment
τὸ ὠχρόν ἐστιν. Αἴτιον δ' ὅτι ἡ ἐκτροφὴ οὐκ ἐν τῇ μητρί
the yellow is Cause and that the rearing not in the mother
ἐστιν. Αὐξανομένων δὲ πρότερον ὁ ὀμφαλὸς συμπίπτει
is Growing and earlier the navel collapses
ὁ πρὸς τὸ χόριον, διότι ταύτῃ δεῖ τὸ ζῷον ἐξελθεῖν, τὸ
the toward the chorion because there must the animal to-come-out the
δὲ λοιπὸν τοῦ ὠχροῦ καὶ ὁ ὀμφαλὸς ὁ εἰς τὸ ὠχρὸν
and rest of-the yellow and the navel the into the yellow
ὕστερον. Δεῖ γὰρ ἔχειν τροφὴν εὐθὺς τὸ γενόμενον· οὔτε
later It-must for to-have nourishment at-once the having-come-to-be neither

γὰρ ἀπὸ τῆς μητρὸς τιτθεύεται, δι' αὑτοῦ τε οὐκ εὐθὺς
for from the mother is-suckled through itself and not at-once
δύναται πορίζεσθαι τὴν τροφήν· διόπερ ἐντὸς εἰσέρχεται
it-can to-procure the nourishment wherefore inside goes
τὸ ὠχρὸν μετὰ τοῦ ὀμφαλοῦ, καὶ περιφύεται ἡ σάρξ. Τὰ
the yellow with the navel and grows-round the flesh The
μὲν οὖν ἐκ τῶν τελείων ᾠῶν γινόμενα θύραζε τοῦτον
indeed then from the complete eggs coming-to-be outside this
γίγνεται τὸν τρόπον ἐπί τε τῶν ὀρνίθων καὶ τῶν
come-to-be the way in-the-case-of both the birds and the
τετραπόδων, ὅσα ᾠοτοκεῖ τὸ ᾠὸν τὸ σκληρόδερμον.
quadrupeds as-many-as lay the egg the hard-shelled
Διάδηλα δὲ ταῦτα μᾶλλον ἐπὶ τῶν μειζόνων· ἐν γὰρ
Plain and these more in-the-case-of the larger in for
τοῖς ἐλάττοσιν ἀφανῆ διὰ μικρότητα τῶν ὄγκων ἐστίν.
the smaller invisible because-of smallness of-the bulks it-is

III · THE EGGS OF FISH

Fish lay eggs too. Those with the uterus low lay incomplete ones; selachians lay a complete egg within and bear live, save the fishing-frog, whose spiny head makes it lay a firm egg outside, the others' being soft. Lacking a shell, selachians lack the second navel to the chorion; the young form at the egg's tip, away from its attachment, the one-colored egg feeding from either end, and, as in the smooth dogfish, keep a navel to the uterus once the egg is spent.

Ἔτι δ' ἐστὶν ᾠοτόκον τὸ τῶν ἰχθύων γένος. Τούτων δὲ
Further and is egg-laying the of-the fish kind Of-these and
τὰ μὲν ἔχοντα κάτω τὴν ὑστέραν ἀτελὲς ᾠὸν τίκτει διὰ
the-ones indeed having below the uterus incomplete egg bear because-of
τὴν πρότερον εἰρημένην αἰτίαν, τὰ δὲ καλούμενα σελάχη τῶν
the before said cause the but so-called selachians of-the

ἰχθύων ἐν αὑτοῖς μὲν ᾠοτοκεῖ τέλειον ᾠὸν ἔξω δὲ ζῳοτοκεῖ,
fish in themselves indeed lay complete egg outside but bear-live
πλὴν ἑνὸς ὃν καλοῦσι βάτραχον· οὗτος δ' ᾠοτοκεῖ θύραζε
except one which they-call fishing-frog this and lays outside
τέλειον ᾠὸν μόνος. Αἰτία δ' ἡ τοῦ σώματος φύσις· τήν
complete egg alone Cause and the of-the body nature the
τε γὰρ κεφαλὴν πολλαπλασίαν ἔχει τοῦ λοιποῦ σώματος,
both for head many-times has than-the rest body
καὶ ταύτην ἀκανθώδη καὶ σφόδρα τραχεῖαν. Διόπερ οὐδ'
and this spiny and very rough Wherefore neither
ὕστερον εἰσδέχεται τοὺς νεοττούς, οὐδ' ἐξ ἀρχῆς ζῳοτοκεῖ·
later receives the young nor from the-beginning bears-live
τὸ γὰρ μέγεθος καὶ ἡ τραχύτης τῆς κεφαλῆς ὥσπερ καὶ
the for size and the roughness of-the head just-as also
εἰσελθεῖν κωλύει, οὕτω καὶ ἐξελθεῖν. Ἐπεὶ δὲ μαλακόδερμόν
to-enter prevents so also to-come-out Since and soft-shelled
ἐστι τὸ ᾠὸν τὸ τῶν σελαχῶν (οὐ γὰρ δύνανται σκληρύνειν
is the egg the of-the selachians not for they-can to-harden
τὸ πέριξ· ψυχρότεροι γὰρ τῶν ὀρνίθων εἰσίν), τὸ τῶν
the around colder for than-the birds they-are the of-the
βατράχων ᾠὸν μόνον στερεόν ἐστι καὶ στιφρὸν πρὸς τὴν
fishing-frogs egg alone solid is and firm for the
ἔξω σωτηρίαν, τὰ δὲ τῶν ἄλλων ὑγρὰ καὶ μαλακὰ τὴν
outside preservation the but of-the others moist and soft in-the
φύσιν· σκεπάζεται γὰρ ἐντὸς τῷ σώματι τῷ τῆς ἐχούσης.
nature is-covered for inside by-the body the of-the bearing
Ἡ δὲ γένεσις ἐκ τοῦ ᾠοῦ τοῖς τε βατράχοις ἔξω
The and generation from the egg for-the both fishing-frogs outside
τελειουμένοις καὶ τοῖς ἐντὸς ἡ αὐτή, τούτοις δὲ καὶ τοῖς
being-completed and for-the inside the same for-these but and for-the
τῶν ὀρνίθων τῇ μὲν ὁμοία τῇ δὲ διάφορός ἐστιν.
of-the birds in-one-way indeed similar in-another and different is

Πρῶτον μὲν γὰρ οὐκ ἔχουσι τὸν ἕτερον ὀμφαλὸν τὸν εἰς
First indeed for not have the other navel the to
τὸ χόριον τείνοντα, ὅ ἐστιν ὑπὸ τὸ περιέχον ὄστρακον.
the chorion extending which is under the surrounding shell
Τούτου δ' αἴτιον ὅτι τὸ πέριξ ὄστρακον οὐκ ἔχουσιν.
Of-this and cause that the around shell not they-have
Οὐδὲν γὰρ αὐτοῖς χρήσιμον· σκεπάζει γὰρ ἡ μήτηρ, τὸ δ'
Nothing for for-them useful covers for the mother the and
ὄστρακόν ἐστι τοῖς ἐκτικτομένοις ᾠοῖς ἀλεώρα πρὸς τὰς
shell is for-the being-laid eggs shelter against the
θύραθεν βλάβας. Ἔπειθ' ἡ γένεσις ἐξ ἄκρου μέν ἐστι
outside harms Then the generation from tip indeed is
τοῦ ᾠοῦ καὶ τούτοις, ἀλλ' οὐχ ᾗ προσπέφυκε πρὸς τὴν
of-the egg also for-these but not where it-is-attached to the
ὑστέραν· οἱ γὰρ ὄρνιθες ἐκ τοῦ ὀξέος γίνονται, ταύτῃ δ' ἦν
uterus the for birds from the sharp-end come-to-be there and was
ἡ τοῦ ᾠοῦ πρόσφυσις. Αἴτιον δ' ὅτι τὸ μὲν τῶν ὀρνίθων
the of-the egg attachment Cause and that the indeed of-the birds
χωρίζεται τῆς ὑστέρας, τῶν δὲ τοιούτων οὐ πάντων ἀλλὰ
is-separated from-the uterus of-the and such not of-all but
τῶν πλείστων πρὸς τῇ ὑστέρᾳ προσπέφυκε τὸ ᾠὸν τέλειον.
of-the most to the uterus is-attached the egg complete
Ἐπ' ἄκρῳ δὲ γιγνομένου τοῦ ζῴου καταναλίσκεται τὸ
At tip and coming-to-be the animal is-used-up the
ᾠόν, ὥσπερ καὶ ἐπὶ τῶν ὀρνίθων καὶ τῶν ἄλλων
egg just-as also in-the-case-of the birds and the others
τῶν ἀπολελυμένων, καὶ τέλος πρὸς τῇ ὑστέρᾳ ὁ ὀμφαλὸς
the loosed and finally to the uterus the navel
προσπέφυκε τῶν ἤδη τελείων. Ὁμοίως δ' ἔχει καὶ ὅσων
is-attached of-the already complete Likewise and it-is also as-many-as
ἀπολέλυται τὰ ᾠὰ τῆς ὑστέρας· ἐνίοις γὰρ αὐτῶν, ὅταν
are-loosed the eggs from-the uterus in-some for of-them when

τέλειον γένηται τὸ ᾠόν, ἀπολύεται. Ἀπορήσειεν ἂν οὖν
complete become the egg it-is-loosed Would-be-puzzled — then
τις διὰ τί διαφέρουσιν αἱ γενέσεις τοῖς ὄρνισι κατὰ
someone because-of what differ the generations for-the birds in
τοῦτο καὶ τοῖς ἰχθύσιν. Αἴτιον δ' ὅτι τὰ μὲν τῶν ὀρνίθων
this and for-the fish Cause and that the indeed of-the birds
κεχωρισμένον ἔχει τὸ λευκὸν καὶ τὸ ὠχρόν, τὰ δὲ τῶν
separated has the white and the yellow the but of-the
ἰχθύων μονόχροα, καὶ πάντῃ μεμιγμένον τὸ τοιοῦτον, ὥστ'
fish one-colored and everywhere mixed the such so-that
οὐθὲν κωλύει ἐξ ἐναντίας ἔχειν τὴν ἀρχήν· οὐ γὰρ μόνον
nothing prevents from opposite to-have the principle not for only
κατὰ τὴν πρόσφυσίν ἐστι τοιοῦτον ἀλλὰ καὶ καταντικρύ,
at the attachment is such but also opposite
τὴν δὲ τροφὴν ῥᾷον ἕλκειν ἐκ τῆς ὑστέρας πόροις
the and nourishment easier to-draw from the uterus by-ducts
τισὶν ἀπὸ ταύτης τῆς ἀρχῆς. Δῆλον δ' ἐπὶ τῶν
some from this the principle Clear and in-the-case-of the
μὴ ἀπολυομένων ᾠῶν· ἐν ἐνίοις γὰρ τῶν σελαχῶν οὐκ
not loosed eggs in some for of-the selachians not
ἀπολύεται τῆς ὑστέρας τὸ ᾠόν, ἀλλ' ἐχόμενον μεταχωρεῖ
is-loosed from-the uterus the egg but held moves
κάτω πρὸς τὴν ζωοτοκίαν, ἐν οἷς τελεωθὲν τὸ ζῷον ἔχει
down toward the live-bearing in which completed the animal has
τὸν ὀμφαλὸν ἐκ τῆς ὑστέρας ἀνηλωμένου τοῦ ᾠοῦ.
the navel from the uterus used-up the egg
Φανερὸν οὖν ὅτι καὶ πρότερον ἔτεινον οἱ πόροι τοῦ
Evident then that also before stretched the ducts of-the
ᾠοῦ ἔτι ὄντος περὶ ἐκεῖνο πρὸς τὴν ὑστέραν. Τοῦτο δὲ
egg still being about that to the uterus This and
συμβαίνει, καθάπερ εἴπομεν, ἐν τοῖς γαλεοῖς τοῖς λείοις.
happens just-as we-said in the dogfish the smooth

Διαφέρει μὲν οὖν ἡ γένεσις κατὰ ταῦτα τῶν ἰχθύων
Differs indeed then the generation in these of-the fish
τοῖς ὄρνισι, καὶ διὰ τὰς εἰρημένας αἰτίας· τὰ δ'
from-the birds and because-of the said causes the but
ἄλλα συμβαίνει τὸν αὐτὸν τρόπον. Τόν τε γὰρ ὀμφαλὸν
other-things happen the same way The both for navel
ἔχουσι τὸν ἕτερον ὡσαύτως ὥσπερ οἱ ὄρνιθες πρὸς τὸ
they-have the other likewise just-as the birds to the
ὠχρόν, οὕτως οἱ ἰχθύες πρὸς τὸ ὅλον ᾠόν (οὐ γάρ ἐστιν
yellow so the fish to the whole egg not for is
αὐτοῦ τὸ μὲν λευκὸν τὸ δ' ὠχρόν, ἀλλὰ μονόχρων
of-it the indeed white the but yellow but one-colored
πᾶν), καὶ τρέφονται ἐκ τούτου, καταναλισκομένου τε
all and they-are-nourished from this being-used-up and
ἐπέρχεται καὶ περιφύεται ἡ σὰρξ ὁμοίως.
comes-on and grows-round the flesh likewise

IV · EGGS THAT GROW OUTSIDE

Most other fish lay incomplete eggs outside, which grow quickly from small, as leaven does, the solid moistened and the moist turned to breath by the soul's heat. They lay so because of their many young, for the uterus could not hold the growth of all, and many eggs perish outside, nature matching destruction by numbers. Some, such as the pipefish, burst from the size of their eggs, nature having given them size instead of number.

Περὶ μὲν οὖν τῶν ἐν αὑτοῖς μὲν ᾠοτοκούντων τέλειον ᾠὸν
About indeed then the in themselves indeed laying-eggs complete egg
θύραζε δὲ ζῳοτοκούντων τοῦτον ἔχει τὸν τρόπον ἡ γένεσις,
outside but bearing-live this has the way the generation
οἱ δὲ πλεῖστοι τῶν ἄλλων ἰχθύων ἐκτὸς ᾠοτοκοῦσιν,
the and most of-the other fish outside lay-eggs

ἀτελὲς δ᾽ ᾠὸν πάντες πλὴν βατράχου· περὶ δὲ τούτου τὸ
incomplete but egg all except fishing-frog about and this the
αἴτιον εἴρηται πρότερον. Εἴρηται δὲ καὶ περὶ τῶν ἀτελῆ
cause has-been-said before Has-been-said and also about the incomplete
τικτόντων τὸ αἴτιον. Ἡ δὲ γένεσις καὶ τούτων ἡ μὲν
bearing the cause The and generation also of-these the-one indeed
ἐκ τοῦ ᾠοῦ τὸν αὐτὸν ἔχει τρόπον ὅνπερ καὶ τῶν σελαχῶν
from the egg the same has way which-very also of-the selachians
τῶν ἐντὸς ᾠοτοκούντων, πλὴν ἥ γ᾽ αὔξησις ταχεῖα καὶ
of-the inside laying-eggs except the at-least growth quick and
ἐκ μικρῶν, καὶ τὸ ἔσχατον τοῦ ᾠοῦ σκληρότερον. Ἡ δὲ
from small and the outermost of-the egg harder The and
τοῦ ᾠοῦ αὔξησις ὁμοία τοῖς σκώληξίν ἐστιν· καὶ γὰρ τὰ
of-the egg growth like to-the larvae is and for the
σκωληκοτοκοῦντα τῶν ζῴων μικρὸν ἀποτίκτει τὸ πρῶτον,
larva-bearing of-the animals small lay the first
τοῦτο δ᾽ αὐξάνεται δι᾽ αὑτοῦ καὶ οὐ διὰ πρόσφυσιν
this and grows through itself and not because-of attachment
οὐδεμίαν. Τὸ δ᾽ αἴτιον παραπλήσιον ὅπερ ἐπὶ τῆς
any The and cause similar which-very in-the-case-of the
ζύμης· καὶ γὰρ ἡ ζύμη ἐκ μικρᾶς μεγάλη γίνεται τοῦ μὲν
leaven and for the leaven from small great becomes the indeed
στερεωτέρου ὑγραινομένου, τοῦ δ᾽ ὑγροῦ πνευματουμένου.
more-solid being-liquefied the but moist becoming-breath
Δημιουργεῖ δὲ τοῦτο ἡ τοῦ ψυχικοῦ θερμοῦ φύσις ἐν τοῖς
Fashions and this the of-the soul hot nature in the
ζῴοις, ἐν δὲ ταῖς ζύμαις ἡ τοῦ χυμοῦ τοῦ συγκραθέντος
animals in and the leavens the of-the juice the mixed
θερμότης. Αὐξάνεται μὲν οὖν τὰ ᾠὰ ἐξ ἀνάγκης μὲν
heat Grow indeed then the eggs from necessity indeed
διὰ ταύτην τὴν αἰτίαν (ἔχει γὰρ περίττωμα ζυμῶδες),
because-of this the cause it-has for residue leaven-like

χάριν δὲ τοῦ βελτίονος· ἐν ταῖς ὑστέραις γὰρ ἀδύνατον
for-the-sake and of-the better in the uteri for impossible
αὐτοῖς λαμβάνειν ὅλην τὴν αὔξησιν διὰ τὴν τῶν ζῴων
for-them to-take whole the growth because-of the of-the animals
πολυτοκίαν τούτων. Διὰ τοῦτο γὰρ καὶ μικρὰ πάμπαν
prolificness of-these Because-of this for also small altogether
ἀποκρίνεται καὶ ταχεῖαν λαμβάνει τὴν αὔξησιν, μικρὰ μὲν
are-secreted and quick take the growth small indeed
διὰ τὸ στενοχωρῆ τὴν ὑστέραν εἶναι πρὸς τὸ πλῆθος τῶν
because-of the narrow the uterus to-be for the quantity of-the
ᾠῶν, ταχὺ δ' ὅπως μὴ χρονιζόντων ἐν τῇ γενέσει περὶ τὴν
eggs quick but so-that not delaying in the generation about the
αὔξησιν φθείρηται τὸ γένος, ἐπεὶ καὶ νῦν τὰ πολλὰ φθείρεται
growth be-destroyed the kind since even now the many are-destroyed
τῶν ἐκτικτομένων κυημάτων· διόπερ πολύγονόν ἐστι τὸ
of-the being-laid fetuses wherefore prolific is the
γένος τὸ τῶν ἰχθύων· ἀναμάχεται γὰρ ἡ φύσις τῷ πλήθει
kind the of-the fish fights-back for the nature by-the quantity
τὴν φθοράν. Εἰσὶ δέ τινες οἳ διαρρήγνυνται τῶν ἰχθύων,
the destruction There-are and some who burst of-the fish
οἷον ἡ καλουμένη βελόνη, διὰ τὸ μέγεθος τῶν ᾠῶν αὕτη
such-as the so-called pipefish because-of the size of-the eggs this
γὰρ ἀντὶ τοῦ πολλὰ μεγάλα τὰ κυήματα ἴσχει· τοῦ γὰρ
for instead-of the many large the fetuses has of-the for
πλήθους ἡ φύσις ἀφελοῦσα προσέθηκε πρὸς τὸ μέγεθος.
quantity the nature having-taken-away added to the size

The selachians, laying eggs within before bearing live, show that fish lay eggs. Some say all fish but the selachians are female, misled by their many eggs, yet males have milt organs and females uteri in all but the erythrinus and channa, as the long-coupling cephalopods and crustaceans show. Females lay little by little and males sprinkle the eggs; quick coupling misleads fishermen into saying females swallow the milt, though the mouth leads to the belly, not the uterus.

Ὅτι μὲν οὖν αὐξάνεταί τε καὶ δι᾽ ἣν αἰτίαν τὰ
That indeed then grow both and because-of which cause the
τοιαῦτα τῶν ᾠῶν, εἴρηται· ὅτι δ᾽ ᾠοτοκοῦσι καὶ οὗτοι
such of-the eggs it-has-been-said that but lay-eggs also these
οἱ ἰχθύες, σημεῖον τὸ καὶ τοὺς ζωοτοκοῦντας τῶν ἰχθύων,
the fish sign the also the live-bearing of-the fish
οἷον τὰ σελάχη, ᾠοτοκεῖν ἐν αὑτοῖς πρῶτον. Δῆλον γὰρ
such-as the selachians to-lay-eggs in themselves first Clear for
ὅτι τὸ γένος ὅλον ἐστὶν ᾠοτόκον τὸ τῶν ἰχθύων, τέλος
that the kind whole is egg-laying the of-the fish end
μέντοι οὐθὲν λαμβάνει τῶν τοιούτων ᾠῶν, ὅσων ἐστὶ
however none takes of-the such eggs of-as-many-as is
τὸ μὲν θῆλυ τὸ δ᾽ ἄρρεν καὶ γίγνονται ἐξ ὀχείας, ἐὰν
the indeed female the and male and they-come-to-be from copulation if
μὴ ἐπιρράνῃ ὁ ἄρρην τὸν θορόν. Εἰσὶ δέ τινες οἵ φασι
not sprinkle the male the milt There-are and some who say
πάντας εἶναι τοὺς ἰχθῦς θήλεις ἔξω τῶν σελαχῶν, οὐκ
all to-be the fish females except the selachians not
ὀρθῶς λέγοντες. Οἴονται γὰρ διαφέρειν τῶν νομιζομένων
correctly speaking They-think for to-differ from-the reputed
ἀρρένων τοὺς θήλεις αὐτῶν ὥσπερ τῶν φυτῶν, ἐν ὅσοις
males the females of-them just-as of-the plants in as-many-as
τὸ μὲν καρποφορεῖ τὸ δ᾽ ἄκαρπόν ἐστιν, οἷον ἐλάα
the-one indeed bears-fruit the-other and fruitless is such-as olive

καὶ κότινος καὶ συκῆ καὶ ἐρινεός. Ὁμοίως δὲ καὶ τοὺς
and wild-olive and fig and wild-fig Likewise and also the
ἰχθῦς πλὴν τῶν σελαχῶν· τούτοις γὰρ οὐκ ἀμφισβητοῦσιν.
fish except the selachians about-these for not they-dispute
Καίτοι ὡσαύτως τε διάκεινται οἱ ἄρρενες περὶ τὰ θορικὰ
And-yet likewise both are-disposed the males about the milt-organs
οἵ τε σελαχώδεις καὶ οἱ ἐν τῷ γένει τῷ τῶν ᾠοτόκων,
the both selachian and the in the kind the of-the egg-laying
καὶ σπέρμα κατὰ τὴν ὥραν φαίνεται ἀμφοῖν ἐκθλιβόμενον.
and seed at the season appears of-both being-squeezed-out
Ἔχουσι δὲ καὶ ὑστέρας αἱ θήλειαι. Ἔδει δ' οὐ
Have and also uteri the females It-would-be-needful but not
μόνον τοὺς ᾠοτοκοῦντας ἀλλὰ καὶ τοὺς ἄλλους ἔχειν μέν,
only the egg-laying but also the others to-have indeed
ἀλλὰ διαφερούσας τῶν ᾠοτοκούντων, ὥσπερ αἱ ἡμίονοι
but differing from-the egg-laying just-as the she-mules
ἐν τῷ γένει τῶν λοφούρων, εἴπερ ἦν θῆλυ τὸ γένος πᾶν,
in the kind of-the bushy-tailed if-indeed were female the kind all
ἀλλ' ἄτεκνοί τινες αὐτῶν. Νῦν δ' οἱ μὲν ἔχουσι θορικὰ
but childless some of-them Now but the-ones indeed have milt-organs
οἱ δ' ὑστέρας, καὶ ἐν ἅπασιν ἔξω δυοῖν, ἐρυθρίνου καὶ
the-others and uteri and in all except two erythrinus and
χάννης, αὕτη ἐστὶν ἡ διαφορά· οἱ μὲν γὰρ θορικὰ
channa this is the difference the-ones indeed for milt-organs
ἔχουσιν, οἱ δ' ὑστέρας. Ἡ δ' ἀπορία δι' ἣν
have the-others and uteri The and puzzle because-of which
οὕτως ὑπολαμβάνουσιν, εὔλυτος τὸ συμβαῖνον ἀκούσασιν.
so they-suppose easily-solved the happening to-those-having-heard
Οὐθὲν γὰρ τῶν ὀχευομένων πολλά φασι τίκτειν, λέγοντες
Nothing for of-the copulating many they-say to-bear saying
ὀρθῶς· ὅσα γὰρ ἐξ αὑτῶν γεννᾷ τέλεια ἢ ζῷα
correctly as-many-as for from themselves generate complete either animals

ἢ ᾠά, οὐ πολυτοκεῖ οὕτως ὥσπερ οἱ ᾠοτοκοῦντες τῶν
or eggs not are-prolific so just-as the egg-laying of-the
ἰχθύων· ἄπλετον γάρ τι τούτων πλῆθος τῶν ᾠῶν ἐστίν.
fish immense for some of-these quantity of-the eggs is
Ἀλλὰ τοῦτο οὐχὶ συνεωράκεσαν, ὅτι οὐχ ὁμοιοτρόπως
But this not they-had-observed that not similarly
τοῖς τῶν ὀρνίθων ἔχει τὰ περὶ τὰ ᾠὰ τῶν ἰχθύων.
to-the of-the birds have the about the eggs of-the fish
Οἱ μὲν γὰρ ὄρνιθες καὶ τῶν τετραπόδων ὅσα ᾠοτοκεῖ,
The indeed for birds and of-the quadrupeds as-many-as lay-eggs
καὶ εἴ τινα τῶν σελαχωδῶν, τέλειον ᾠὸν γεννῶσι, καὶ
and if any of-the selachians complete egg generate and
οὐ λαμβάνει ἐξελθὸν αὔξησιν· οἱ δ' ἰχθύες ἀτελῆ, καὶ
not takes having-come-out growth the but fish incomplete and
λαμβάνει θύραζε τὰ ᾠὰ τὴν αὔξησιν. Ἔτι καὶ ἐπὶ
take outside the eggs the growth Further also in-the-case-of
τῶν μαλακίων τὸν αὐτὸν ἔχει τρόπον καὶ ἐπὶ τῶν
the cephalopods the same it-has way and in-the-case-of the
μαλακοστράκων, ἃ καὶ συνδυαζόμενα ὁρᾶται διὰ τὸ
crustaceans which also coupling are-seen because-of the
χρόνιον εἶναι τὸν συνδυασμὸν αὐτῶν· καὶ τούτων φανερόν
long to-be the coupling of-them and of-these evident
ἐστι τὸ μὲν ἄρρεν ὄν, τὸ δ' ἔχον ὑστέραν. Ἄτοπον δὲ
is the-one indeed male being the-other and having uterus Strange and
καὶ τὸ μὴ ἐν παντὶ γένει ταύτην εἶναι τὴν δύναμιν, ὥσπερ
also the not in every kind this to-be the power just-as
ἐν τοῖς ζωοτόκοις τὸ μὲν ἄρρεν τὸ δὲ θῆλυ. Αἴτιον δὲ
in the live-bearing the-one indeed male the-other and female Cause and
τοῖς ἐκείνως λέγουσι τῆς ἀγνοίας τὸ τὰς διαφορὰς μὴ δήλας
for-those so saying of-the ignorance the the differences not clear
εἶναι παντοδαπὰς οὔσας περί τε τὰς ὀχείας τῶν ζῴων καὶ
to-be of-every-kind being about both the copulations of-the animals and

τὰς γενέσεις, ἀλλ᾽ ἐξ ὀλίγου θεωροῦντας οἴεσθαι δεῖν
the generations but from little studying to-think to-be-needful
ἔχειν ὁμοίως ἐπὶ πάντων. Διὸ καὶ οἱ λέγοντες τὰς
to-be likewise in-the-case-of all Wherefore also the saying the
κυήσεις εἶναι ἐκ τοῦ ἀνακάπτειν τὸ σπέρμα τοὺς θήλεις
conceptions to-be from the to-swallow the seed the females
τῶν ἰχθύων, οὐ κατανενοηκότες ἔνια λέγουσιν οὕτως.
of-the fish not having-observed some speak so
Ὑπὸ τὸν αὐτὸν γὰρ καιρὸν οἵ τ᾽ ἄρρενες τὸν θορὸν καὶ αἱ
At the same for season the both males the milt and the
θήλειαι τὰ ᾠὰ ἔχουσι, καὶ ὅσῳ ἂν ᾖ ἐγγυτέρω ἡ θήλεια
females the eggs have and by-as-much-as — be nearer the female
τοῦ τίκτειν, τότε πλείων καὶ ὑγρότερος ὁ θορὸς ἐν τῷ ἄρρενι
to-the to-lay then more and moister the milt in the male
ἐγγίνεται. Καὶ ὥσπερ ἡ αὔξησις κατὰ τὸν αὐτὸν χρόνον τοῦ
arises And just-as the growth at the same time of-the
θοροῦ ἐν τῷ ἄρρενι καὶ τοῦ ᾠοῦ ἐν τῇ θηλείᾳ, οὕτω καὶ ἡ
milt in the male and of-the egg in the female so also the
ἄφεσις συμβαίνει· οὔτε γὰρ αἱ θήλειαι ἀθρόα ἐκτίκτουσιν,
release happens neither for the females all-at-once lay
ἀλλὰ κατὰ μικρόν, οὔθ᾽ οἱ ἄρρενες ἀθρόον ἀφιᾶσι τὸν θορόν.
but by little nor the males all-at-once release the milt
Καὶ ταῦτα πάντα συμβαίνει κατὰ λόγον. Ὥσπερ γὰρ καὶ
And these all happen according-to reason Just-as for also
τὸ τῶν ὀρνέων γένος ἐν ἐνίοις ἴσχει μὲν ᾠὰ ἄνευ κυήσεως,
the of-the birds kind in some has indeed eggs without conception
ὀλίγα δὲ καὶ ὀλιγάκις, ἀλλ᾽ ἐξ ὀχείας τὰ πολλά, τοῦτ᾽
few but and seldom but from copulation the many this
αὐτὸ συμβαίνει καὶ ἐπὶ τῶν ἰχθύων, ἧττον δέ. Ἄγονα
same happens also in-the-case-of the fish less but Infertile

δὲ καὶ ἀμφοτέροις γίνεται τὰ αὐτόματα, ἐὰν μὴ ἐπιρράνῃ
and also in-both become the spontaneous if not sprinkle
τὸ ἄρρεν, ἐν ὅσοις γένεσιν αὐτῶν καὶ τὸ ἄρρεν ἐστίν.
the male in as-many-as kinds of-them also the male is
Τοῖς μὲν οὖν ὄρνισι, διὰ τὸ τέλεια ἐξιέναι τὰ ᾠά, ἔτι
For-the indeed then birds because-of the complete to-come-out the eggs still
ἐντὸς ὄντων ἀνάγκη τοῦτο συμβῆναι· τοῖς δ' ἰχθύσι διὰ
inside being necessary this to-happen for-the but fish because-of
τὸ ἀτελῆ καὶ ἔξω λαμβάνειν τὴν αὔξησιν πᾶσιν, κἂν
the incomplete and outside to-take the growth in-all even-if
ἐξ ὀχείας γένηται τὸ ᾠόν, ὅμως τὰ ἔξω ἐπιρραινόμενα
from copulation come-to-be the egg nevertheless the outside sprinkled
σώζεται, καὶ ἐνταῦθα ἀναλίσκεται ὁ θορὸς τοῖς ἄρρεσιν.
are-preserved and there is-used-up the milt in-the males
Διὸ καὶ συγκαταβαίνει ἐλαττούμενος ἅμα τοῖς
Wherefore also it-goes-down-with diminishing together-with the
ᾠοῖς τοῖς ἐν τοῖς θήλεσιν· ἀεὶ γὰρ τοῖς ἐκτικτομένοις
eggs the in the females always for on-the being-laid
ἐπιρραίνουσι παρακολουθοῦντες. Ὥστε ἄρρενες μὲν καὶ
they-sprinkle following-closely So-that males indeed and
θήλεις εἰσὶ καὶ ὀχεύονται πάντες, εἰ μὴ ἔν τινι γένει
females are and copulate all if not in some kind
ἀδιόριστόν ἐστι τὸ θῆλυ καὶ τὸ ἄρρεν, καὶ ἄνευ τῆς τοῦ
undistinguished is the female and the male and without the of-the
ἄρρενος γονῆς οὐ γίνεται τῶν τοιούτων οὐθέν. Συμβάλλεται
male semen not comes-to-be of-the such anything Contributes
δὲ πρὸς τὴν ἀπάτην αὐτοῖς καὶ τὸ ταχὺν εἶναι τὸν
and to the deception for-them also the quick to-be the
συνδυασμὸν τῶν τοιούτων ἰχθύων, ὥστε πολλοὺς λανθάνειν
coupling of-the such fish so-that many to-escape-notice

καὶ τῶν ἁλιέων· οὐθεὶς γὰρ αὐτῶν οὐθὲν τηρεῖ τοιοῦτον τοῦ
and of-the fishermen none for of-them anything watches such of-the
γνῶναι χάριν. Ἀλλ᾽ ὅμως ὠμμένος ὁ συνδυασμός ἐστιν.
to-know for-the-sake But nevertheless seen the coupling is
Τὸν αὐτὸν γὰρ τρόπον οἵ τε δελφῖνες ὀχεύονται
The same for way the both dolphins copulate
παραπίπτοντες καὶ οἱ ἰχθύες, ὅσοις ἐμποδίζει τὸ οὐραῖον.
falling-alongside and the fish whom hinders the tail
Ἀλλὰ τῶν μὲν δελφίνων χρονιωτέρα ἡ ἀπόλυσίς ἐστι, τῶν
But of-the indeed dolphins longer the release is of-the
δὲ τοιούτων ἰχθύων ταχεῖα. Διόπερ ταύτην οὐχ ὁρῶντες,
but such fish quick Wherefore this not seeing
τὰς δ᾽ ἀνακάψεις τοῦ θοροῦ καὶ τῶν ᾠῶν, καὶ οἱ ἁλιεῖς
the but swallowings of-the milt and of-the eggs also the fishermen
περὶ τῆς κυήσεως τῶν ἰχθύων τὸν εὐήθη λέγουσι λόγον
about the conception of-the fish the simple-minded tell story
καὶ τεθρυλημένον, ὅνπερ καὶ Ἡρόδοτος ὁ μυθολόγος, ὡς
and much-repeated which-very also Herodotus the story-teller that
κυϊσκομένων τῶν ἰχθύων ἐκ τοῦ ἀνακάπτειν τὸν θορόν,
being-impregnated the fish from the to-swallow the milt
οὐ συνορῶντες ὅτι τοῦτ᾽ ἐστὶν ἀδύνατον. Ὁ γὰρ πόρος
not observing that this is impossible The for duct
ὁ διὰ τοῦ στόματος εἰσιὼν εἰς τὴν κοιλίαν φέρει,
the through the mouth entering into the belly leads
ἀλλ᾽ οὐκ εἰς τὰς ὑστέρας· καὶ τὸ μὲν εἰς τὴν κοιλίαν
but not into the uteri and the indeed into the belly
ἐλθὸν ἀνάγκη τροφὴν γίνεσθαι (καταπέττεται γάρ), αἱ
having-come necessary nourishment to-become it-is-digested for the
δ᾽ ὑστέραι φαίνονται πλήρεις ᾠῶν, ἃ πόθεν εἰσῆλθεν.
but uteri appear full of-eggs which whence entered

Anaxagoras and other physicists say, without examination, that ravens and the ibis couple by the mouth and the weasel bears young by it. But ravens are seen billing more than mating, being infrequent breeders, and no one asks how semen could reach the uterus through the belly, which concocts all it receives. These birds have uteri, and the weasel merely carries its tiny young in its mouth. Those who say, as Herodorus does of the trochus, that it and the hyena have both genitals mistake a line under the hyena's tail for a female organ.

Ὁμοίως δὲ καὶ περὶ τὴν τῶν ὀρνίθων γένεσιν ἔχει. Εἰσὶ
Likewise and also about the of-the birds generation it-is There-are
γάρ τινες οἳ λέγουσι κατὰ τὸ στόμα μίγνυσθαι τούς τε
for some who say by the mouth to-mix the both
κόρακας καὶ τὴν ἶβιν, καὶ τῶν τετραπόδων τίκτειν κατὰ
ravens and the ibis and of-the quadrupeds to-bear by
τὸ στόμα τὴν γαλῆν. Ταῦτα γὰρ καὶ Ἀναξαγόρας καὶ
the mouth the weasel These-things for both Anaxagoras and
τῶν ἄλλων τινὲς φυσικῶν λέγουσι, λίαν ἁπλῶς καὶ
of-the other some natural-philosophers say very simply and
ἀσκέπτως λέγοντες, περὶ μὲν οὖν τῶν ὀρνίθων ἐκ
without-examination speaking about indeed then the birds from
συλλογισμοῦ διαψευδόμενοι τῷ τὴν μὲν ὀχείαν ὀλιγάκις
reasoning being-deceived by-the the indeed copulation seldom
ὁρᾶσθαι τὴν τῶν κοράκων, τὴν δὲ τοῖς ῥύγχεσι πρὸς
to-be-seen the of-the ravens the but with-the beaks with
ἄλληλα κοινωνίαν πολλάκις, ἣν πάντα ποιεῖται τὰ
one-another communion often which all make the
κορακώδη τῶν ὀρνέων· δῆλον δὲ τοῦτο ἐπὶ τῶν
raven-like of-the birds clear and this in-the-case-of the
τιθασευομένων κολοιῶν. Τὸ δ' αὐτὸ τοῦτο ποιεῖ καὶ τὸ
tamed jackdaws The and same this does also the

τῶν περιστερῶν γένος· ἀλλὰ διὰ τὸ καὶ ὀχευόμενα
of-the pigeons kind but because-of the also mounting
φαίνεσθαι, διὰ τοῦτο ταύτης οὐ τετυχήκασι τῆς φήμης.
to-appear because-of this this not they-have-met the report
Τὸ δὲ κορακῶδες γένος οὐκ ἔστιν ἀφροδισιαστικόν (ἔστι
The but raven-like kind not is lustful it-is
γὰρ τῶν ὀλιγογόνων), ἐπεὶ ὤπταί γ' ἤδη καὶ τοῦτο
for of-the few-bearing since it-has-been-seen at-least already also this
ὀχευόμενον. Τὸ δὲ δὴ μὴ συλλογίζεσθαι πῶς εἰς τὰς
mounting The but indeed not to-reason how into the
ὑστέρας ἀφικνεῖται τὸ σπέρμα διὰ τῆς κοιλίας πεττούσης
uteri arrives the seed through the belly concocting
ἀεὶ τὸ ἐγγινόμενον, καθάπερ τὴν τροφήν, ἄτοπον.
always the coming-in just-as the nourishment strange
Ὑστέρας δ' ἔχουσι καὶ ταῦτα τὰ ὄρνεα, καὶ ᾠὰ φαίνεται
Uteri and have also these the birds and eggs appear
πρὸς τοῖς ὑποζώμασιν. Καὶ ἡ γαλῆ, καθάπερ τἆλλα
at the diaphragms And the weasel just-as the-other
τετράποδα, τὸν αὐτὸν τρόπον ἔχει ἐκείνοις τὰς ὑστέρας·
quadrupeds the same way has to-those the uteri
ἐξ ὧν εἰς τὸ στόμα πῇ βαδιεῖται τὸ ἔμβρυον; Ἀλλὰ
from which into the mouth how will-go the embryo But
διὰ τὸ τίκτειν πάμπαν μικρὰ τὴν γαλῆν, καθάπερ καὶ
because-of the to-bear altogether small the weasel just-as also
τἆλλα τὰ σχιζόποδα, περὶ ὧν ὕστερον ἐροῦμεν, τῷ
the-other the split-footed about which later we-shall-speak with-the
δὲ στόματι πολλάκις μεταφέρειν τοὺς νεοττούς, ταύτην
and mouth often to-carry the young this
πεποίηκε τὴν δόξαν. Εὐηθικῶς δὲ καὶ λίαν διεψευσμένοι
has-made the opinion Simple-mindedly and also very deceived
καὶ οἱ περὶ τρόχου καὶ ὑαίνης λέγοντες. Φασὶ γὰρ
also those about trochus and hyena speaking They-say for

τὴν μὲν ὕαιναν πολλοί, τὸν δὲ τρόχον Ἡρόδωρος ὁ
the indeed hyena many the and trochus Herodorus the
Ἡρακλεώτης, δύο αἰδοῖα ἔχειν, ἄρρενος καὶ θήλεος, καὶ τὸν
Heracleot two genitals to-have of-male and of-female and the
μὲν τρόχον αὐτὸν αὑτὸν ὀχεύειν, τὴν δ' ὕαιναν ὀχεύειν καὶ
indeed trochus it-itself itself to-mount the but hyena to-mount and
ὀχεύεσθαι παρ' ἔτος. Ὤπται γὰρ ἡ ὕαινα ἓν ἔχουσα
to-be-mounted in-alternate year Has-been-seen for the hyena one having
αἰδοῖον· ἐν ἐνίοις γὰρ τόποις οὐ σπάνις τῆς θεωρίας· ἀλλ'
genital in some for places not scarcity of-the observation but
ἔχουσιν αἱ ὕαιναι ὑπὸ τὴν κέρκον ὁμοίαν γραμμὴν τῷ
have the hyenas under the tail like line to-the
τοῦ θήλεος αἰδοίῳ. Ἔχουσι μὲν οὖν καὶ οἱ ἄρρενες καὶ
of-the female genital Have indeed then both the males and
αἱ θήλειαι τὸ τοιοῦτον σημεῖον, ἀλλ' ἁλίσκονται οἱ ἄρρενες
the females the such mark but are-caught the males
μᾶλλον· διὸ τοῖς ἐκ παρόδου θεωροῦσι ταύτην ἐποίησε
more wherefore to-those in passing observing this made
τὴν δόξαν. Ἀλλὰ περὶ μὲν τούτων ἅλις τὰ εἰρημένα.
the opinion But about indeed these enough the said

Why are the selachians never seen to lay eggs or shed milt, while the other fish are? Because they are not many-seeded. The milt of egg-laying fish is spent on making the laid eggs grow, as bird eggs are completed inside and fish eggs outside. Wind-eggs become fertile, and a first male's eggs take the nature of a later one, if mounting comes before the white separates. A wind-egg is complete as a plant's fetus and incomplete as an animal's, for it lacks perception; an egg from mating is distinguished into white and yolk and holds both principles.

Περὶ δὲ τῆς τῶν ἰχθύων γενέσεως ἀπορήσειεν ἄν τις
About and the of-the fish generation would-be-puzzled — someone
διὰ τίνα ποτὲ αἰτίαν τῶν μὲν σελαχωδῶν οὔθ'
because-of what ever cause of-the indeed selachians neither
αἱ θήλειαι τὰ κυήματα οὔθ' οἱ ἄρρενες ἀπορραίνοντες
the females the fetuses nor the males sprinkling-off
ὁρῶνται τὸν θορόν, τῶν δὲ μὴ ζῳοτόκων καὶ αἱ θήλειαι
are-seen the milt of-the but not live-bearing both the females
τὰ ᾠὰ καὶ οἱ ἄρρενες τὸν θορόν. Αἴτιον δ' ὅτι τὸ γένος
the eggs and the males the milt Cause and that the kind
οὐ πολύσπερμον ὅλως τὸ τῶν σελαχωδῶν. Καὶ ἔτι αἵ
not many-seeded at-all the of-the selachians And further the
γε θήλειαι πρὸς τῷ διαζώματι τὰς ὑστέρας ἔχουσιν. Τὰ
at-least females at the diaphragm the uteri have The
γὰρ ἄρρενα τῶν ἀρρένων καὶ τὰ θήλεα τῶν θηλειῶν
for males than-the males and the females than-the females
ὁμοίως διαφέρουσιν· ὀλιγοχούστεροι γὰρ πρὸς τὴν γονὴν
likewise differ having-less-fluid for as-to the semen
οἱ σελαχώδεις εἰσίν. Τὸ δ' ἄρρεν γένος ἐν τοῖς ᾠοτόκοις
the selachians are The and male kind in the egg-laying
καθάπερ αἱ θήλειαι τὰ ᾠὰ διὰ πλῆθος ἀποτίκτουσιν,
just-as the females the eggs because-of quantity lay

οὕτως ἐκεῖνοι ἀπορραίνουσιν. Πλείω γὰρ ἔχουσι θορὸν ἢ
so they sprinkle-off More for they-have milt than
ὅσον πρὸς τὴν ὀχείαν ἱκανόν· μᾶλλον γὰρ βούλεται ἡ
as-much-as for the copulation sufficient rather for wishes the
φύσις δαπανᾶν τὸν θορὸν πρὸς τὸ συναύξειν τὰ ᾠά, ὅταν
nature to-spend the milt for the to-grow-together the eggs when
ἀποτέκῃ ἡ θήλεια, ἢ πρὸς τὴν ἐξ ἀρχῆς σύστασιν.
lay the female than for the from beginning constitution
Καθάπερ γὰρ ἔν τε τοῖς ἄνω καὶ τοῖς ὑπογύοις εἴρηται
Just-as for in both the above and the just-preceding it-has-been-said
λόγοις, τὰ μὲν τῶν ὀρνέων ᾠὰ τελεοῦται ἐντός, τὰ
discourses the indeed of-the birds eggs are-completed inside the
δὲ τῶν ἰχθύων ἐκτός. Τρόπον γάρ τινα ἔοικε τοῖς
but of-the fish outside In-a-way for some they-resemble the
σκωληκοτοκοῦσιν· ἔτι γὰρ ἀτελέστερον προΐεται τὸ κύημα
larva-bearing still for more-incomplete emit the fetus
τὰ σκωληκοτόκα τῶν ζῴων. Ἀμφοτέροις δὲ τὴν τελείωσιν
the larva-bearing of-the animals For-both and the completion
καὶ τοῖς τῶν ὀρνίθων ᾠοῖς καὶ τοῖς τῶν ἰχθύων ποιεῖ τὸ
both for-the of-the birds eggs and for-the of-the fish makes the
ἄρρεν, ἀλλὰ τοῖς μὲν τῶν ὀρνίθων ἐντός (τελεοῦται γὰρ
male but for-the indeed of-the birds inside they-are-completed for
ἐντός), τοῖς δὲ τῶν ἰχθύων ἐκτὸς διὰ τὸ ἔξω προΐεσθαι
inside for-the but of-the fish outside because-of the outside to-be-emitted
ἀτελές, ἐπεὶ συμβαίνει γε ἐπ' ἀμφοτέρων ταὐτόν.
incomplete since it-happens at-least in-the-case-of both the-same
Τῶν μὲν οὖν ὀρνίθων τά τε ὑπηνέμια γίνεται γόνιμα, καὶ
Of-the indeed then birds the both wind-eggs become fertile and
τὰ προωχευμένα ὑφ' ἑτέρου γένους τῶν ἀρρένων μεταβάλλει
the previously-mounted by another kind of-the males change
τὴν φύσιν εἰς τὸν ὕστερον ὀχεύοντα. Καὶ τὰ οἰκεῖα δὲ
the nature into the later mounting-one Also the own and

ἀναύξητα ὄντα, ἂν διαλείπῃ τὴν ὀχείαν, ὅταν ὀχευθῇ
unincreased being if it-leave-off the copulation when it-be-mounted
πάλιν, ποιεῖ ταχεῖαν λαμβάνειν τὴν αὔξησιν, οὐ μέντοι
again makes quick to-take the growth not however
κατὰ πάντα τὸν χρόνον, ἀλλ' ἐάνπερ πρότερον γένηται
at all the time but if-indeed earlier come-about
ἡ ὀχεία πρὶν μεταβάλλειν εἰς τὴν τοῦ λευκοῦ ἀπόκρισιν.
the copulation before to-change into the of-the white separation
Τοῖς δὲ τῶν ἰχθύων οὐθὲν ὥρισται τοιοῦτον, ἀλλὰ
For-the but of-the fish nothing has-been-determined such but
πρὸς τὸ σώζεσθαι ταχέως ἀπορραίνουσιν οἱ ἄρρενες. Αἴτιον
for the to-be-preserved quickly sprinkle-off the males Cause
δ' ὅτι οὐ δίχροα ταῦτα· διόπερ οὐχ ὥρισται τοιοῦτος
and that not two-colored these wherefore not has-been-determined such
καιρὸς τούτοις οἷος ἐπὶ τῶν ὀρνίθων. Τοῦτο δὲ
season for-these as in-the-case-of the birds This and
συμβέβηκεν εὐλόγως· ὅταν γὰρ τὸ λευκὸν ἀφωρισμένον ᾖ
has-happened reasonably when for the white separated be
καὶ τὸ ὠχρὸν ἀπ' ἀλλήλων, ἔχει ἤδη τὴν ἀπὸ τοῦ ἄρρενος
and the yellow from one-another it-has already the from the male
ἀρχήν· εἰς ταύτην γὰρ συμβάλλεται τὸ ἄρρεν. Τὰ μὲν
principle to this for contributes the male The indeed
οὖν ὑπηνέμια λαμβάνει τὴν γένεσιν μέχρι τοῦ ἐνδεχομένου
then wind-eggs take the generation up-to the possible
αὐτοῖς. Τελεωθῆναι μὲν γὰρ εἰς ζῷον ἀδύνατον (δεῖ
for-them To-be-completed indeed for into animal impossible there-is-need
γὰρ αἰσθήσεως), τὴν δὲ θρεπτικὴν δύναμιν τῆς ψυχῆς
for of-perception the but nutritive power of-the soul
ἔχει καὶ τὰ θήλεα καὶ τὰ ἄρρενα καὶ πάντα τὰ ζῶντα,
have both the females and the males and all the living
καθάπερ εἴρηται πολλάκις· διόπερ αὐτοῦ τὸ ᾠὸν ὡς
just-as has-been-said often wherefore of-it the egg as

μὲν φυτοῦ κύημα τέλειόν ἐστιν, ὡς δὲ ζῴου ἀτελές. Εἰ
indeed of-plant fetus complete is as but of-animal incomplete If
μὲν οὖν μὴ ἐνῆν ἄρρεν ἐν τῷ γένει αὐτῶν, ἐγίγνετ᾽
indeed then not were-in male in the kind of-them it-would-come-to-be
ἂν ὥσπερ καὶ ἐπὶ τῶν ἰχθύων, εἴπερ ἔστι τι
— *just-as also in-the-case-of the fish if-indeed there-is some*
τοιοῦτον γένος οἷον ἄνευ ἄρρενος γεννᾶν· εἴρηται δὲ
such kind as without male to-generate it-has-been-said and
περὶ αὐτῶν καὶ πρότερον, ὅτι οὔ πω ὤπται ἱκανῶς.
about them also before that not yet has-been-seen sufficiently
Νῦν δ᾽ ἐστὶν ἐν πᾶσι ταῖς ὄρνισι τὸ μὲν θῆλυ τὸ
Now but is in all the birds the indeed female the
δ᾽ ἄρρεν, ὥσθ᾽ ᾗ μὲν φυτόν, τετελέωκεν (διόπερ
and male so-that insofar-as indeed plant it-has-been-completed wherefore
οὐ μεταβάλλει πάλιν μετὰ τὴν ὀχείαν), ᾗ δ᾽ οὐ
not changes again after the copulation insofar-as but not
φυτόν, οὐ τετελέωκεν, οὐδ᾽ ἀποβαίνει ἐξ αὐτοῦ ἕτερον
plant not it-has-been-completed nor turns-out from it other
οὐθέν· οὔτε γὰρ ὡς φυτοῦ ἁπλῶς οὔθ᾽ ὡς ζῴου ἐκ
anything neither for as of-plant simply nor as of-animal from
συνδυασμοῦ γέγονεν. Τὰ δ᾽ ἐξ ὀχείας μὲν γενόμενα
coupling it-has-come-to-be The but from copulation indeed having-come-to-be
ᾠά, διακεκριμένα δ᾽ εἰς τὸ λευκόν, γίνεται κατὰ τὸ
eggs separated but into the white become according-to the
πρῶτον ὀχεῦσαν· ἔχει γὰρ ἀμφοτέρας ἤδη τὰς ἀρχάς.
first having-mounted it-has for both already the principles

Cephalopods and crustaceans also bear from copulation, often seen, so those who say all fish are female are ignorant. Their coupling is the longest, as the insects', since they are bloodless and cold. Cuttlefish and squid show two eggs from a divided uterus, the octopus one, its round egg hiding the split. Female crayfish keep their eggs under their flaps; cephalopods lay outside, the male sprinkling as fish do. These eggs grow outside, and the young cuttlefish clings to its egg at the front.

Τὸν αὐτὸν δὲ τρόπον καὶ τὰ μαλάκια ποιεῖται τὸν τόκον,
The same and way also the cephalopods make the birth
οἷον σηπίαι καὶ τὰ τοιαῦτα, καὶ τὰ μαλακόστρακα, οἷον
such-as cuttlefish and the such and the crustaceans such-as
κάραβοι καὶ τὰ συγγενῆ τούτοις· τίκτει γὰρ ἐξ ὀχείας καὶ
crayfish and the akin to-these they-bear for from copulation also
ταῦτα, καὶ συνδυαζόμενον τὸ ἄρρεν τῷ θήλει πολλάκις
these and coupling the male with-the female often
ὤπται. Διόπερ οὐδ' ἱστορικῶς οὐδὲ ταύτῃ φαίνονται
has-been-seen Wherefore not-even knowledgeably not-even in-this appear
λέγοντες οἱ φάσκοντες τοὺς ἰχθῦς πάντας εἶναι θήλεις
speaking those asserting the fish all to-be females
καὶ τίκτειν οὐκ ἐξ ὀχείας. Τὸ γὰρ ταῦτα μὲν ἐξ ὀχείας
and to-bear not from copulation The for these indeed from copulation
οἴεσθαι, ἐκεῖνα δὲ μή, θαυμαστόν· εἴ τε τοῦτ' ἐλελήθει,
to-think those but not astonishing if both this had-escaped-notice
σημεῖον ἀπειρίας. Γίνεται δὲ ὁ συνδυασμὸς τούτων
sign of-inexperience Comes-about and the coupling of-these
χρονιώτερος πάντων, ὥσπερ τῶν ἐντόμων, εὐλόγως ἄναιμα
longer than-all just-as of-the insects reasonably bloodless
γάρ ἐστι, διόπερ ψυχρὰ τὴν φύσιν. Ταῖς μὲν οὖν σηπίαις
for they-are wherefore cold in-the nature For-the indeed then cuttlefish
καὶ ταῖς τευθίσι δύο τὰ ᾠὰ φαίνεται διὰ τὸ διηρθρῶσθαι
and for-the squids two the eggs appear because-of the to-be-articulated

τὴν ὑστέραν καὶ φαίνεσθαι δικρόαν, τὸ δὲ τῶν πολυπόδων
the uterus and to-appear two-forked the but of-the octopuses
ἓν ᾠόν. Αἴτιον δ' ἡ μορφὴ στρογγύλη τὴν ἰδέαν οὖσα
one egg Cause and the shape round in-the form being
καὶ σφαιροειδής· ἡ γὰρ σχίσις ἄδηλος πληρωθείσης ἐστίν.
and spherical the for split invisible being-filled is
Δικρόα δὲ καὶ ἡ τῶν καράβων ἐστὶν ὑστέρα. Ἀποτίκτουσι
Two-forked and also the of-the crayfish is uterus They-lay
δὲ τὸ κύημα ἀτελὲς καὶ ταῦτα πάντα διὰ τὴν αὐτὴν
and the fetus incomplete also these all because-of the same
αἰτίαν. Τὰ μὲν οὖν καραβώδη τὰ θήλεα πρὸς αὑτὰ ποιεῖται
cause The indeed then crayfish-like the females to themselves make
τὸν τόκον (διόπερ μείζους ἔχει τὰς πλάκας τὰ θήλεα
the birth wherefore larger they-have the flaps the females
αὐτῶν ἢ τὰ ἄρρενα, φυλακῆς χάριν τῶν ᾠῶν), τὰ δὲ
of-them than the males of-guarding for-the-sake of-the eggs the but
μαλάκια ἔξω. Καὶ τοῖς μὲν θήλεσι τῶν μαλακίων ἐπιρραίνει
cephalopods outside And on-the indeed females of-the cephalopods sprinkles
ὁ ἄρρην, καθάπερ οἱ ἄρρενες ἰχθύες τοῖς ᾠοῖς, καὶ γίγνεται
the male just-as the male fish on-the eggs and it-becomes
συνεχὲς καὶ κολλῶδες· τοῖς δὲ καραβώδεσιν οὔτ' ὤπται
continuous and glue-like for-the but crayfish-like neither has-been-seen
τοιοῦτον οὔτ' εὔλογον. Ὑπό τε γὰρ τῇ θηλείᾳ τὸ κύημα καὶ
such nor reasonable Under both for the female the fetus and
σκληρόδερμόν ἐστι, καὶ λαμβάνει αὔξησιν καὶ ταῦτα καὶ τὰ
hard-skinned it-is and takes growth both these and the
τῶν μαλακίων ἔξω, καθάπερ καὶ τὰ τῶν ἰχθύων, προσπέφυκε
of-the cephalopods outside just-as also the of-the fish is-attached
δ' ἡ γιγνομένη σηπία τοῖς ᾠοῖς κατὰ τὸ πρόσθιον· ταύτῃ
and the arising cuttlefish to-the eggs at the front here
γὰρ ἐνδέχεται μόνον· ἔχει γὰρ μόνον ἐπὶ ταὐτὸ τὸ ὀπίσθιον
for it-is-possible only it-has for only on the-same the back

μέρος καὶ τὸ πρόσθιον. Τὸ δὲ σχῆμα τῆς θέσεως ὃν
part and the front The and shape of-the position which
ἔχει γιγνόμενα τρόπον, δεῖ θεωρεῖν ἐκ τῶν ἱστοριῶν.
it-has coming-to-be way one-must to-study from the inquiries

IX · INSECTS AND LARVAE

The insects and testaceans remain. Insects bear larvae, and nearly all animals in a way bear one first, the most incomplete fetus, which grows while still undistinguished; the live-bearers' first fetus is egg-like, so its early loss is called an outflow. Caterpillars' and spiders' fetuses are larvae, since they change whole; grown, they harden in a husk and lie motionless, like a soft egg laid early. From the husk, at a third stage, the winged insect emerges; the caterpillar feeds, then lies still as chrysalis and nymph.

Περὶ μὲν οὖν τῶν ἄλλων ζῴων τῆς γενέσεως εἴρηται,
About indeed then the other animals the generation it-has-been-said
καὶ πεζῶν καὶ πτηνῶν καὶ πλωτῶν. Περὶ δὲ τῶν ἐντόμων
both land and winged and swimming About and the insects
καὶ τῶν ὀστρακοδέρμων λεκτέον κατὰ τὴν ὑφηγημένην
and the testaceans must-be-said according-to the prescribed
μέθοδον. Εἴπωμεν δὲ πρῶτον περὶ τῶν ἐντόμων. Ὅτι μὲν
method Let-us-speak and first about the insects That indeed
οὖν τὰ μὲν ἐξ ὀχείας γίνεται τῶν τοιούτων τὰ
then the-ones indeed from copulation come-to-be of-the such the-others
δ' αὐτόματα, πρότερον ἐλέχθη, πρὸς δὲ τούτοις ὅτι
and spontaneous before it-was-said in-addition-to and these that
σκωληκοτοκεῖ καὶ διὰ τίν' αἰτίαν σκωληκοτοκεῖ. Σχεδὸν
they-bear-larvae and because-of what cause they-bear-larvae Nearly
γὰρ ἔοικε πάντα τρόπον τινὰ σκωληκοτοκεῖν πρῶτον·
for it-seems all in-a-way some to-bear-larvae first

τὸ γὰρ ἀτελέστατον κύημα τοιοῦτόν ἐστιν. Ἐν πᾶσι δὲ
the for most-incomplete fetus such is In all and
καὶ τοῖς ζῳοτοκοῦσι καὶ τοῖς ᾠοτοκοῦσι τέλειον ᾠὸν τὸ
both the live-bearing and the egg-laying complete egg the
κύημα τὸ πρῶτον ἀδιόριστον ὂν λαμβάνει τὴν αὔξησιν·
fetus the first indistinct being takes the growth
τοιαύτη δ' ἐστὶν ἡ τοῦ σκώληκος φύσις. Μετὰ δὲ τοῦτο
such and is the of-the larva nature After and this
τὰ μὲν ᾠοτοκεῖ τὸ κύημα τέλειον, τὰ δ' ἀτελές,
the-ones indeed lay the fetus complete the-others and incomplete
ἔξω δὲ γίγνεται τέλειον, καθάπερ ἐπὶ τῶν ἰχθύων
outside but it-becomes complete just-as in-the-case-of the fish
εἴρηται πολλάκις. Τὰ δ' ἐν αὑτοῖς ζῳοτοκοῦντα τρόπον
it-has-been-said often The but in themselves bearing-live in-a-way
τινὰ μετὰ τὸ σύστημα τὸ ἐξ ἀρχῆς ᾠοειδὲς γίνεται·
some after the constitution the from beginning egg-like becomes
περιέχεται γὰρ τὸ ὑγρὸν ὑμένι λεπτῷ, καθάπερ ἂν εἴ
is-enclosed for the moist in-membrane thin just-as — if
τις ἀφέλοι τὸ τῶν ᾠῶν ὄστρακον· διὸ καὶ καλοῦσι
someone should-remove the of-the eggs shell wherefore also they-call
τὰς τότε γιγνομένας τῶν κυημάτων φθορὰς ἐκρύσεις.
the then coming-about of-the fetuses destructions outflows
Τὰ δ' ἔντομα καὶ γεννᾷ τὰ γεννῶντα σκώληκας, καὶ
The and insects both generate the-ones generating larvae and
τὰ γιγνόμενα μὴ δι' ὀχείας ἀλλ' αὐτόματα ἐκ τοιαύτης
the coming-to-be not through copulation but spontaneous from such
γίγνεται πρῶτον συστάσεως. Δεῖ γὰρ καὶ τὰς κάμπας εἶδος
come-to-be first constitution It-must for also the caterpillars species
τιθέναι σκώληκος, καὶ τὰ τῶν ἀραχνίων. Καίτοι δόξειεν
to-posit of-larva and the of-the spiders And-yet would-seem
ἂν ᾠοῖς ἐοικέναι διὰ τὴν τοῦ σχήματος περιφέρειαν καὶ
— to-eggs to-resemble because-of the of-the shape roundness both

τούτων ἔνια καὶ πολλὰ τῶν ἄλλων· ἀλλ᾽ οὐ τῷ σχήματι
of-these some and many of-the others but not by-the shape
λεκτέον οὐδὲ τῇ μαλακότητι καὶ σκληρότητι (καὶ γὰρ
must-be-said nor by-the softness and hardness and for
σκληρὰ τὰ κυήματα γίγνεται ἐνίων) ἀλλὰ τῷ ὅλον
hard the fetuses become of-some but by-the whole
μεταβάλλειν καὶ μὴ ἐκ μορίου τινὸς γίνεσθαι τὸ ζῷον.
to-change and not from part some to-come-to-be the animal
Προελθόντα δὲ πάντα τὰ σκωληκώδη καὶ τοῦ μεγέθους
Having-advanced and all the larva-like and of-the size
λαβόντα τέλος οἷον ᾠὸν γίγνεται· σκληρύνεταί τε γὰρ
having-taken end like egg becomes is-hardened both for
περὶ αὐτὰ τὸ κέλυφος, καὶ ἀκινητίζουσι κατὰ τοῦτον τὸν
around them the husk and they-become-motionless at this the
καιρόν. Δῆλον δὲ τοῦτο ἐν τοῖς σκώληξι τοῖς τῶν μελιττῶν
season Clear and this in the larvae the of-the bees
καὶ σφηκῶν καὶ ταῖς κάμπαις. Τούτου δ᾽ αἴτιον ὅτι ἡ φύσις
and wasps and the caterpillars Of-this and cause that the nature
ὡσπερανεὶ πρὸ ὥρας ᾠοτοκεῖ διὰ τὴν ἀτέλειαν τὴν
as-it-were before season lays-eggs because-of the incompleteness the
αὑτῆς, ὡς ὄντος τοῦ σκώληκος ἔτι ἐν αὐξήσει ᾠοῦ μαλακοῦ.
its-own as being the larva still in growth egg soft
Τὸν αὐτὸν δὲ τρόπον καὶ ἐπὶ τῶν ἄλλων συμβαίνει
The same and way also in-the-case-of the others happens
πάντων τῶν μὴ ἐξ ὀχείας γιγνομένων ἐν ἐρίοις ἤ τισιν
all the not from copulation coming-to-be in wools or some
ἄλλοις τοιούτοις, καὶ τῶν ἐν τοῖς ὕδασιν. Πάντα γὰρ
others such and of-the in the waters All for
μετὰ τὴν τοῦ σκώληκος φύσιν ἀκινητίσαντα, καὶ τοῦ
after the of-the larva nature having-become-motionless and the
κελύφους περιξηρανθέντος, μετὰ ταῦτα τούτου ῥαγέντος
husk having-dried-around after these-things this having-broken

ἐξέρχεται καθάπερ ἐξ ᾠοῦ ζῷον ἐπιτελεσθὲν ἐπὶ τῆς
comes-out just-as from egg animal completed at the
τρίτης γενέσεως, ὧν τὰ πλεῖστα πτερωτὰ τῶν πεζῶν
third generation of-which the most winged of-the land
ἐστίν. Κατὰ λόγον δὲ συμβαίνει καὶ τὸ θαυμασθὲν
are According-to reason and happens also the would-be-wondered-at
ἂν δικαίως ὑπὸ πολλῶν. Αἵ τε γὰρ κάμπαι λαμβάνουσαι
— rightly by many The both for caterpillars taking
τὸ πρῶτον τροφὴν μετὰ ταῦτα οὐκέτι λαμβάνουσιν,
the first nourishment after these-things no-longer take
ἀλλ' ἀκινητίζουσιν αἱ καλούμεναι ὑπό τινων χρυσαλλίδες,
but become-motionless the so-called by some chrysalises
καὶ τῶν σφηκῶν οἱ σκώληκες καὶ τῶν μελιττῶν. Μετὰ
and of-the wasps the larvae and of-the bees After
ταῦτα αἱ καλούμεναι νύμφαι γίνονται, καὶ τοιοῦτον οὐδὲν
these-things the so-called nymphs come-to-be and such nothing
ἔχουσιν· καὶ γὰρ ἡ τῶν ᾠῶν φύσις ὅταν λάβῃ τέλος,
have and for the of-the eggs nature when it-take end
ἀναυξής ἐστι, τὸ δὲ πρῶτον αὐξάνεται καὶ λαμβάνει
growthless is the but first grows and takes
τροφήν, ἕως ἂν διορισθῇ καὶ γένηται τέλειον ᾠόν.
nourishment until — it-be-distinguished and become complete egg
Τῶν δὲ σκωλήκων οἱ μὲν ἔχουσιν ἐν ἑαυτοῖς τὸ
Of-the and larvae the-ones indeed have in themselves the
τοιοῦτον ὅθεν τρεφομένοις ἐπιγίγνεται τοιοῦτον περίττωμα,
such whence being-nourished arises such residue
οἵ τε τῶν μελιττῶν καὶ σφηκῶν· οἱ δὲ λαμβάνουσι
the-ones both of-the bees and wasps the-others and take
θύραθεν, ὥσπερ αἵ τε κάμπαι καὶ τῶν ἄλλων τινὲς
from-outside just-as the both caterpillars and of-the other some
σκωλήκων. Διότι μὲν οὖν τριγενῆ τε γίγνεται τὰ
larvae Why indeed then three-generationed both become the

τοιαῦτα, καὶ δι' ἣν αἰτίαν ἐκ κινουμένων ἀκινητίζει
such and because-of what cause from moving they-become-motionless
πάλιν, εἴρηται· γίγνεται δὲ τὰ μὲν ἐξ ὀχείας αὐτῶν,
again it-has-been-said come-to-be and the-ones indeed from copulation of-them
καθάπερ οἵ τε ὄρνιθες καὶ τὰ ζῳοτόκα καὶ τῶν ἰχθύων οἱ
just-as the both birds and the live-bearing and of-the fish the
πλεῖστοι, τὰ δ' αὐτόματα, καθάπερ ἔνια τῶν φυομένων.
most the-others and spontaneous just-as some of-the growing-things

X · THE GENERATION OF BEES

Bees' generation is a great puzzle: whether they fetch their brood from elsewhere, generate it, or fetch one kind and generate another; whether they couple; and which kind is which sex. Reasoning rules most out: workers have stings, which nature gives no female, yet tend the young as no male does, and none is seen coupling. It remains that workers generate drones without copulation, holding both sexes like plants, and kings generate kings and workers, so the drones, generating nothing, end the series at the third kind. Perception must confirm this when the facts are better known. Hornets and wasps, lacking the bees' divine strain, breed by coupling.

Ἡ δὲ τῶν μελιττῶν γένεσις ἔχει πολλὴν ἀπορίαν. Ἐπεὶ
The but of-the bees generation has much puzzle Since
γάρ ἐστι καὶ περὶ τοὺς ἰχθῦς τοιαύτη τις γένεσις ἐνίων
for there-is also about the fish such some generation of-some
ὥστ' ἄνευ ὀχείας γεννᾶν, τοῦτο συμβαίνειν ἔοικε καὶ περὶ
so-that without copulation to-generate this to-happen seems also about
τὰς μελίττας ἐκ τῶν φαινομένων. Ἀνάγκη γὰρ ἤτοι φέρειν
the bees from the appearances Necessary for either to-bring
αὐτὰς ἄλλοθεν τὸν γόνον, ὥσπερ τινές φασι, καὶ τοῦτον ἢ
them from-elsewhere the brood just-as some say and this either
φυόμενον αὐτόματον ἢ ἄλλου τινὸς ζῴου τίκτοντος, ἢ γεννᾶν
growing spontaneous or of-other some animal bearing or to-generate

αὐτάς, ἢ τὸν μὲν φέρειν τὸν δὲ γεννᾶν (καὶ γὰρ τοῦτο
themselves or the-one indeed to-bring the-other and to-generate and for this
λέγουσί τινες, ὡς τὸν τῶν κηφήνων μόνων φέρουσι γόνον),
say some that the of-the drones only they-bring brood
καὶ γεννᾶν ἢ ὀχευομένας ἢ ἀνοχεύτους, καὶ ὀχευομένας
and to-generate either being-mounted or unmounted and being-mounted
γεννᾶν ἤτοι ἕκαστον γένος καθ' αὑτὸ ἢ ἕν τι αὐτῶν τἆλλα
to-generate either each kind by itself or one some of-them the-others
ἢ συνδυαζόμενον ἄλλο γένος ἄλλῳ, λέγω δ' οἷον μελίττας
or coupling other kind with-other I-mean and such-as bees
μὲν γίγνεσθαι ἐκ μελιττῶν συνδυαζομένων, κηφῆνας δ'
indeed to-come-to-be from bees coupling drones but
ἐκ κηφήνων καὶ τοὺς βασιλεῖς ἐκ τῶν βασιλέων, ἢ
from drones and the kings from the kings or
πάντα τἆλλα ἐξ ἑνὸς οἷον ἐκ τῶν καλουμένων βασιλέων
all the-others from one such-as from the so-called kings
καὶ ἡγεμόνων, ἢ ἐκ τῶν κηφήνων καὶ τῶν μελιττῶν·
and leaders or from the drones and the bees
φασὶ γάρ τινες τοὺς μὲν ἄρρενας εἶναι τοὺς δὲ θήλεις,
they-say for some the indeed males to-be the but females
οἷον τὰς μὲν μελίττας ἄρρενας τοὺς δὲ κηφῆνας θήλεας.
such-as the indeed bees males the but drones females
Ταῦτα δ' ἐστὶ πάντα ἀδύνατα συλλογιζομένοις τὰ μὲν ἐκ
These and are all impossible to-those-reasoning the-ones indeed from
τῶν συμβαινόντων ἰδίᾳ περὶ τὰς μελίττας, τὰ δ' ἐκ
the happening peculiarly about the bees the-others and from
τῶν κοινοτέρων τοῖς ἄλλοις ζῴοις. Εἴτε γὰρ μὴ τίκτουσαι
the more-common to-the other animals If for not bearing
φέρουσιν ἄλλοθεν, ἔδει γίγνεσθαι μελίττας καὶ μὴ
they-bring from-elsewhere it-should to-come-to-be bees even not
φερουσῶν τῶν μελιττῶν ἐκ τοῦ τόπου ἐξ οὗ τὸ σπέρμα
bringing the bees from the place from which the seed

φέρουσιν. Διὰ τί γὰρ μετενεχθέντος μὲν ἔσται, ἐκεῖ δ'
they-bring Because-of what for having-been-transferred indeed will-it-be there but
οὐκ ἔσται; προσήκει γὰρ οὐδὲν ἧττον, εἴτε φυόμενον ἐν τοῖς
not will-it-be it-befits for nothing less whether growing in the
ἄνθεσιν αὐτόματον εἴτε ζῴου τινὸς τίκτοντος. Κἂν εἴ γε
flowers spontaneous or of-animal some bearing Even if at-least
ζῴου τινὸς ἑτέρου τὸ σπέρμα ἦν, ἐκεῖνο ἔδει γίγνεσθαι
of-animal some other the seed were that it-should to-come-to-be
ἐξ αὐτοῦ, ἀλλὰ μὴ μελίττας. Ἔτι δὲ τὸ μὲν μέλι κομίζειν
from it but not bees Further and the indeed honey to-carry
εὔλογον (τροφὴ γάρ), τὸ δὲ τὸν γόνον ἀλλότριον ὄντα καὶ
reasonable nourishment for the but the brood foreign being and
μὴ τροφὴν ἄτοπον. Τίνος γὰρ χάριν πάντα γὰρ ὅσα
not nourishment strange Of-what for for-the-sake all for as-many-as
πραγματεύεται περὶ τὰ τέκνα, περὶ τὸν φαινόμενον οἰκεῖον
busy-themselves about the offspring about the appearing own
διαπονεῖται γόνον. Ἀλλὰ μὴν οὐδὲ τὰς μὲν μελίττας θηλείας
toil brood But truly not-even the indeed bees female
εἶναι τοὺς δὲ κηφῆνας ἄρρενας εὔλογον· οὐδενὶ γὰρ τὸ πρὸς
to-be the but drones male reasonable to-none for the for
ἀλκὴν ὅπλον τῶν θηλειῶν ἀποδίδωσιν ἡ φύσις, εἰσὶ δ' οἱ
defense weapon of-the females gives the nature are and the
μὲν κηφῆνες ἄκεντροι, αἱ δὲ μέλιτται πᾶσαι κέντρον ἔχουσιν.
indeed drones stingless the but bees all sting have
Οὐδὲ τοὐναντίον εὔλογον, τὰς μὲν μελίττας ἄρρενας
Nor the-opposite reasonable the indeed bees male
τοὺς δὲ κηφῆνας θήλεας· οὐδὲν γὰρ τῶν ἀρρένων εἴωθε
the but drones female none for of-the males is-wont
διαπονεῖσθαι περὶ τὰ τέκνα, νῦν δ' αἱ μέλιτται τοῦτο
to-toil about the offspring now but the bees this
ποιοῦσιν. Ὅλως δ' ἐπειδὴ φαίνεται ὁ μὲν τῶν κηφήνων
do Generally and since appears the indeed of-the drones

γόνος ἐγγινόμενος καὶ μηθενὸς ὄντος κηφῆνος, ὁ δὲ τῶν
brood coming-in even none being drone the but of-the
μελιττῶν οὐκ ἐγγινόμενος ἄνευ τῶν βασιλέων, διὸ καὶ
bees not coming-in without the kings wherefore also
φασί τινες τὸν τῶν κηφήνων φέρεσθαι μόνον, δῆλον ὡς οὔτ'
say some the of-the drones to-be-brought only clear that neither
ἐξ ὀχείας γίνονται, οὔτ' ἐξ ἑκατέρου τοῦ γένους αὐτοῦ
from copulation they-come-to-be nor from each of-the kind itself
αὑτῷ συνδυαζομένου, οὔτ' ἐκ μελιττῶν καὶ κηφήνων. Τό
with-itself coupling nor from bees and drones The
τε τοῦτον φέρειν μόνον διά τε τὰ εἰρημένα ἀδύνατον,
both this to-bring only because-of both the said impossible
καὶ οὐκ εὔλογον μὴ περὶ πᾶν τὸ γένος αὐτῶν ὅμοιόν τι
and not reasonable not about all the kind of-them like some
συμβαίνειν πάθος. Ἀλλὰ μὴν οὐδ' αὐτὰς τὰς μελίττας
to-happen affection But truly not-even themselves the bees
ἐνδέχεται τὰς μὲν ἄρρενας εἶναι τὰς δὲ θηλείας· ἐν
is-it-possible the-ones indeed males to-be the-others but females in
πᾶσι γὰρ διαφέρει τοῖς γένεσι τὸ θῆλυ καὶ τὸ ἄρρεν. Κἂν
all for differs the kinds the female and the male Also
ἐγέννων αὐταὶ αὑτάς· νῦν δ' οὐ φαίνεται γιγνόμενος
they-would-generate they-themselves themselves now but not appears coming-to-be
ὁ γόνος αὐτῶν, ἐὰν μὴ ἐνῶσιν οἱ ἡγεμόνες, ὡς φασίν.
the brood of-them if not be-in the leaders as they-say
Κοινὸν δὲ καὶ πρὸς τὴν ἐξ ἀλλήλων γένεσιν καὶ πρὸς τὴν
Common and both toward the from one-another generation and toward the
ἐκ τῶν κηφήνων, καὶ χωρὶς καὶ μετ' ἀλλήλων, τὸ μηδέποτε
from the drones and separately and with one-another the never
ὤφθαι ὀχευόμενον μηθὲν αὐτῶν· εἰ δ' ἦν ἐν αὐτοῖς
to-have-been-seen being-mounted any of-them if but were in them
τὸ μὲν θῆλυ τὸ δ' ἄρρεν, πολλάκις ἂν τοῦτο συνέβαινεν.
the indeed female the and male often — this would-happen

Λείπεται δ', εἴπερ ἐξ ὀχείας γίγνεται, τοὺς βασιλεῖς γεννᾶν
It-remains but if-indeed from copulation it-comes-about the kings to-generate
συνδυαζομένους. Ἀλλ' οἱ κηφῆνες φαίνονται γιγνόμενοι καὶ
coupling But the drones appear coming-to-be even
μὴ ἐνόντων ἡγεμόνων, ὧν οὔτε φέρειν οἷόν τε τὸν γόνον
not being-in leaders of-which neither to-bring possible — the brood
τὰς μελίττας οὔτε γεννᾶν αὐτὰς ὀχευομένας. Λείπεται
the bees nor to-generate themselves being-mounted It-remains
δή, καθάπερ φαίνεται συμβαῖνον ἐπί τινων ἰχθύων,
indeed just-as appears happening in-the-case-of some fish
τὰς μελίττας ἄνευ ὀχείας γεννᾶν τοὺς κηφῆνας, τῷ μὲν
the bees without copulation to-generate the drones by-the indeed
γεννᾶν οὔσας θηλείας, ἐχούσας δ' ἐν αὑταῖς, ὥσπερ τὰ
generating being female having but in themselves just-as the
φυτά, καὶ τὸ θῆλυ καὶ τὸ ἄρρεν. Διὸ καὶ τὸ πρὸς τὴν
plants both the female and the male Wherefore also the for the
ἀλκὴν ἔχουσιν ὄργανον· οὐ γὰρ δεῖ θῆλυ καλεῖν ἐν ᾧ
defense they-have instrument not for one-must female to-call in which
ἄρρεν μή ἐστι κεχωρισμένον. Εἰ δ' ἐπὶ τῶν κηφήνων
male not is separated If but in-the-case-of the drones
τοῦτο φαίνεται συμβαῖνον καὶ γιγνόμενοι μὴ ἐξ ὀχείας,
this appears happening and coming-to-be not from copulation
ἤδη καὶ κατὰ τῶν μελιττῶν καὶ τῶν βασιλέων τὸν
already also concerning the bees and the kings the
αὐτὸν ἀναγκαῖον εἶναι λόγον καὶ μὴ γεννᾶσθαι ἐξ ὀχείας.
same necessary to-be account and not to-be-generated from copulation
Εἰ μὲν οὖν ἄνευ τῶν βασιλέων ἐφαίνετ' ἐγγινόμενος ὁ
If indeed then without the kings appeared coming-in the
γόνος τῶν μελιττῶν, κἂν τὰς μελίττας ἀναγκαῖον ἦν
brood of-the bees also the bees necessary it-would-be
ἐξ αὑτῶν ἄνευ ὀχείας γίγνεσθαι. Νῦν δ' ἐπειδὴ τοῦτ' οὔ
from themselves without copulation to-come-to-be Now but since this not

φασιν οἱ περὶ τὴν θεραπείαν τούτων τῶν ζῴων ὄντες,
say those about the care of-these the animals being
λείπεται τοὺς βασιλεῖς καὶ αὐτοὺς γεννᾶν καὶ τὰς μελίττας.
it-remains the kings also themselves to-generate and the bees
Ὄντος δὲ περιττοῦ τοῦ γένους καὶ ἰδίου τοῦ τῶν μελιττῶν,
Being and extraordinary the kind and peculiar the of-the bees
καὶ ἡ γένεσις αὐτῶν ἴδιος εἶναι φαίνεται. Τὸ μὲν γὰρ
also the generation of-them peculiar to-be appears The indeed for
γεννᾶν τὰς μελίττας ἄνευ ὀχείας εἴη ἂν καὶ ἐπ᾽
to-generate the bees without copulation would-be — also in-the-case-of
ἄλλων ζῴων συμβαῖνον, ἀλλὰ μὴ τὸ αὐτὸ γένος γεννᾶν
other animals happening but not the same kind to-generate
ἴδιον· οἱ γὰρ ἐρυθρῖνοι γεννῶσιν ἐρυθρίνους καὶ αἱ χάνναι
peculiar the for erythrini generate erythrini and the channae
χάννας. Αἴτιον δ᾽ ὅτι καὶ αὐταὶ γεννῶνται αἱ μέλιτται
channae Cause and that also themselves are-generated the bees
οὐχ ὥσπερ αἱ μυῖαι καὶ τὰ τοιαῦτα τῶν ζῴων, ἀλλ᾽ ἐξ
not just-as the flies and the such of-the animals but from
ἑτέρου μὲν συγγενοῦς δὲ γένους. Γίγνονται γὰρ ἐκ τῶν
other indeed akin but kind They-come-to-be for from the
ἡγεμόνων. Διὸ καὶ ἔχει ἀνάλογόν πως ἡ γένεσις αὐτῶν.
leaders Wherefore also has analogous somehow the generation of-them
Οἱ μὲν γὰρ ἡγεμόνες μεγέθει μὲν ὅμοιοί εἰσι τοῖς
The indeed for leaders in-size indeed like are to-the
κηφῆσι, τῷ δὲ κέντρον ἔχειν ταῖς μελίτταις. Αἱ μὲν
drones by-the and sting to-have to-the bees The indeed
οὖν μέλιτται κατὰ τοῦτ᾽ ἐοίκασιν αὐτοῖς, οἱ δὲ κηφῆνες
then bees in this resemble them the but drones
κατὰ τὸ μέγεθος. Ἀνάγκη γάρ τι παραλλάττειν, εἰ μὴ
in the size Necessary for something to-deviate if not
δεῖ ἀεὶ τὸ αὐτὸ γένος ἐξ ἑκάστου γίνεσθαι. Τοῦτο δ᾽
it-must always the same kind from each to-come-to-be This and

ἀδύνατον· πᾶν γὰρ ἂν τὸ γένος ἡγεμόνες ἦσαν. Αἱ μὲν
impossible all for — the kind leaders would-be The indeed
οὖν μέλιτται κατὰ τὴν δύναμιν αὐτοῖς ὡμοίωνται καὶ τῷ
then bees in the power to-them have-been-likened and by-the
τίκτειν, οἱ δὲ κηφῆνες κατὰ τὸ μέγεθος εἰ δ' εἶχον καὶ
to-bear the but drones in the size if but they-had also
κέντρον, ἡγεμόνες ἂν ἦσαν. Νῦν δὲ τοῦτο λείπεται τῆς
sting leaders — they-would-be Now but this remains of-the
ἀπορίας· οἱ γὰρ ἡγεμόνες ἀμφοτέροις ἐοίκασιν ἐν τῷ αὐτῷ
puzzle the for leaders to-both resemble in the same
τοῖς γένεσι, τῷ μὲν κέντρον ἔχειν ταῖς μελίτταις, τῷ
the kinds by-the indeed sting to-have to-the bees by-the
δὲ μεγέθει τοῖς κηφῆσιν. Ἀναγκαῖον δὲ καὶ τοὺς ἡγεμόνας
and size to-the drones Necessary and also the leaders
γίνεσθαι ἔκ τινος. Ἐπεὶ οὖν οὔτ' ἐκ τῶν μελιττῶν οὔτ'
to-come-to-be from something Since then neither from the bees nor
ἐκ τῶν κηφήνων, αὐτοῖς ἀναγκαῖον καὶ αὐτοὺς γεννᾶν.
from the drones for-them necessary also themselves to-generate
Γίνονται δ' ἐπὶ τέλει οἱ κύτταροι αὐτῶν καὶ οὐ πολλοὶ
Come-to-be and at end the cells of-them and not many
τὸν ἀριθμόν. Ὥστε συμβαίνει τοὺς μὲν ἡγεμόνας γεννᾶν
in-the number So-that it-happens the indeed leaders to-generate
μὲν καὶ αὑτούς, γεννᾶν δὲ καὶ ἄλλο τι γένος (τοῦτο
indeed also themselves to-generate and also other some kind this
δ' ἐστὶ τὸ τῶν μελιττῶν), τὰς δὲ μελίττας ἄλλο μέν
and is the of-the bees the and bees other indeed
τι γεννᾶν, τοὺς κηφῆνας, αὑτὰς δὲ μηκέτι γεννᾶν, ἀλλὰ
some to-generate the drones themselves but no-longer to-generate but
τοῦτ' ἀφῃρῆσθαι αὐτῶν. Ἐπεὶ δ' ἀεὶ τὸ κατὰ
this to-have-been-taken-away from-them Since and always the according-to
φύσιν ἔχει τάξιν, διὰ τοῦτο τῶν κηφήνων ἀναγκαῖον
nature has order because-of this of-the drones necessary

καὶ τὸ ἄλλο τι γένος γεννᾶν ἀφῃρῆσθαι. Ὅπερ
also the other some kind to-generate to-have-been-taken-away Which-very
καὶ φαίνεται συμβαῖνον· αὐτοὶ μὲν γὰρ γίγνονται, ἄλλο
also appears happening themselves indeed for come-to-be other
δ' οὐθὲν γεννῶσιν, ἀλλ' ἐν τῷ τρίτῳ ἀριθμῷ πέρας ἔσχεν
but nothing they-generate but in the third number limit had
ἡ γένεσις. Καὶ οὕτω δὴ συνέστηκε τῇ φύσει καλῶς
the generation And so indeed has-been-constituted by-the nature well
ὥστ' αἰεὶ διαμένειν ὄντα τὰ γένη καὶ μηδὲν ἐλλείπειν, μὴ
so-that always to-endure being the kinds and nothing to-fail not
πάντων γεννώντων. Εὔλογον δὲ καὶ τοῦτο συμβαίνειν, ἐν
all generating Reasonable and also this to-happen in
μὲν ταῖς εὐετηρίαις μέλι καὶ κηφῆνας γίνεσθαι πολλούς,
indeed the good-seasons honey and drones to-come-to-be many
ἐν δὲ ταῖς ἐπομβρίαις ὅλως γόνον πολύν.
in but the rainy-seasons generally brood much
Αἱ μὲν γὰρ ὑγρότητες περίττωμα ποιοῦσι πλεῖον ἐν
The indeed for moistures residue make more in
τοῖς σώμασι τῶν ἡγεμόνων, αἱ δ' εὐετηρίαι ἐν τοῖς τῶν
the bodies of-the leaders the but good-seasons in the of-the
μελιττῶν· ἔλαττον γὰρ ὂν τῷ μεγέθει δεῖται τῆς εὐετηρίας
bees smaller for being in-the size it-needs the good-season
μᾶλλον. Εὖ δὲ καὶ τὸ τοὺς βασιλεῖς ὥσπερ πεποιημένους
more Well and also the the kings just-as made
ἐπὶ τέκνωσιν ἔσω μένειν, ἀφειμένους τῶν ἀναγκαίων
for child-bearing inside to-remain released from-the necessary
ἔργων, καὶ μέγεθος δὲ ἔχειν, ὥσπερ ἐπὶ τεκνοποιίαν
works and size and to-have just-as for child-making
συστάντος τοῦ σώματος αὐτῶν· τούς τε κηφῆνας ἀργοὺς
constituted the body of-them the both drones idle
ἅτ' οὐδὲν ἔχοντας ὅπλον πρὸς τὸ διαμάχεσθαι περὶ τῆς
since no having weapon for the to-fight about the

τροφῆς, καὶ διὰ τὴν βραδυτῆτα τὴν τοῦ σώματος. Αἱ
nourishment and because-of the slowness the of-the body The
δὲ μέλιτται μέσαι τὸ μέγεθός εἰσιν ἀμφοῖν (χρήσιμοι γὰρ
but bees middle in-the size are of-both useful for
οὕτω πρὸς τὴν ἐργασίαν), καὶ ἐργάτιδες ὡς καὶ τέκνα
so for the work and workers as also offspring
τρέφουσαι καὶ πατέρας. Ὁμολογούμενον δ' ἐστὶ καὶ τὸ
nourishing and fathers Consistent and is also the
ἐπακολουθεῖν τοῖς βασιλεῦσι τῷ τὴν γένεσιν ἐκ τούτων
to-follow the kings by-the the generation from these
εἶναι τὴν τῶν μελιττῶν (εἰ γὰρ μηθὲν τοιοῦτον ὑπῆρχεν,
to-be the of-the bees if for nothing such belonged
οὐκ εἶχε λόγον τὰ συμβαίνοντα περὶ τὴν ἡγεμονίαν
not would-have reason the happenings about the leadership
αὐτῶν), καὶ τὸ τοὺς μὲν ἐᾶν μηθὲν ἐργαζομένους ὡς
of-them and the the-ones indeed to-let nothing working as
γονεῖς, τοὺς δὲ κηφῆνας κολάζειν ὡς τέκνα· κάλλιον γὰρ
parents the but drones to-punish as offspring finer for
τὰ τέκνα κολάζειν καὶ ὧν μηθέν ἐστιν ἔργον.
the offspring to-punish and of-which no is work
Τὸ δὲ τὰς μελίττας γεννᾶν πολλὰς αὐτοὺς ὄντας ὀλίγους
The and the bees to-generate many themselves being few
τοὺς ἡγεμόνας παραπλήσιον ἔοικε συμβαίνειν τῇ γενέσει
the leaders similar seems to-happen to-the generation
τῇ τῶν λεόντων, οἳ τὸ πρῶτον πέντε γεννήσαντες
the of-the lions who the first five having-generated
ὕστερον ἐλάττω γεννῶσι καὶ τέλος ἕν, εἶτ' οὐδέν. Οἱ
later fewer generate and finally one then none The
δ' ἡγεμόνες τὸ μὲν πρῶτον πλῆθος, ὕστερον δ' ὀλίγους
and leaders the indeed first a-multitude later but few
αὐτούς, κἀκείνων μὲν ἐλάττω τὸν γόνον, αὐτῶν δ'
themselves and-than-those indeed less the brood of-themselves and

ἐπεὶ τοῦ πλήθους ἀφεῖλε, τὸ μέγεθος αὐτοῖς ἀπέδωκεν ἡ
since of-the multitude it-took-away the size to-them gave-back the
φύσις. Ἐκ μὲν οὖν τοῦ λόγου τὰ περὶ τὴν γένεσιν τῶν
nature From indeed then the reasoning the about the generation of-the
μελιττῶν τοῦτον ἔχειν φαίνεται τὸν τρόπον, καὶ ἐκ τῶν
bees this to-have appears the way and from the
συμβαίνειν δοκούντων περὶ αὐτάς· οὐ μὴν εἴληπταί γε
happening seeming about them not truly have-been-grasped at-least
τὰ συμβαίνοντα ἱκανῶς, ἀλλ' ἐάν ποτε ληφθῇ, τότε τῇ
the happenings sufficiently but if ever they-be-grasped then the
αἰσθήσει μᾶλλον τῶν λόγων πιστευτέον, καὶ τοῖς λόγοις,
perception more than-the reasonings must-be-trusted and the reasonings
ἐὰν ὁμολογούμενα δεικνύωσι τοῖς φαινομένοις. Πρὸς δὲ
if consistent-things they-show with-the appearances For and
τὸ μὴ ἐξ ὀχείας γίνεσθαι σημεῖον καὶ τὸ τὸν γόνον
the not from copulation to-come-to-be sign also the the brood
φαίνεσθαι μικρὸν ἐν τοῖς τοῦ κηρίου κυτταρίοις· ὅσα δ'
to-appear small in the of-the comb cells as-many-as but
ἐξ ὀχείας τῶν ἐντόμων γεννᾶται, συνδυάζεται μὲν πολὺν
from copulation of-the insects are-generated couple indeed much
χρόνον, τίκτει δὲ ταχέως καὶ μέγεθος ἔχον σκωληκοειδές.
time bear but quickly and size having larva-like
Περὶ δὲ τὴν γένεσιν τὴν τῶν συγγενῶν ζῴων αὐταῖς, οἷον
About and the generation the of-the akin animals to-them such-as
ἀνθρηνῶν τε καὶ σφηκῶν, τρόπον τιν' ἔχει παραπλησίως
hornets both and wasps in-a-way some it-has similarly
πᾶσιν, ἀφῄρηται δὲ τὸ περιττὸν εὐλόγως· οὐ γὰρ
to-all has-been-taken-away and the extraordinary reasonably not for
ἔχουσιν οὐθὲν θεῖον, ὥσπερ τὸ γένος τὸ τῶν μελιττῶν.
they-have anything divine just-as the kind the of-the bees
Γεννῶσι μὲν γὰρ αἱ μῆτραι καλούμεναι, καὶ τὰ πρῶτα
Generate indeed for the mothers so-called and the first

συμπλάττουσι τῶν κηρίων, ὀχευόμεναι δὲ γεννῶσιν ὑπ'
mold-together of-the combs being-mounted and they-generate by
ἀλλήλων· ὦπται γὰρ πολλάκις ὁ συνδυασμὸς αὐτῶν.
one-another has-been-seen for often the coupling of-them
Πόσας δ' ἔχουσι διαφορὰς ἢ πρὸς ἄλληλα τῶν
How-many and they-have differences either toward one-another of-the
τοιούτων γενῶν ἕκαστον ἢ πρὸς τὰς μελίττας, ἐκ τῶν
such kinds each or toward the bees from the
περὶ τὰς ἱστορίας ἀναγεγραμμένων δεῖ θεωρεῖν.
about the inquiries recorded one-must to-study

XI · THE TESTACEANS

The testaceans stand between animals and plants and generate both ways, from a kind of seed and spontaneously. They are rare on land and many in the sea, which is moist, corporeal, and warm and holds every element; land animals belong to air, water animals to water, and the fourth kind to the moon. Some form spontaneously in mud and froth, soul-heat enclosed in a bubble, as oysters in jars sunk off Rhodes show; others bud like onions or emit mucus; their so-called eggs mark good feeding, not seed. Men and quadrupeds, if ever earth-born, began as larvae.

Καὶ περὶ μὲν τῶν ἐντόμων τῆς γενέσεως εἴρηται
And about indeed the insects the generation it-has-been-said
πάντων, περὶ δὲ τῶν ὀστρακοδέρμων λεκτέον. Ἔχει δὲ καὶ
all about and the testaceans must-be-said It-has and also
τούτων τὰ περὶ τὴν γένεσιν τῇ μὲν ὁμοίως τῇ
of-these the about the generation in-one-way indeed likewise in-another
δ' οὐχ ὁμοίως τοῖς ἄλλοις. Καὶ τοῦτ' εὐλόγως συμβαίνει.
but not likewise to-the others And this reasonably happens
Πρὸς μὲν γὰρ τὰ ζῷα φυτοῖς ἐοίκασι, πρὸς δὲ
Compared-with indeed for the animals to-plants they-resemble compared-with but

τὰ φυτὰ ζῴοις, ὥστε τρόπον μέν τινα ἀπὸ σπέρματος
the plants to-animals so-that in-a-way indeed some from seed
φαίνεσθαι γινόμενα, τρόπον δ' ἄλλον οὐκ ἀπὸ σπέρματος,
to-appear coming-to-be in-a-way but other not from seed
καὶ τῇ μὲν αὐτόματα τῇ δ' ἀφ' αὑτῶν, ἢ τὰ
and in-one-way indeed spontaneous in-another but from themselves or the-ones
μὲν οὕτως τὰ δ' ἐκείνως. Διὰ δὲ τὸ τοῖς φυτοῖς
indeed so the-others and in-that-way Because-of and the to-the plants
ἀντίστροφον ἔχειν τὴν φύσιν, διὰ τοῦτο ἐν μὲν τῇ γῇ
counterpart to-have the nature because-of this in indeed the earth
τῶν ὀστρακοδέρμων οὐθὲν ἢ μικρόν τι γίγνεται γένος, οἷον
of-the testaceans none or small some comes-to-be kind such-as
τὸ τῶν κοχλιῶν κἂν ᾖ τι τοιοῦτον ἕτερον μὲν σπάνιον
the of-the snails and-if there-be some such other indeed rare
δέ, ἐν δὲ τῇ θαλάττῃ καὶ τοῖς ὁμοίοις ὑγροῖς πολλὰ καὶ
but in but the sea and the like moist-things many and
παντοδαπὴν ἔχοντα μορφήν. Τὸ δὲ τῶν φυτῶν γένος ἐν
of-every-kind having form The but of-the plants kind in
μὲν τῇ θαλάττῃ καὶ τοῖς τοιούτοις μικρὸν καὶ πάμπαν
indeed the sea and the such small and altogether
ὡς εἰπεῖν οὐθέν, ἐν δὲ τῇ γῇ τὰ τοιαῦτα γίνεται πάντα.
as to-say none in but the earth the such come-to-be all
Τὴν γὰρ φύσιν ἀνάλογον ἔχει καὶ διέστηκεν, ὅσῳ
The for nature analogous it-has and they-stand-apart by-as-much-as
ζωτικώτερον τὸ ὑγρὸν τοῦ ξηροῦ καὶ γῆς ὕδωρ,
more-vital the moist than-the dry and than-earth water
τοσοῦτον ἡ τῶν ὀστρακοδέρμων φύσις τῆς τῶν φυτῶν,
so-much the of-the testaceans nature from-the of-the plants
ἐπεὶ βούλεταί γε ὡς τὰ φυτὰ πρὸς τὴν γῆν, οὕτως
since wishes at-least as the plants toward the earth so
ἔχειν τὰ ὀστρακόδερμα πρὸς τὸ ὑγρόν, ὡς ὄντα τὰ μὲν
to-be the testaceans toward the moist as being the indeed

φυτὰ ὡσπερανεὶ ὄστρεα χερσαῖα, τὰ δὲ ὄστρεα ὡσπερανεὶ
plants as-it-were oysters of-the-land the but oysters as-it-were
φυτὰ ἔνυδρα. Διὰ τοιαύτην δ' αἰτίαν καὶ πολύμορφα
plants in-the-water Because-of such and cause also of-many-forms
τὰ ἐν τῷ ὑγρῷ μᾶλλόν ἐστι τῶν ἐν τῇ γῇ. Τό τε
the in the moist more are than-the in the earth The both
γὰρ ὑγρὸν εὐπλαστοτέραν ἔχει τὴν φύσιν τῆς γῆς
for moist more-easily-molded has the nature than-the earth
καὶ σωματικὴν οὐ πολλῷ ἧττον, καὶ μάλιστα τὰ ἐν τῇ
and bodily not much less and most the in the
θαλάττῃ τοιαῦτα. Τὸ μὲν γὰρ πότιμον γλυκὺ μὲν καὶ
sea such The indeed for drinkable sweet indeed and
τρόφιμον, ἧττον δὲ σωματῶδες καὶ ψυχρόν ἐστιν. Διόπερ
nourishing less but corporeal and cold is Wherefore
ὅσα ἄναιμα καὶ μὴ θερμὰ τὴν φύσιν, οὐ γίνεται ἐν
as-many-as bloodless and not hot in-the nature not come-to-be in
ταῖς λίμναις οὐδὲ τῶν ἁλμυρῶν ἐν τοῖς ποτιμωτέροις,
the lakes nor of-the salt in the more-drinkable
ἀλλ' ἧττον, οἷον τὰ ὀστρακόδερμα καὶ τὰ μαλάκια καὶ
but less such-as the testaceans and the cephalopods and
τὰ μαλακόστρακα (πάντα γὰρ ἄναιμα καὶ ψυχρὰ ταῦτα
the crustaceans all for bloodless and cold these
τὴν φύσιν ἐστίν), ἐν δὲ ταῖς λιμνοθαλάτταις καὶ πρὸς
in-the nature are in but the lagoons and at
ταῖς ἐκβολαῖς τῶν ποταμῶν γίνονται.
the mouths of-the rivers they-come-to-be
Ζητοῦσι γὰρ ἅμα τήν τ' ἀλέαν καὶ τὴν τροφήν, ἡ
They-seek for at-once the both warmth and the nourishment the
δὲ θάλαττα ὑγρά τε καὶ σωματώδης πολλῷ μᾶλλον
but sea moist both and corporeal much more
τοῦ ποτίμου καὶ θερμὴ τὴν φύσιν ἐστί, καὶ κεκοινώνηκε
than-the drinkable and hot in-the nature is and has-shared-in

πάντων τῶν μορίων, ὑγροῦ καὶ πνεύματος καὶ γῆς, ὥστε
all the parts of-moist and of-breath and of-earth so-that
καὶ πάντων μετέχειν τῶν καθ' ἕκαστον γινομένων ἐν τοῖς
also all to-partake-of the in each coming-to-be in the
τόποις ζῴων. Τὰ μὲν γὰρ φυτὰ θείη τις ἂν γῆς,
places animals The indeed for plants would-assign someone — to-earth
ὕδατος δὲ τὰ ἔνυδρα, τὰ δὲ πεζὰ ἀέρος· τὸ δὲ μᾶλλον
to-water and the aquatic the but land to-air the but more
καὶ ἧττον καὶ ἐγγύτερον καὶ πορρώτερον πολλὴν ποιεῖ
and less and nearer and farther much makes
καὶ θαυμαστὴν διαφοράν. Τὸ δὲ τέταρτον γένος οὐκ ἐπὶ
and remarkable difference The but fourth kind not in
τούτων τῶν τόπων δεῖ ζητεῖν· καίτοι βούλεταί γέ τι
these the places one-must to-seek and-yet wishes at-least some
κατὰ τὴν τοῦ πυρὸς εἶναι τάξιν· τοῦτο γὰρ τέταρτον
according-to the of-the fire to-be rank this for fourth
ἀριθμεῖται τῶν σωμάτων. Ἀλλὰ τὸ μὲν πῦρ ἀεὶ φαίνεται
is-counted of-the bodies But the indeed fire always appears
τὴν μορφὴν οὐκ ἰδίαν ἔχον, ἀλλ' ἐν ἑτέρῳ τῶν σωμάτων·
the shape not own having but in other of-the bodies
ἢ γὰρ ἀὴρ ἢ καπνὸς ἢ γῆ φαίνεται τὸ πεπυρωμένον.
either for air or smoke or earth appears the fired
Ἀλλὰ δεῖ τὸ τοιοῦτον γένος ζητεῖν ἐπὶ τῆς σελήνης·
But one-must the such kind seek on the moon
αὕτη γὰρ φαίνεται κοινωνοῦσα τῆς τετάρτης ἀποστάσεως.
this for appears sharing-in the fourth remove
Ἀλλὰ περὶ μὲν τούτων ἄλλος ἂν εἴη λόγος· ἡ
But about indeed these other — would-be account the
δὲ τῶν ὀστρακοδέρμων συνίσταται φύσις τῶν μὲν
but of-the testaceans is-constituted nature of-the-ones indeed
αὐτομάτως, ἐνίων δὲ προϊεμένων τινὰ δύναμιν ἀφ' αὑτῶν,
spontaneously of-some but emitting some power from themselves

πολλάκις δὲ γινομένων καὶ τούτων ἀπὸ συστάσεως
often but coming-to-be also these from constitution
αὐτομάτης. Δεῖ δὲ λαβεῖν τὰς γενέσεις τὰς τῶν φυτῶν.
spontaneous One-must and to-grasp the generations the of-the plants
Τούτων γὰρ γίνεται τὰ μὲν ἀπὸ σπέρματος, τὰ
Of-these for come-to-be the-ones indeed from seed the-others
δ' ἀπὸ σπαραγμάτων ἀποφυτευομένων, ἔνια δὲ τῷ
but from slips planted-out some and by-the
παραβλαστάνειν, οἷον τὸ τῶν κρομμύων γένος. Τοῦτον
budding-alongside such-as the of-the onions kind This
μὲν οὖν οἱ μύες γίνονται τὸν τρόπον· παραφύονται γὰρ
indeed then the mussels come-to-be the way grow-alongside for
ἐλάττους ἀεὶ παρὰ τὴν ἀρχήν· κήρυκες δὲ καὶ πορφύραι
smaller always beside the origin whelks but and purple-fish
καὶ τὰ λεγόμενα κηριάζειν οἷον ἀπὸ σπερματικῆς
and the said to-make-honeycomb as-if from seminal
φύσεως προΐενται μυξώδεις ὑγρότητας. Σπέρμα δ' οὐθὲν
nature emit mucous moistures Seed but none
τούτων δεῖ νομίζειν, ἀλλὰ κατὰ τὸν εἰρημένον
of-these one-must to-believe but according-to the said
τρόπον μετέχειν τῆς ὁμοιότητος τοῖς φυτοῖς. Διὸ καὶ
way to-partake-of the likeness to-the plants Wherefore also
γίνεται πλῆθος τῶν τοιούτων, ὅταν ἅπαξ γένηταί τι.
comes-to-be a-multitude of-the such when once come-to-be some
Πάντα μὲν γὰρ ταῦτα καὶ αὐτόματα συμβαίνει γίνεσθαι,
All indeed for these also spontaneous happen to-come-to-be
κατὰ λόγον δὲ καὶ ὑπαρξάντων συνίστασθαι μᾶλλον.
according-to reason but also being-present-first to-be-constituted more
Περιγίγνεσθαι γάρ τι περίττωμα πρὸς ἑκάστῳ τῆς ἀρχῆς
To-be-left-over for some residue at each of-the origin
εὔλογον, ἀφ' ἧς παραβλαστάνει τῶν παραφυομένων
reasonable from which buds-alongside of-the growing-alongside

ἕκαστον. Ἐπεὶ δὲ παραπλησίαν ἔχει τὴν δύναμιν ἡ τροφὴ
each Since and similar has the power the nourishment
καὶ τὸ ταύτης περίττωμα, τῶν κηριαζόντων ὁμοίαν εἰκός
and the of-it residue of-the honeycomb-makers like likely
ἐστιν εἶναι τῇ ἐξ ἀρχῆς συστάσει οὐσίαν. Διόπερ εὔλογον
it-is to-be to-the from beginning constitution substance Wherefore reasonable
γίνεσθαι καὶ ἐκ ταύτης. Ὅσα δὲ μήτε παραβλαστάνει
to-come-to-be also from this As-many-as but neither bud-alongside
μήτε κηριάζει, τούτων δὲ πάντων ἡ γένεσις αὐτόματός
nor make-honeycomb of-these but all the generation spontaneous
ἐστιν. Πάντα δὲ τὰ συνιστάμενα τὸν τρόπον τοῦτον
is All and the being-constituted the way this
καὶ ἐν γῇ καὶ ἐν ὕδατι φαίνεται γινόμενα μετὰ σήψεως
both in earth and in water appear coming-to-be with putrefaction
καὶ μιγνυμένου τοῦ ὀμβρίου ὕδατος. Ἀποκρινομένου γὰρ
and being-mixed the rain water Being-separated for
τοῦ γλυκέος εἰς τὴν συνισταμένην ἀρχὴν τὸ περιττεῦον
the sweet into the being-constituted origin the left-over
τοιαύτην λαμβάνει μορφήν. Γίνεται δ' οὐθὲν σηπόμενον
such takes shape Comes-to-be and nothing putrefying
ἀλλὰ πεττόμενον. Ἡ δὲ σῆψις καὶ τὸ σηπτὸν περίττωμα
but being-concocted The but putrefaction and the putrid residue
τοῦ πεφθέντος ἐστίν. Οὐθὲν γὰρ ἐκ παντὸς γίνεται,
of-the concocted is Nothing for from everything comes-to-be
καθάπερ οὐδ' ἐν τοῖς ὑπὸ τῆς τέχνης δημιουργουμένοις.
just-as not-even in the by the art crafted
Οὐθὲν γὰρ ἂν ἔδει ποιεῖν· νῦν δὲ τὸ μὲν ἡ τέχνη
Nothing for — it-would-need to-make now but the-one indeed the art
τῶν ἀχρήστων ἀφαιρεῖ, τὸ δ' ἡ φύσις. Γίνεται δ'
of-the useless takes-away the-other and the nature Come-to-be and
ἐν γῇ καὶ ἐν ὑγρῷ τὰ ζῷα καὶ τὰ φυτὰ διὰ τὸ
in earth and in moist the animals and the plants because-of the

ἐν γῇ μὲν ὕδωρ ὑπάρχειν, ἐν δ' ὕδατι πνεῦμα, ἐν
in earth indeed water to-be-present in and water breath in
δὲ τούτῳ παντὶ θερμότητα ψυχικήν, ὥστε τρόπον τινὰ
and this all heat soul-giving so-that in-a-way some
πάντα ψυχῆς εἶναι πλήρη. Διὸ συνίσταται ταχέως,
all of-soul to-be full Wherefore it-is-constituted quickly
ὁπόταν ἐμπεριληφθῇ. Ἐμπεριλαμβάνεται δὲ καὶ γίνεται
whenever it-be-enclosed It-is-enclosed and and comes-to-be
θερμαινομένων τῶν σωματικῶν ὑγρῶν οἷον ἀφρώδης
being-heated the bodily moist-things like frothy
πομφόλυξ. Αἱ μὲν οὖν διαφοραὶ τοῦ τιμιώτερον εἶναι τὸ
bubble The indeed then differences of-the more-honorable to-be the
γένος καὶ ἀτιμότερον τὸ συνιστάμενον ἐν τῇ περιλήψει τῆς
kind and less-honorable the being-constituted in the enclosing of-the
ἀρχῆς τῆς ψυχικῆς ἐστίν. Τούτου δὲ καὶ οἱ τόποι αἴτιοι καὶ
origin the soul-giving are Of-this and also the places causes and
τὸ σῶμα τὸ περιλαμβανόμενον. Ἐν δὲ τῇ θαλάττῃ πολὺ
the body the being-enclosed In but the sea much
τὸ γεῶδες ἔνεστιν· διόπερ ἐκ τῆς τοιαύτης συστάσεως
the earthy is-in wherefore from the such constitution
ἡ τῶν ὀστρακοδέρμων γίνεται φύσις, κύκλῳ μὲν τοῦ
the of-the testaceans comes-to-be nature round indeed the
γεώδους σκληρυνομένου καὶ πηγνυμένου τὴν αὐτὴν πῆξιν
earthy being-hardened and being-solidified the same solidification
τοῖς ὀστοῖς καὶ τοῖς κέρασι (πυρὶ γὰρ ἄτηκτα ταῦτ' ἐστίν),
to-the bones and to-the horns by-fire for unmeltable these are
ἐντὸς δὲ περιλαμβανομένου τοῦ τὴν ζωὴν ἔχοντος σώματος.
inside but being-enclosed of-the the life having body
Μόνον δὲ τῶν τοιούτων συνδυαζόμενον ἑώραται τὸ τῶν
Only and of-the such coupling has-been-seen the of-the
κοχλιῶν γένος. Εἰ δ' ἐκ τοῦ συνδυασμοῦ ἡ γένεσις αὐτῶν
snails kind If but from the coupling the generation of-them

ἐστὶν ἢ μή, οὔπω συνῶπται ἱκανῶς. Ζητήσειε δ' ἄν τις
is or not not-yet has-been-observed sufficiently Would-inquire and — someone
βουλόμενος ὀρθῶς ζητεῖν, τί τὸ κατὰ τὴν ὑλικὴν ἀρχὴν
wishing rightly to-inquire what the according-to the material principle
συνιστάμενόν ἐστιν ἐν τοῖς τοιούτοις. Ἐν μὲν γὰρ τοῖς
being-constituted is in the such In indeed for the
θήλεσι περίττωμά τι τοῦ ζῴου τοῦτ' ἐστίν, ὃ ἡ παρὰ
females residue some of-the animal this is which the from
τοῦ ἄρρενος ἀρχὴ κινοῦσα, δυνάμει τοιοῦτον ὂν οἷον ἀφ'
the male principle moving in-potentiality such being as from
οὗπερ ἦλθεν, ἀποτελεῖ τὸ ζῷον. Ἐνταῦθα δὲ τί δεῖ
which-very it-came completes the animal Here but what must-one
λέγειν τὸ τοιοῦτον, καὶ πόθεν καὶ τίς ἡ κινοῦσα ἀρχὴ ἡ
to-call the such and whence and what the moving principle the
κατὰ τὸ ἄρρεν; Δεῖ δὴ λαβεῖν ὅτι καὶ ἐν τοῖς
corresponding-to the male One-must indeed to-grasp that also in the
ζῴοις τοῖς γεννῶσιν ἐκ τῆς εἰσιούσης τροφῆς ἡ ἐν τῷ ζῴῳ
animals the generating from the entering nourishment the in the animal
θερμότης ἀποκρίνουσα καὶ συμπέττουσα ποιεῖ τὸ περίττωμα,
heat separating and concocting makes the residue
τὴν ἀρχὴν τοῦ κυήματος. Ὁμοίως δὲ καὶ ἐν φυτοῖς· πλὴν
the principle of-the fetus Likewise and also in plants except
ἐν μὲν τούτοις καὶ ἔν τισι τῶν ζῴων οὐθὲν προσδεῖται
in indeed these and in some of-the animals nothing needs-besides
τῆς τοῦ ἄρρενος ἀρχῆς (ἔχει γὰρ ἐν αὑτοῖς μεμιγμένην),
the of-the male principle they-have for in themselves mixed
τὸ δὲ τῶν πλείστων ζῴων περίττωμα προσδεῖται.
the but of-the most animals residue needs-besides
Τροφὴ δ' ἐστὶ τοῖς μὲν ὕδωρ καὶ γῆ, τοῖς δὲ τὰ
Nourishment and is for-the-ones indeed water and earth for-the-others and the
ἐκ τούτων, ὥσθ' ὅπερ ἡ ἐν τοῖς ζῴοις θερμότης ἐκ τῆς
from these so-that what-very the in the animals heat from the

τροφῆς ἀπεργάζεται, τοῦθ' ἡ τῆς ὥρας ἐν τῷ περιέχοντι
nourishment works-out this the of-the season in the surrounding
θερμότης ἐκ θαλάττης καὶ γῆς συγκρίνει πέττουσα καὶ
heat from sea and earth compounds concocting and
συνίστησιν. Τὸ δ' ἐναπολαμβανόμενον ἢ ἀποκρινόμενον ἐν
constitutes The and being-intercepted or being-separated in
τῷ πνεύματι τῆς ψυχικῆς ἀρχῆς κύημα ποιεῖ καὶ κίνησιν
the breath of-the soul-giving principle fetus makes and motion
ἐντίθησιν. Ἡ μὲν οὖν τῶν φυτῶν τῶν ἀπὸ ταὐτομάτου
puts-in The indeed then of-the plants the from spontaneity
γινομένων σύστασις ὁμοειδής ἐστιν· ἔκ τινος γὰρ μορίου
coming-to-be constitution uniform is from some for part
γίνεται, καὶ τὸ μὲν ἀρχὴ τὸ δὲ τροφὴ γίνεται ἡ
it-comes-to-be and the-one indeed principle the-other and nourishment becomes the
πρώτη τοῖς ἐκφυομένοις. Τὰ δὲ τῶν ζῴων σκωληκοτοκεῖται
first for-the growing-out The but of-the animals are-born-as-larvae
καὶ τῶν ἀναίμων ὅσα μὴ ἀπὸ ζῴων γίνεται καὶ τῶν
both of-the bloodless as-many-as not from animals come-to-be and of-the
ἐναίμων, οἷον γένος τι κεστρέων καὶ ἄλλων ποταμίων
blooded such-as kind some of-mullets and other river
ἰχθύων, ἔτι δὲ τὸ τῶν ἐγχέλεων γένος. Ἅπαντα γὰρ ταῦτα,
fish further and the of-the eels kind All for these
καίπερ ὀλίγαιμον ἔχοντα τὴν φύσιν, ὅμως ἔναιμά ἐστι,
although little-blooded having the nature nevertheless blooded are
καὶ καρδίαν ἔχουσι τὴν ἀρχὴν τὴν τῶν μορίων αἱματικήν.
and heart they-have the principle the of-the parts sanguineous
Τὰ δὲ καλούμενα γῆς ἔντερα σκώληκος ἔχει φύσιν, ἐν
The and so-called of-earth guts of-larva have nature in
οἷς ἐγγίνεται τὸ σῶμα τὸ τῶν ἐγχέλεων. Διὸ καὶ περὶ
which comes-to-be-in the body the of-the eels Wherefore also about
τῆς τῶν ἀνθρώπων καὶ τετραπόδων γενέσεως ὑπολάβοι
the of-the humans and quadrupeds generation would-suppose

τις ἄν, εἴπερ ἐγίγνοντό ποτε γηγενεῖς, ὥσπερ φασί
someone — if-indeed they-came-to-be ever earth-born just-as say
τινες, δύο τρόπων γίνεσθαι τὸν ἕτερον· ἢ γὰρ ὡς
some of-two ways to-come-to-be the one either for as
σκώληκος συνισταμένου τὸ πρῶτον ἢ ἐξ ᾠῶν. Ἀναγκαῖον
larva being-constituted the first or from eggs Necessary
γὰρ ἢ ἐν αὑτοῖς ἔχειν τὴν τροφὴν εἰς τὴν αὔξησιν (τὸ
for either in themselves to-have the nourishment for the growth the
δὲ τοιοῦτον κύημα σκώληξ ἐστίν) ἢ λαμβάνειν ἄλλοθεν,
but such fetus larva is or to-take from-elsewhere
τοῦτο δ' ἢ ἐκ τῆς γεννώσης ἢ ἐκ μορίου τοῦ κυήματος.
this and either from the generating-one or from part of-the fetus
Ὥστ' εἰ θάτερον ἀδύνατον, ἐπιρρεῖν ἐκ τῆς γῆς ὥσπερ ἐν
So-that if the-one impossible to-flow-in from the earth just-as in
τοῖς ἄλλοις ζῴοις ἐκ τῆς μητρός, ἀναγκαῖον ἐκ μορίου
the other animals from the mother necessary from part
λαμβάνειν τοῦ κυήματος· τὴν δὲ τοιαύτην ἐξ ᾠοῦ λέγομεν
to-take of-the fetus the but such from egg we-say
εἶναι γένεσιν. Ὅτι μὲν οὖν, εἴπερ ἦν τις ἀρχὴ τῆς
to-be generation That indeed then if-indeed there-was some beginning of-the
γενέσεως πᾶσι τοῖς ζῴοις, εὔλογον τοῖν δυοῖν τούτοιν εἶναι
generation for-all the animals reasonable of-the two these to-be
τὴν ἑτέραν, φανερόν· ἧττον δ' ἔχει λόγον ἐκ τῶν ᾠῶν.
the one plain less but has reason from the eggs
Οὐθενὸς γὰρ τοιαύτην ὁρῶμεν ζῴου γένεσιν, ἀλλὰ τὴν
Of-none for such we-see animal generation but the
ἑτέραν, καὶ τῶν ἐναίμων τῶν ῥηθέντων καὶ τῶν ἀναίμων.
other both of-the blooded the mentioned and of-the bloodless
Τοιαῦτα δ' ἐστὶ τῶν τ' ἐντόμων ἔνια καὶ τὰ ὀστρακόδερμα,
Such and are of-the both insects some and the testaceans
περὶ ὧν ὁ λόγος· οὐ γὰρ ἐκ μορίου γίνονταί τινος, ὥσπερ
about which the discourse not for from part they-come-to-be some just-as

τὰ ᾠοτοκούμενα. Ποιοῦνται δὲ καὶ τὴν αὔξησιν ὁμοίως τοῖς
the egg-born They-make and also the growth likewise to-the
σκώληξιν. Ἐπὶ τὰ ἄνω γὰρ καὶ τὴν ἀρχὴν αὐξάνονται
larvae Toward the upper-parts for and the origin grow
οἱ σκώληκες· ἐν τῷ κάτω γὰρ ἡ τροφὴ τοῖς ἄνω. Καὶ
the larvae in the lower for the nourishment for-the upper And
τοῦτό γε ὁμοίως ἔχει τοῖς ἐκ τῶν ᾠῶν, πλὴν ἐκεῖνα
this at-least likewise is to-the from the eggs except those
μὲν καταναλίσκει πᾶν, ἐν δὲ τοῖς σκωληκοτοκουμένοις,
indeed use-up all in but the larva-born
ὅταν αὐξηθῇ ἐκ τῆς ἐν τῷ κάτω μορίῳ συστάσεως τὸ
when it-be-grown from the in the lower part constitution the
ἄνω μόριον, οὕτως ἐκ τοῦ ὑπολοίπου διαρθροῦται τὸ
upper part so from the remainder is-articulated the
κάτωθεν. Αἴτιον δ' ὅτι καὶ ὕστερον ἡ τροφὴ ἐν τῷ
from-below Cause and that also later the nourishment in the
μορίῳ τῷ ὑπὸ τὸ ὑπόζωμα γίνεται πᾶσιν. Ὅτι δὲ τοῦτον
part the under the diaphragm comes-to-be for-all That and this
τὸν τρόπον ποιεῖται τὰ σκωληκώδη τὴν αὔξησιν, δῆλον
the way make the larva-like the growth clear
ἐπὶ τῶν μελιττῶν καὶ τῶν τοιούτων· κατ' ἀρχὰς γὰρ
in-the-case-of the bees and the such at beginnings for
τὸ μὲν κάτω μόριον μέγα ἔχουσι, τὸ δ' ἄνω ἔλαττον.
the indeed lower part large they-have the but upper smaller
Καὶ ἐπὶ τῶν ὀστρακοδέρμων δὲ τὸν αὐτὸν τρόπον ἔχει
And in-the-case-of the testaceans too the same way it-is
τὰ περὶ τὴν αὔξησιν. Φανερὸν δὲ καὶ τοῦτ' ἐπὶ τῶν
the about the growth Plain and also this in-the-case-of the
στρομβωδῶν ταῖς ἑλίκαις· ἀεὶ γὰρ αὐξανομένων γίνονται
spiral-shelled with-the coils always for being-grown become
πλείους ἐπὶ τὸ πρόσθιον καὶ τὴν καλουμένην κεφαλήν. Ὃν
more toward the front and the so-called head Which

μὲν οὖν τρόπον ἔχει ἡ γένεσις καὶ τούτων καὶ τῶν ἄλλων
indeed then way has the generation both of-these and of-the others
τῶν αὐτομάτων, εἴρηται σχεδόν· ὅτι δὲ συνίσταται
the spontaneous it-has-been-said nearly that and are-constituted
αὐτόματα πάντα τὰ ὀστρακόδερμα, φανερὸν ἐκ τῶν
spontaneous all the testaceans plain from the
τοιούτων, ὅτι πρός τε τοῖς πλοίοις γίνεται σηπομένης
such that at both the boats they-come-to-be putrefying
τῆς ἀφρώδους ἰλύος, καὶ πολλαχοῦ, οὗ πρότερον οὐθὲν
the frothy mud and in-many-places where before nothing
ὑπῆρχε τοιοῦτον, ὕστερον δι᾽ ἔνδειαν ὑγροῦ τοῦ τόπου
was-present such later because-of lack of-moist the place
βορβορωθέντος ἐγένετο τὰ καλούμενα λιμνόστρεα τῶν
having-become-muddy came-to-be the so-called lake-oysters of-the
ὀστρακηρῶν, οἷον περὶ Ῥόδον παραβαλόντος ναυτικοῦ
shell-bearers such-as about Rhodes having-put-in naval
στόλου καὶ ἐκβληθέντων κεραμίων εἰς τὴν θάλατταν,
fleet and having-been-thrown-out jars into the sea
χρόνου γενομένου καὶ βορβόρου περὶ αὐτὰ συναλισθέντος,
time having-passed and mud about them having-collected
ὄστρεα εὑρίσκοντ᾽ ἐν αὐτοῖς, ὅτι δ᾽ οὐδ᾽ ἀφίησι τὰ
oysters were-found in them that and not-even emit the
τοιαῦτα οὐθὲν ἀφ᾽ αὑτῶν γεννητικόν, τεκμήριον· ἐπεὶ
such anything from themselves generative proof since
γὰρ Χῖοί τινες ἐκ Πύρρας τῆς ἐν Λέσβῳ τῶν ὀστρέων
for Chians some from Pyrrha the in Lesbos of-the oysters
διεκόμισαν ζῶντα καὶ εἰς τόπους τινὰς τῆς θαλάττης
carried-across living and into places some of-the sea
εὐριπώδεις καὶ ὁμοίους ἀφεῖσαν, πλείω μὲν τῷ χρόνῳ
strait-like and similar released more indeed in-the time
οὐδὲν ἐγένετο, τὸ δὲ μέγεθος εἰς αὔξησιν ἐπέδωκε πολύ.
not came-to-be the but size into growth increased much

Τὰ δὲ λεγόμενα ὠὰ οὐθὲν συμβάλλεται πρὸς τὴν γένεσιν,
The and so-called eggs nothing contribute toward the generation
ἀλλ' ἐστὶν εὐτροφίας σημεῖον, οἷον ἐν τοῖς ἐναίμοις ἡ
but is of-good-nourishment sign as in the blooded the
πιότης· διὸ καὶ πρὸς τὴν ἐδωδὴν γίνεται εὔχυμα κατὰ
fatness wherefore also for the eating they-become well-flavored at
τοὺς καιροὺς τούτους. Σημεῖον δ' ὅτι τὰ τοιαῦτα ἀεὶ
the seasons these Sign and that the such always
ἔχουσιν, οἷον αἱ πίνναι καὶ οἱ κήρυκες καὶ αἱ πορφύραι, πλὴν
have such-as the pinnas and the whelks and the purple-fish except
ὁτὲ μὲν μείζω ὁτὲ δ' ἐλάττω. Ἔνια δ' οὐκ ἀεί, ἀλλὰ
at-times indeed larger at-times and smaller Some and not always but
τοῦ μὲν ἔαρος ἔχουσι, προβαινούσης δὲ φθίνει τῆς ὥρας,
in-the indeed spring have advancing and wane the season
καὶ τέλος ἀφανίζεται πάμπαν, οἷον οἵ τε κτένες καὶ οἱ μύες
and finally disappears altogether such-as the both scallops and the mussels
καὶ τὰ καλούμενα λιμνόστρεα· ἡ γὰρ ὥρα αὕτη συμφέρει
and the so-called lake-oysters the for season this benefits
τοῖς σώμασιν αὐτῶν. Τοῖς δὲ συμβαίνει τοιοῦτον οὐδὲν
the bodies of-them For-the-others and happens such nothing
ἐπίδηλον, οἷον τοῖς τηθύοις. Τὰ δὲ καθ' ἕκαστα περὶ τούτων,
evident such-as for-the sea-squirts The and in particular about these
καὶ ἐν οἷς γίνονται τόποις, ἐκ τῆς ἱστορίας θεωρείσθω.
and in which they-come-to-be places from the inquiry let-be-studied

BOOK IV

I · WHAT MAKES MALE AND FEMALE

Some say the sexes are fixed in the seeds, as Anaxagoras, male from the right and female from the left; others in the womb, as Empedocles, by its heat or cold, or Democritus, by whichever parent's seed prevails. Empedocles ignores the genitals and uterus, mixed twins share one part of the uterus, and testicle-tying is guesswork. The male can concoct the last nourishment into seed and the female cannot, so the male is hotter and the menses are unconcocted blood; when the male principle in the heart fails to master the matter, it turns to its opposite, and one vital part changes the whole animal, as eunuchs show.

Περὶ μὲν οὖν τῆς γενέσεως τῆς τῶν ζῴων εἴρηται
About indeed then the generation the of-the animals it-has-been-said
καὶ κοινῇ καὶ χωρὶς περὶ πάντων. Ἐπεὶ δ' ἐν
both in-common and separately about all Since and in
τοῖς τελεωτάτοις αὐτῶν ἐστὶ τὸ θῆλυ καὶ τὸ ἄρρεν
the most-complete of-them is the female and the male
κεχωρισμένον, καὶ ταύτας τὰς δυνάμεις ἀρχάς φαμεν εἶναι
separated and these the powers principles we-say to-be
πάντων καὶ ζῴων καὶ φυτῶν, ἀλλὰ τὰ μὲν αὐτὰς
of-all both animals and plants but the-ones indeed them
ἀχωρίστους ἔχει τὰ δὲ κεχωρισμένας, λεκτέον περὶ τῆς
inseparable have the-others and separated must-be-said about the
γενέσεως τῆς τούτων πρῶτον. Ἔτι γὰρ ἀτελῶν ὄντων ἐν
generation the of-these first Still for incomplete being in
τῷ γένει διορίζεται τὸ θῆλυ καὶ τὸ ἄρρεν. Πότερον δὲ καὶ
the kind is-distinguished the female and the male Whether and also
πρὶν δήλην τὴν διαφορὰν εἶναι πρὸς τὴν αἴσθησιν ἡμῶν
before clear the difference to-be to the perception of-us
τὸ μὲν θῆλυ τὸ δ' ἄρρεν ἐστίν, ἐν τῇ μητρὶ λαβόντα
the indeed female the and male is in the mother having-taken

τὴν διαφορὰν ἢ πρότερον, ἀμφισβητεῖται. Φασὶ γὰρ οἱ
the difference or earlier is-disputed Say for the-ones
μὲν ἐν τοῖς σπέρμασιν εἶναι ταύτην τὴν ἐναντίωσιν εὐθύς,
indeed in the seeds to-be this the opposition at-once
οἷον Ἀναξαγόρας καὶ ἕτεροι τῶν φυσιολόγων· γίνεσθαί
such-as Anaxagoras and others of-the natural-philosophers to-come-to-be
τε γὰρ ἐκ τοῦ ἄρρενος τὸ σπέρμα, τὸ δὲ θῆλυ παρέχειν
both for from the male the seed the but female to-provide
τὸν τόπον, καὶ εἶναι τὸ μὲν ἄρρεν ἐκ τῶν δεξιῶν τὸ δὲ
the place and to-be the indeed male from the right the but
θῆλυ ἐκ τῶν ἀριστερῶν, καὶ τῆς ὑστέρας τὰ μὲν ἄρρενα
female from the left and of-the uterus the indeed males
ἐν τοῖς δεξιοῖς εἶναι τὰ δὲ θήλεα ἐν τοῖς ἀριστεροῖς.
in the right to-be the but females in the left
Οἱ δ' ἐν τῇ μήτρᾳ, καθάπερ Ἐμπεδοκλῆς· τὰ μὲν
The-others and in the womb just-as Empedocles the-ones indeed
γὰρ εἰς θερμὴν ἐλθόντα τὴν ὑστέραν ἄρρενα γίνεσθαί φησι
for into hot having-come the uterus males to-come-to-be he-says
τὰ δ' εἰς ψυχρὰν θήλεα, τῆς δὲ θερμότητος καὶ τῆς
the-others and into cold females of-the and heat and of-the
ψυχρότητος τὴν τῶν καταμηνίων αἰτίαν εἶναι ῥύσιν, ἢ
coldness the of-the menses cause to-be flow either
ψυχροτέραν οὖσαν ἢ θερμοτέραν, καὶ ἢ παλαιοτέραν ἢ
colder being or hotter and either older or
προσφατωτέραν. Δημόκριτος δὲ ὁ Ἀβδηρίτης ἐν μὲν τῇ
more-recent Democritus and the Abderite in indeed the
μητρὶ γίνεσθαί φησι τὴν διαφορὰν τοῦ θήλεος καὶ τοῦ
mother to-come-to-be says the difference of-the female and of-the
ἄρρενος, οὐ μέντοι διὰ θερμότητά γε καὶ ψυχρότητα
male not however because-of heat at-least and coldness
τὸ μὲν γίγνεσθαι θῆλυ τὸ δ' ἄρρεν, ἀλλ' ὁποτέρου
the-one indeed to-come-to-be female the-other and male but of-whichever

ἂν κρατήσῃ τὸ σπέρμα τὸ ἀπὸ τοῦ μορίου ἐλθὸν ᾧ
— prevail the seed the from the part having-come by-which
διαφέρουσιν ἀλλήλων τὸ θῆλυ καὶ τὸ ἄρρεν. Τοῦτο γὰρ
differ from-one-another the female and the male This for
ὡς ἀληθῶς Ἐμπεδοκλῆς ῥαθυμότερον ὑπείληφεν, οἰόμενος
as truly Empedocles more-carelessly has-supposed thinking
ψυχρότητι καὶ θερμότητι διαφέρειν μόνον ἀλλήλων, ὁρῶν
by-coldness and by-heat to-differ only from-one-another seeing
ὅλα τὰ μόρια μεγάλην ἔχοντα διαφορὰν τήν τε τῶν αἰδοίων
whole the parts great having difference the both of-the genitals
καὶ τὴν τῆς ὑστέρας. Εἰ γὰρ πεπλασμένων τῶν ζῴων, τοῦ
and the of-the uterus If for having-been-molded the animals the-one
μὲν τὰ μόρια ἔχοντος τὰ τοῦ θήλεος πάντα, τοῦ δὲ τὰ
indeed the parts having the of-the female all the-other but the
τοῦ ἄρρενος, καθάπερ εἰς κάμινον εἰς τὴν ὑστέραν τεθείη,
of-the male just-as into furnace into the uterus should-be-placed
τὸ μὲν ἔχον ὑστέραν εἰς θερμήν, τὸ δὲ μὴ ἔχον εἰς ψυχράν,
the indeed having uterus into hot the but not having into cold
ἔσται θῆλυ τὸ οὐκ ἔχον ὑστέραν καὶ ἄρρεν τὸ ἔχον.
there-will-be female the not having uterus and male the having
Τοῦτο δ' ἀδύνατον. Ὥστε ταύτῃ γε βέλτιον ἂν λέγοι
This and impossible So-that in-this at-least better — would-speak
Δημόκριτος· ζητεῖ γὰρ ταύτης τῆς γενέσεως τὴν διαφορὰν
Democritus he-seeks for of-this the generation the difference
καὶ πειρᾶται λέγειν· εἰ δὲ καλῶς ἢ μὴ καλῶς, ἕτερος
and tries to-tell whether but well or not well other
λόγος. Ἀλλὰ μὴν κἂν ᾖ τῶν μορίων τῆς διαφορᾶς
account But truly even-if be of-the parts of-the difference
αἴτιον ἡ θερμότης καὶ ἡ ψυχρότης, τοῦτο λεκτέον ἦν
cause the heat and the coldness this must-be-said was
τοῖς ἐκείνως λέγουσιν· τοῦτο γάρ ἐστιν ὡς εἰπεῖν
by-those in-that-way speaking this for is so-to-speak —

τὸ λέγειν περὶ γενέσεως ἄρρενος καὶ θήλεος τοῦτο γὰρ
the to-speak about generation of-male and of-female this for
διαφέρει φανερῶς οὐ μικρόν τε ἔργον τὸ ἀπ᾽ ἐκείνης τῆς
differs plainly not small and task the from that the
ἀρχῆς περὶ τῆς γενέσεως τούτων τῶν μορίων τὴν αἰτίαν
principle about the generation of-these the parts the cause
συναγαγεῖν, ὡς ἀναγκαῖον ἀκολουθεῖν ψυχομένῳ μὲν τῷ
to-gather as necessary to-follow being-chilled indeed the
ζῴῳ γίνεσθαι τοῦτο τὸ μόριον ἢν καλοῦσιν ὑστέραν,
animal to-come-to-be this the part which they-call uterus
θερμαινομένῳ δὲ μὴ γίνεσθαι. Τὸν αὐτὸν δὲ τρόπον καὶ
being-heated but not to-come-to-be The same and way also
περὶ τῶν εἰς τὴν ὁμιλίαν συντελούντων μορίων· καὶ γὰρ
about the for the intercourse contributing parts also for
ταῦτα διαφέρει, καθάπερ εἴρηται πρότερον. Ἔτι δὲ
these differ just-as has-been-said before Further and
γίνεται δίδυμα θῆλυ καὶ ἄρρεν ἅμα ἐν τῷ αὐτῷ μορίῳ
come-to-be twins female and male together in the same part
πολλάκις τῆς ὑστέρας, καὶ τοῦθ᾽ ἱκανῶς τεθεωρήκαμεν
often of-the uterus and this sufficiently we-have-observed
ἐκ τῶν ἀνατομῶν ἐν πᾶσι τοῖς ζῳοτοκοῦσι, καὶ ἐν
from the dissections in all the live-bearing both in
τοῖς πεζοῖς καὶ ἐν τοῖς ἰχθύσιν· περὶ ὧν εἰ μὲν μὴ
the land and in the fish about which if indeed not
συνεωράκει, εὐλόγως ἡμάρτανε ταύτην τὴν αἰτίαν εἰπών, εἰ
he-had-observed reasonably he-erred this the cause stating if
δ᾽ ἑωρακώς, ἄτοπον τὸ ἔτι νομίζειν αἰτίαν εἶναι τὴν τῆς
but having-seen strange the still to-think cause to-be the of-the
ὑστέρας θερμότητα ἢ ψυχρότητα· ἄμφω γὰρ ἂν ἐγίνετο
uterus heat or coldness both for — would-come-to-be
ἢ θήλεα ἢ ἄρρενα, νῦν δὲ τοῦτ᾽ οὐχ ὁρῶμεν συμβαῖνον.
either females or males now but this not we-see happening

Λέγοντί τε τὰ μόρια διεσπάσθαι τοῦ γινομένου
For-him-saying both the parts to-have-been-torn-apart of-the coming-to-be
(τὰ μὲν γὰρ ἐν τῷ ἄρρενί φησιν εἶναι τὰ δ' ἐν
the-ones indeed for in the male he-says to-be the-others and in
τῷ θήλει, διὸ καὶ τῆς ἀλλήλων ὁμιλίας ἐπιθυμεῖν)
the female wherefore also the of-one-another intercourse to-desire
ἀναγκαῖον καὶ τῶν τοιούτων διῃρῆσθαι τὸ μέγεθος
necessary also of-the such to-have-been-divided the size
καὶ γίνεσθαι σύνοδον, ἀλλ' οὐ διὰ ψύξιν ἢ θερμασίαν.
and to-come-to-be union but not because-of chilling or heating
Ἀλλὰ περὶ μὲν τῆς τοιαύτης αἰτίας τοῦ σπέρματος τάχ'
But about indeed the such cause of-the seed perhaps
ἂν εἴη πολλὰ λέγειν· ὅλως γὰρ ἔοικεν ὁ τρόπος τῆς
— it-would-be much to-say generally for seems the manner of-the
αἰτίας πλασματώδης εἶναι. Εἰ δ' ἔστι περὶ σπέρματος
cause fictitious to-be If and it-is about seed
οὕτως ἔχον ὥσπερ τυγχάνομεν εἰρηκότες, καὶ μήτ' ἀπὸ
so being just-as we-happen having-said and neither from
παντὸς ἀπέρχεται μήθ' ὅλως τὸ ἀπὸ τοῦ ἄρρενος παρέχει
all it-departs nor at-all the from the male provides
τοῖς γινομένοις ὕλην μηδεμίαν, καὶ πρὸς τοῦτον καὶ
to-the coming-to-be matter any both toward this-one and
πρὸς Δημόκριτον, καὶ εἴ τις ἄλλος οὕτω τυγχάνει λέγων,
toward Democritus and if some other so happens speaking
ὁμοίως ἀπαντητέον. Οὔτε γὰρ διεσπασμένον ἐνδέχεται τὸ
likewise one-must-reply Neither for torn-apart is-possible the
σῶμα τοῦ σπέρματος εἶναι, τὸ μὲν ἐν τῷ θήλει τὸ
body of-the seed to-be the-one indeed in the female the-other
δ' ἐν τῷ ἄρρενι, καθάπερ Ἐμπεδοκλῆς φησὶν εἰπὼν
and in the male just-as Empedocles says saying

ἀλλὰ διέσπασται μελέων φύσις, ἡ μὲν ἐν ἀνδρός,
but has-been-torn-apart of-limbs nature the-one indeed in of-man

οὔτ' ἐξ ἑκατέρου πᾶν ἀποκρινόμενον, τῷ κρατῆσαί τι
nor from each whole being-separated by-the to-prevail some
μέρος ἄλλου μέρους γίνεσθαι τὸ μὲν θῆλυ τὸ δ'
part over-other part to-come-to-be the-one indeed female the-other and
ἄρρεν. Ὅλως δὲ τό γε τὴν τοῦ μέρους ὑπεροχὴν
male Generally and the at-least the of-the part excess
κρατήσασαν ποιεῖν θῆλυ βέλτιον μὲν ἢ μηθὲν φροντίσαντα
having-prevailed to-make female better indeed than nothing having-thought
τὸ θερμὸν αἰτιᾶσθαι μόνον, τὸ μέντοι συμβαίνειν ἅμα
the hot to-blame only the however to-happen together
καὶ τὴν τοῦ αἰδοίου μορφὴν ἑτέραν δεῖται λόγου πρὸς τὸ
also the of-the genital shape different needs account for the
συνακολουθεῖν ἀεὶ ταῦτ' ἀλλήλοις. Εἰ γὰρ ὅτι σύνεγγυς,
to-follow-along always these each-other If for because near
καὶ τῶν λοιπῶν ἕκαστον ἔδει μορίων ἀκολουθεῖν.
also of-the remaining each it-was-needful of-the-parts to-follow
Ἑτέρῳ γὰρ ἕτερον ἐγγὺς τῶν νικώντων, ὥστε ἅμα θῆλύ
To-another for other near of-the winning so-that together female
τ' ἂν ἦν καὶ τῇ μητρὶ ἐοικός, ἢ ἄρρεν καὶ τῷ
both — would-be and to-the mother like or male and to-the
πατρί. Ἔτι ἄτοπον καὶ τὸ μόνον ταῦτ' οἴεσθαι δεῖν
father Further strange also the only these to-think to-be-needed
γίγνεσθαι τὰ μόρια, καὶ μὴ τὸ σύνολον μεταβεβληκέναι
to-come-to-be the parts and not the whole to-have-changed
σῶμα, καὶ μάλιστα καὶ πρῶτον τὰς φλέβας, περὶ ἃς
body and most and first the veins about which
ὡς περὶ ὑπογραφὴν τὸ σῶμα περίκειται τὸ τῶν σαρκῶν.
as about outline the body lies-around the of-the fleshes

Ἃς οὐ διὰ τὴν ὑστέραν εὔλογον γενέσθαι ποιάς
Which not because-of the uterus reasonable to-become of-a-quality
τινας, ἀλλὰ μᾶλλον δι᾽ ἐκείνας τὴν ὑστέραν.
some but rather because-of those the uterus
Ὑποδοχὴ γὰρ αἵματός τινος ἑκάτερον, προτέρα δ᾽ ἡ τῶν
Receptacle for of-blood some each prior and the of-the
φλεβῶν. Τὴν δὲ κινοῦσαν ἀρχὴν ἀναγκαῖον ἀεὶ προτέραν
veins The but moving principle necessary always prior
εἶναι καὶ τῆς γενέσεως αἰτίαν τῷ ποιὰν εἶναί τινα.
to-be and of-the generation cause by-the of-a-quality to-be some
Συμβαίνει μὲν οὖν ἡ διαφορὰ τῶν μερῶν τούτων πρὸς
Happens indeed then the difference of-the parts these toward
ἄλληλα τοῖς θήλεσι καὶ τοῖς ἄρρεσιν, ἀλλ᾽ οὐκ ἀρχὴν
one-another to-the females and to-the males but not principle
οἰητέον οὐδ᾽ αἰτίαν εἶναι ταύτην, ἀλλ᾽ ἑτέραν, κἂν εἰ
one-must-think nor cause to-be this but other even if
μηθὲν ἀποκρίνεται σπέρμα μήτε ἀπὸ τοῦ θήλεος μήτ᾽
no is-separated seed either from the female or
ἀπὸ τοῦ ἄρρενος, ἀλλ᾽ ὅπως δή ποτε συνίσταται τὸ
from the male but however indeed ever is-constituted the
σπέρμα τὸ γιγνόμενον. Ὁ δ᾽ αὐτὸς λόγος καὶ πρὸς τοὺς
seed the coming-to-be The and same argument also against those
λέγοντας τὸ μὲν ἄρρεν ἀπὸ τῶν δεξιῶν εἶναι τὸ δὲ θῆλυ
saying the indeed male from the right to-be the but female
ἀπὸ τῶν ἀριστερῶν, ὅσπερ καὶ πρὸς Ἐμπεδοκλέα καὶ
from the left which-very also against Empedocles and
πρὸς Δημόκριτον. Εἴτε γὰρ μηδεμίαν ὕλην συμβάλλεται
against Democritus If-either for no matter contributes
τὸ ἄρρεν, οὐθὲν ἂν λέγοιεν οἱ λέγοντες οὕτως· εἴτε καὶ
the male nothing — they-would-say those speaking so or-if also
συμβάλλεται, καθάπερ φασίν, ὁμοίως ἀναγκαῖον ἀπαντᾶν
it-contributes just-as they-say likewise necessary to-meet

καὶ πρὸς τὸν Ἐμπεδοκλέους λόγον, ὃς διορίζει τὸ θῆλυ
also against the of-Empedocles argument who distinguishes the female
πρὸς τὸ ἄρρεν θερμότητι καὶ ψυχρότητι τῆς ὑστέρας.
from the male by-heat and by-coldness of-the uterus
Οἱ δὲ τὸ αὐτὸ ποιοῦσι, τοῖς δεξιοῖς καὶ τοῖς ἀριστεροῖς
They and the same do with-the right and with-the left
ὁρίζοντες, ὁρῶντες διαφέροντα τὸ θῆλυ καὶ τὸ ἄρρεν καὶ
defining seeing differing the female and the male also
μορίοις ὅλοις, ὧν διὰ τίν' αἰτίαν ὑπάρξει τοῖς ἐκ
by-parts whole of-which because-of what cause will-belong to-those from
τῶν ἀριστερῶν, τοῖς δ' ἐκ τῶν δεξιῶν οὐχ ὑπάρξει τὸ
the left to-those but from the right not will-belong the
σῶμα τὸ τῆς ὑστέρας; Ἂν γὰρ ἔλθῃ μὲν μὴ σχῇ δὲ τοῦτο
body the of-the uterus If for it-come indeed not have but this
τὸ μόριον, ἔσται θῆλυ οὐκ ἔχον ὑστέραν καὶ ἄρρεν ἔχον,
the part there-will-be female not having uterus and male having
ἂν τύχῃ. Ἔτι δ' ὅπερ εἴρηται καὶ πρότερον, ὥπται
if it-happen Further and which-very has-been-said also before has-been-seen
καὶ θῆλυ ἐν τῷ δεξιῷ μέρει τῆς ὑστέρας καὶ ἄρρεν ἐν τῷ
both female in the right part of-the uterus and male in the
ἀριστερῷ καὶ ἄμφω ἐν τῷ αὐτῷ μέρει, καὶ τοῦτ' οὐχ ὅτι
left and both in the same part and this not that
ἅπαξ ἀλλὰ πλεονάκις, ἢ τὸ ἄρρεν μὲν ἐν τοῖς δεξιοῖς,
once but more-often or the male indeed in the right
τὸ θῆλυ δ' ἐν τοῖς ἀριστεροῖς· οὐχ ἧττον δὲ ἀμφότερα
the female and in the left not less and both
γίνεται ἐν τοῖς δεξιοῖς. Παραπλησίως δέ τινες πεπεισμένοι
come-to-be in the right Similarly and some persuaded
τούτοις εἰσὶ καὶ λέγουσιν ὡς τὸν δεξιὸν ὄρχιν ἀποδουμένοις
to-these are and say that the right testis tying-off

ἢ τὸν ἀριστερὸν συμβαίνει τοῖς ὀχεύουσιν ἀρρενοτοκεῖν
or the left it-happens to-those mounting to-bear-males
ἢ θηλυτοκεῖν· οὕτω γὰρ καὶ Λεωφάνης ἔλεγεν.
or to-bear-females so for also Leophanes said
Ἐπί τε τῶν ἐκτεμνομένων τὸν ἕτερον ὄρχιν τὸ
In-the-case-of both the being-cut-out the one testis the
αὐτὸ τοῦτο συμβαίνειν τινές φασιν, οὐκ ἀληθῆ λέγοντες,
same this to-happen some say not true saying
ἀλλὰ μαντευόμενοι τὸ συμβησόμενον ἐκ τῶν εἰκότων,
but divining the going-to-happen from the likelihoods
καὶ προλαμβάνοντες ὡς οὕτως ἔχον πρὶν γινόμενον οὕτως
and anticipating as so being before coming-to-be so
ἰδεῖν, ἔτι δ' ἀγνοοῦντες ὡς οὐθὲν συμβάλλεται πρὸς τὴν
to-see further and not-knowing that nothing contributes toward the
γένεσιν τῆς ἀρρενογονίας καὶ θηλυγονίας τὰ μόρια ταῦτα
generation of-the male-bearing and female-bearing the parts these
τοῖς ζῴοις. Τούτου δὲ σημεῖον ὅτι πολλὰ τῶν ζῴων
for-the animals Of-this and sign that many of-the animals
αὐτά τε θήλεα καὶ ἄρρενά ἐστι, καὶ γεννᾷ τὰ μὲν θήλεα
themselves both female and male are and generate the indeed females
τὰ δ' ἄρρενα, ὄρχεις οὐκ ἔχοντα, καθάπερ τὰ μὴ ἔχοντα
the and males testes not having just-as the not having
πόδας, οἷον τό τε τῶν ἰχθύων γένος καὶ τὸ τῶν ὄφεων.
feet such-as the both of-the fish kind and the of-the snakes
Τὸ μὲν οὖν θερμότητα καὶ ψυχρότητα αἰτίαν οἴεσθαι
The indeed then heat and coldness cause to-think
τοῦ ἄρρενος καὶ τοῦ θήλεος, καὶ τὸ τὴν ἀπόκρισιν ἀπὸ
of-the male and of-the female and the the secretion from
τῶν δεξιῶν γίνεσθαι ἢ τῶν ἀριστερῶν, ἔχει τινὰ λόγον·
the right to-come-to-be or the left has some reason
θερμότερα γὰρ τὰ δεξιὰ τοῦ σώματος τῶν ἀριστερῶν,
hotter for the right of-the body than-the left

καὶ τὸ σπέρμα τὸ πεπεμμένον θερμότερον, τοιοῦτον δὲ
and the seed the concocted hotter such and
τὸ συνεστός, γονιμώτερον δὲ τὸ συνεστὸς μᾶλλον.
the constituted more-fertile and the constituted more
Ἀλλὰ λίαν τὸ λέγειν οὕτω πόρρωθέν ἐστιν ἅπτεσθαι
But very the to-speak so from-afar is to-touch
τῆς αἰτίας, δεῖ δ' ὅτι μάλιστα προσάγειν ἐκ τῶν
the cause one-must and as much-as-possible to-approach from the
ἐνδεχομένων ἐγγὺς τῶν πρώτων αἰτίων. Περὶ μὲν οὖν ὅλου
possible near the first causes About indeed then whole
τοῦ σώματος καὶ τῶν μορίων, τί τε ἕκαστόν ἐστι καὶ
the body and the parts what both each is and
διὰ τίν' αἰτίαν, εἴρηται πρότερον ἐν ἑτέροις. Ἀλλ' ἐπεὶ
because-of what cause it-has-been-said before in other-works But since
τὸ ἄρρεν καὶ τὸ θῆλυ διώρισται δυνάμει τινὶ καὶ ἀδυναμίᾳ
the male and the female are-distinguished by-capacity some and incapacity
(τὸ μὲν γὰρ δυνάμενον πέττειν καὶ συνιστάναι τε καὶ
the indeed for able to-concoct and to-constitute both and
ἐκκρίνειν σπέρμα ἔχον τὴν ἀρχὴν τοῦ εἴδους ἄρρεν· λέγω
to-secrete seed having the principle of-the form male I-call
δ' ἀρχὴν οὐ τὴν τοιαύτην ἐξ ἧς ὥσπερ ὕλης γίνεται
and principle not the such from which just-as from-matter comes-to-be
τοιοῦτον οἷον τὸ γεννῶν, ἀλλὰ τὴν κινοῦσαν πρώτην,
such as the generating but the moving first
ἐάν τ' ἐν αὐτῷ ἐάν τ' ἐν ἄλλῳ τοῦτο δύνηται ποιεῖν· τὸ
whether — in itself or — in other this it-can to-do the
δὲ δεχόμενον μὲν ἀδυνατοῦν δὲ συνιστάναι καὶ ἐκκρίνειν
but receiving indeed incapable but to-constitute and to-secrete
θῆλυ) ἔτι εἰ πᾶσα πέψις ἐργάζεται θερμῷ, ἀνάγκη καὶ
female further if all concoction works by-heat necessary also
τῶν ζῴων τὰ ἄρρενα τῶν θηλέων θερμότερα εἶναι. Διὰ
of-the animals the males than-the females hotter to-be Because-of

γὰρ ψυχρότητα καὶ ἀδυναμίαν πολυαιμεῖ κατὰ τόπους
for coldness and incapacity is-full-of-blood in places
τινὰς τὸ θῆλυ μᾶλλον· καὶ ἔστιν αὐτὸ τοὐναντίον σημεῖον
some the female more and is it the-opposite sign
ἢ δι' ἥνπερ αἰτίαν οἴονταί τινες τὸ θῆλυ θερμότερον
than because-of which-very cause think some the female hotter
εἶναι τοῦ ἄρρενος, διὰ τὴν τῶν καταμηνίων πρόεσιν.
to-be than-the male because-of the of-the menses discharge
Τὸ μὲν γὰρ αἷμα θερμόν, τὸ δὲ πλεῖον ἔχον μᾶλλον.
The indeed for blood hot the but more having more
Ὑπολαμβάνουσι δὲ τοῦτο γίνεσθαι τὸ πάθος δι'
They-suppose and this to-come-to-be the affection because-of
ὑπερβολὴν αἵματος καὶ θερμότητος, ὥσπερ ἐνδεχόμενον
excess of-blood and of-heat just-as possible
αἷμα εἶναι πᾶν ὁμοίως, ἄνπερ μόνον ὑγρὸν ᾖ καὶ τὴν χρόαν
blood to-be all likewise if-indeed only moist be and the color
αἱματῶδες, καὶ οὐκ ἔλαττον γινόμενον καὶ καθαρώτερον τοῖς
blood-like and not less coming-to-be and purer in-the
εὐτροφοῦσιν. Οἱ δ' ὥσπερ τὸ κατὰ τὴν κοιλίαν περίττωμα,
well-nourished They and just-as the in the belly residue
τὸ πλεῖον τοῦ ἐλάττονος οἴονται σημεῖον εἶναι θερμῆς
the more than-the less think sign to-be of-hot
φύσεως μᾶλλον. Καίτοι τοὐναντίον ἐστίν. Ὥσπερ γὰρ καὶ
nature more And-yet the-opposite is Just-as for also
ἐκ τῆς πρώτης τροφῆς ἐκ πολλῆς ὀλίγον ἀποκρίνεται τὸ
from the first nourishment from much little is-separated the
χρήσιμον ἐν ταῖς περὶ τοὺς καρποὺς ἐργασίαις, καὶ τέλος
useful in the about the fruits workings and finally
οὐθὲν μέρος τὸ ἔσχατον πρὸς τὸ πρῶτον πλῆθός ἐστιν,
no part the last compared-with the first multitude is
οὕτω πάλιν καὶ ἐν τῷ σώματι διαδεχόμενα τὰ μέρη ταῖς
so again also in the body succeeding-one-another the parts in-the

ἐργασίαις, τὸ τελευταῖον πάμπαν μικρὸν ἐξ ἁπάσης γίνεται
workings the last altogether small from all becomes
τῆς τροφῆς. Τοῦτο δὲ ἐν μέν τισιν αἷμά ἐστιν, ἐν δέ τισι
the nourishment This and in indeed some blood is in but others
τὸ ἀνάλογον. Ἐπεὶ δὲ τὸ μὲν δύναται τὸ δ' ἀδυνατεῖ
the analogous Since and the-one indeed can the-other but cannot
ἐκκρῖναι τὸ περίττωμα καθαρόν, ἁπάσῃ δὲ δυνάμει ὄργανόν
to-secrete the residue pure for-every and capacity instrument
τί ἐστι, καὶ τῇ χεῖρον ἀποτελούσῃ ταὐτὸ καὶ τῇ
some is and for-the worse accomplishing the-same and for-the
βέλτιον, τὸ δὲ θῆλυ καὶ τὸ ἄρρεν, πλεοναχῶς λεγομένου τοῦ
better the and female and the male in-many-senses being-said the
δυνατοῦ καὶ τοῦ ἀδυνάτου, τοῦτον ἀντίκειται τὸν τρόπον,
capable and the incapable this are-opposed the way
ἀνάγκη γὰρ καὶ τῷ θήλει καὶ τῷ ἄρρενι εἶναι ὄργανα,
necessary for both for-the female and for-the male to-be instruments
τῷ μὲν οὖν ἡ ὑστέρα τῷ δ' ὁ περίνεός ἐστιν.
for-the-one indeed then the uterus for-the-other and the perineum is
Ἅμα δ' ἡ φύσις τήν τε δύναμιν ἀποδίδωσιν ἑκάστῳ
At-the-same-time and the nature the both capacity gives to-each
καὶ τὸ ὄργανον· βέλτιον γὰρ οὕτως. Διὸ ἕκαστοι οἱ
and the instrument better for so Wherefore each the
τόποι ἅμα ταῖς ἐκκρίσεσι γίνονται καὶ ταῖς δυνάμεσιν,
places together-with the secretions come-to-be and with-the capacities
ὥσπερ οὔθ' ἡ ὄψις ἄνευ ὀφθαλμῶν οὔτ' ὀφθαλμὸς
just-as neither the sight without eyes nor eye
τελειοῦται ἄνευ ὄψεως, καὶ κοιλία καὶ κύστις ἅμα
is-completed without sight and belly and bladder together-with
τῷ δύνασθαι τὰ περιττώματα γίνεσθαι. Ὄντος δὲ τοῦ
the to-be-able the residues to-come-to-be Being and the
αὐτοῦ ἐξ οὗ τε γίνεται καὶ αὔξεται, τοῦτο δ' ἐστὶν ἡ
same from which both comes-to-be and grows this and is the

τροφή, ἕκαστον ἂν γίνοιτο τῶν μορίων ἐκ τοιαύτης
nourishment each — would-come-to-be of-the parts from such
ὕλης ἧς δεκτικόν ἐστι, καὶ τοιούτου περιττώματος.
matter of-which receptive it-is and such residue
Ἔτι δὲ γίνεται πάλιν, ὡς φαμέν, ἐκ τοῦ ἐναντίου πως.
Further and comes-to-be again as we-say from the opposite somehow
Τρίτον δὲ πρὸς τούτοις ληπτέον ὅτι εἴπερ ἡ
Third and in-addition-to these it-must-be-grasped that if-indeed the
φθορὰ εἰς τοὐναντίον, καὶ τὸ μὴ κρατούμενον ὑπὸ τοῦ
destruction into the-opposite also the not being-mastered by the
δημιουργοῦντος ἀνάγκη μεταβάλλειν εἰς τοὐναντίον. Τούτων
crafting necessary to-change into the-opposite These
δ' ὑποκειμένων ἴσως ἂν ἤδη μᾶλλον εἴη φανερὸν
and being-assumed perhaps — already more would-be plain
δι' ἣν αἰτίαν γίνεται τὸ μὲν θῆλυ τὸ δ' ἄρρεν.
because-of what cause comes-to-be the-one indeed female the-other and male
Ὅταν γὰρ μὴ κρατῇ ἡ ἀρχὴ μηδὲ δύνηται πέψαι δι'
When for not master the principle nor be-able to-concoct because-of
ἔνδειαν θερμότητος μηδ' ἀγάγῃ εἰς τὸ ἴδιον εἶδος τὸ αὐτοῦ,
lack of-heat nor bring into the own form the of-itself
ἀλλὰ ταύτῃ ἡττηθῇ, ἀνάγκη εἰς τοὐναντίον μεταβάλλειν.
but in-this be-defeated necessary into the-opposite to-change
Ἐναντίον δὲ τῷ ἄρρενι τὸ θῆλυ, καὶ ταύτῃ ᾗ τὸ μὲν
Opposite and to-the male the female and in-this in-which the-one indeed
ἄρρεν τὸ δὲ θῆλυ. Ἐπεὶ δ' ἔχει διαφορὰν ἐν τῇ δυνάμει,
male the-other and female Since and it-has difference in the capacity
ἔχει καὶ τὸ ὄργανον διαφέρον· ὥστ' εἰς τοιοῦτον μεταβάλλει.
it-has also the instrument differing so-that into such it-changes
Ἑνὸς δὲ μορίου ἐπικαίρου μεταβάλλοντος ὅλη ἡ σύστασις
One and part vital changing whole the constitution
τοῦ ζῴου πολὺ τῷ εἴδει διαφέρει. Ὁρᾶν δ' ἔξεστιν
of-the animal much in-the form differs To-see and it-is-possible

ἐπὶ τῶν εὐνούχων, οἳ ἑνὸς μορίου πηρωθέντος
in-the-case-of the eunuchs who one part having-been-maimed
τοσοῦτον ἐξαλλάττουσι τῆς ἀρχαίας μορφῆς καὶ μικρὸν
so-much alter from-the original shape and little
λείπουσι τοῦ θήλεος τὴν ἰδέαν. Τούτου δ' αἴτιον ὅτι ἔνια
fall-short of-the female in-the form Of-this and cause that some
τῶν μορίων ἀρχαί εἰσιν· ἀρχῆς δὲ κινηθείσης πολλὰ
of-the parts principles are principle and having-been-moved many
ἀνάγκη μεθίστασθαι τῶν ἀκολουθούντων. Εἰ οὖν τὸ μὲν
necessary to-shift of-the following If then the indeed
ἄρρεν ἀρχή τις καὶ αἴτιον, ἔστι δ' ἄρρεν ᾗ δύναταί
male principle some and cause is and male insofar-as it-can
τι, θῆλυ δὲ ᾗ ἀδυνατεῖ, τῆς δὲ δυνάμεως ὅρος
something female and insofar-as it-cannot of-the and capacity limit
καὶ τῆς ἀδυναμίας τὸ πεπτικὸν εἶναι ἢ μὴ πεπτικὸν τῆς
and of-the incapacity the concocting to-be or not concocting of-the
ὑστάτης τροφῆς, ὃ ἐν μὲν τοῖς ἐναίμοις αἷμα καλεῖται
last nourishment which in indeed the blooded blood is-called
ἐν δὲ τοῖς ἄλλοις τὸ ἀνάλογον, τούτου δὲ τὸ αἴτιον ἐν τῇ
in but the others the analogous of-this and the cause in the
ἀρχῇ καὶ τῷ μορίῳ τῷ ἔχοντι τὴν τῆς φυσικῆς θερμότητος
principle and the part the having the of-the natural heat
ἀρχήν, ἀναγκαῖον ἄρα ἐν τοῖς ἐναίμοις συνίστασθαι
principle necessary therefore in the blooded to-be-constituted
καρδίαν, καὶ ἢ ἄρρεν ἔσεσθαι ἢ θῆλυ τὸ γινόμενον.
heart and either male to-be-going-to-be or female the coming-to-be
Ἐν δὲ τοῖς ἄλλοις γένεσιν ὑπάρχει τὸ θῆλυ καὶ τὸ ἄρρεν
In and the other kinds is-present-in the female and the male
τὸ τῇ καρδίᾳ ἀνάλογον. Ἡ μὲν οὖν ἀρχὴ τοῦ θήλεος καὶ
the to-the heart analogous The indeed then principle of-the female and
ἄρρενος καὶ ἡ αἰτία αὕτη καὶ ἐν τούτῳ ἐστίν. Θῆλυ δ' ἤδη
male and the cause this and in this is Female and already

καὶ ἄρρεν ἐστίν, ὅταν ἔχῃ καὶ τὰ μόρια οἷς διαφέρει τὸ
and male it-is when it-have also the parts by-which differs the
θῆλυ τοῦ ἄρρενος. Οὐ γὰρ καθ' ὁτιοῦν μέρος ἄρρεν οὐδὲ
female from-the male Not for in any-whatever part male nor
θῆλυ, ὥσπερ οὐδ' ὁρῶν καὶ ἀκοῦον. Ἀναλαβόντες δὲ πάλιν
female just-as not-even seeing and hearing Taking-up and again
λέγομεν ὅτι τὸ μὲν σπέρμα ὑπόκειται περίττωμα τροφῆς
we-say that the indeed seed is-assumed residue of-nourishment
ὂν τὸ ἔσχατον. Ἔσχατον δὲ λέγω τὸ πρὸς ἕκαστον
being the last Last and I-call the to each
φερόμενον. Διὸ καὶ ἔοικε τὸ γεννώμενον τῷ γεννήσαντι.
being-carried Wherefore also resembles the generated to-the having-generated
Οὐθὲν γὰρ διαφέρει ἀφ' ἑκάστου τῶν μορίων ἀπελθεῖν
Nothing for it-differs from each of-the parts to-have-come-away
ἢ πρὸς ἕκαστον προσελθεῖν, ὀρθότερον δ' οὕτως. Διαφέρει
or to each to-have-come-to more-correct and so Differs
δὲ τὸ τοῦ ἄρρενος σπέρμα, ὅτι ἔχει ἀρχὴν ἐν ἑαυτῷ
and the of-the male seed in-that it-has principle in itself
τοιαύτην οἵαν κινεῖν καὶ ἐν τῷ ζῴῳ καὶ διαπέττειν τὴν
such as to-move also in the animal and to-concoct-through the
ἐσχάτην τροφήν, τὸ δὲ τοῦ θήλεος ὕλην μόνον.
last nourishment the but of-the female matter only
Κρατῆσαν μὲν οὖν εἰς αὐτὸ ἄγει, κρατηθὲν δ' εἰς
Having-prevailed indeed then into itself it-brings having-been-prevailed-over and into
τοὐναντίον μεταβάλλει ἢ εἰς φθοράν. Ἐναντίον δὲ τῷ ἄρρενι
the-opposite it-changes or into destruction Opposite and to-the male
τὸ θῆλυ. Θῆλυ δὲ τῇ ἀπεψίᾳ καὶ τῇ ψυχρότητι τῆς
the female Female and by-the non-concoction and by-the coldness of-the
αἱματικῆς τροφῆς. Ἡ δὲ φύσις ἑκάστῳ τῶν περιττωμάτων
sanguineous nourishment The and nature to-each of-the residues
ἀποδίδωσι τὸ δεκτικὸν μόριον. Τὸ δὲ σπέρμα περίττωμα.
gives the receptive part The and seed residue

Τοῦτο δὲ τοῖς μὲν θερμοτέροις καὶ ἄρρεσι τῶν ἐναίμων
This and in-the indeed hotter and males of-the blooded
εὔογκον τῷ πλήθει, διὸ τὰ δεκτικὰ μόρια πόροι ταύτης
bulky in-the quantity wherefore the receptive parts ducts of-this
τῆς περιττώσεώς εἰσι τοῖς ἄρρεσιν. Τοῖς δὲ θήλεσι δι'
the residue are for-the males For-the but females because-of
ἀπεψίαν πλῆθος αἱματικόν (ἀκατέργαστον γάρ), ὥστε καὶ
non-concoction quantity sanguineous unworked-up for so-that also
μόριον δεκτικὸν ἀναγκαῖον εἶναί τι, καὶ εἶναι τοῦτο ἀνόμοιον
part receptive necessary to-be some and to-be this unlike
καὶ μέγεθος ἔχειν. Διὸ τῆς ὑστέρας τοιαύτη ἡ φύσις
and size to-have Wherefore of-the uterus such the nature
ἐστίν. Τούτῳ δὲ τὸ θῆλυ διαφέρει τῷ μορίῳ τοῦ ἄρρενος.
is By-this and the female differs by-the part from-the male

II · SIGNS OF THE ACCOUNT

The facts agree: the young and the aging bear more females, moister, more womanish bodies and liquid seeds produce females, and north winds give more males than south winds, as the moon's waning gives the menses. Herdsmen say even the direction an animal faces in mating matters. Male and female need a proportion to one another, as cooking needs the right heat; so some couples cannot breed together but can apart, and waters and countries differ in fertility for the same cause.

Διὰ τίνα μὲν οὖν αἰτίαν γίνεται τὸ μὲν θῆλυ
Because-of what indeed then cause comes-to-be the-one indeed female
τὸ δ' ἄρρεν, εἴρηται. Τεκμήρια δὲ τὰ συμβαίνοντα
the-other and male it-has-been-said Proofs and the agreeing
τοῖς εἰρημένοις. Τά τε γὰρ νέα θηλυτόκα μᾶλλον
with-the said The both for young female-bearing more
τῶν ἀκμαζόντων, καὶ γηράσκοντα μᾶλλον· τοῖς μὲν
than-the in-their-prime and aging more for-the-ones indeed

γὰρ οὔπω τέλειον τὸ θερμόν, τοῖς δ' ἀπολείπει.
for not-yet complete the heat for-the-others and it-fails
Καὶ τὰ μὲν ὑγρότερα τῶν σωμάτων καὶ γυναικικώτερα
And the indeed moister of-the bodies and more-womanish
θηλυγόνα μᾶλλον, καὶ τὰ σπέρματα τὰ ὑγρὰ τῶν
female-producing more and the seeds the moist than-the
συνεστηκότων· πάντα γὰρ ταῦτα γίνεται δι' ἔνδειαν
constituted all for these come-to-be because-of lack
θερμότητος φυσικῆς. Καὶ τὸ βορείοις ἀρρενοτοκεῖν
of-heat natural And the in-north-winds to-bear-males
μᾶλλον ἢ νοτίοις· ὥστε καὶ περιττωματικώτερα. Τὸ
more than in-south-winds so-that also more-residual The
δὲ πλεῖον περίττωμα δυσπεπτότερον· διὸ τοῖς μὲν
and more residue harder-to-concoct wherefore for-the indeed
ἄρρεσιν ὑγρότερον τὸ σπέρμα, ταῖς δὲ γυναιξὶν ἡ τῶν
males moister the seed for-the and women the of-the
καταμηνίων ἔκκρισις. Καὶ τὸ γίνεσθαι δὲ τὰ καταμήνια
menses discharge Also the to-come-to-be and the menses
τὰ κατὰ φύσιν φθινόντων τῶν μηνῶν μᾶλλον διὰ
the according-to nature waning the months more because-of
τὴν αὐτὴν αἰτίαν συμβαίνει. Ψυχρότερος γὰρ ὁ χρόνος
the same cause happens Colder for the time
οὗτος τοῦ μηνὸς καὶ ὑγρότερος διὰ τὴν φθίσιν καὶ
this of-the month and moister because-of the waning and
τὴν ἀπόλειψιν τῆς σελήνης· ὁ μὲν γὰρ ἥλιος ἐν ὅλῳ τῷ
the failing of-the moon the indeed for sun in whole the
ἐνιαυτῷ ποιεῖ χειμῶνα καὶ θέρος, ἡ δὲ σελήνη ἐν τῷ μηνί.
year makes winter and summer the but moon in the month
Τοῦτο δ' οὐ διὰ τὰς τροπάς, ἀλλὰ τὸ μὲν
This and not because-of the solstices but the-one indeed
αὐξανομένου συμβαίνει τοῦ φωτός, τὸ δὲ φθίνοντος.
waxing happens the light the-other and waning

Φασὶ δὲ καὶ οἱ νομεῖς διαφέρειν πρὸς θηλυγονίαν καὶ
Say and also the herdsmen to-make-a-difference toward female-production and
ἀρρενογονίαν οὐ μόνον ἐὰν συμβαίνῃ τὴν ὀχείαν γίνεσθαι
male-production not only if it-happen the copulation to-come-about
βορείοις ἢ νοτίοις, ἀλλὰ κἂν ὀχευόμενα βλέπῃ πρὸς
in-north-winds or in-south-winds but even-if mounting they-look toward
νότον ἢ βορέαν· οὕτω μικρὰν ἐνίοτε ῥοπὴν αἰτίαν γίνεσθαι
south or north so small sometimes inclination cause to-become
τῆς ψυχρότητος καὶ θερμότητος, ταῦτα δὲ τῆς γενέσεως.
of-the coldness and heat these and of-the generation
Διέστηκε μὲν οὖν ὅλως πρὸς ἄλληλα τό τε θῆλυ καὶ τὸ
Stand-apart indeed then wholly from one-another the both female and the
ἄρρεν πρὸς τὴν ἀρρενογονίαν καὶ θηλυγονίαν διὰ τὰς
male toward the male-production and female-production because-of the
εἰρημένας αἰτίας, οὐ μὴν ἀλλὰ καὶ δεῖ συμμετρίας
said causes not truly but also there-must-be proportion
πρὸς ἄλληλα· πάντα γὰρ τὰ γινόμενα κατὰ τέχνην ἢ
toward one-another all for the coming-to-be by art or
φύσιν λόγῳ τινί ἐστιν. Τὸ δὲ θερμὸν λίαν μὲν κρατοῦν
nature by-ratio some is The and heat too indeed prevailing
ξηραίνει τὰ ὑγρά, πολὺ δὲ ἐλλεῖπον οὐ συνίστησιν,
dries the moist-things much but falling-short not constitutes
ἀλλὰ δεῖ πρὸς τὸ δημιουργούμενον ἔχειν τὸν τοῦ μέσου
but it-must toward the being-crafted to-have the of-the mean
λόγον. Εἰ δὲ μή, καθάπερ ἐν τοῖς ἑψομένοις προσκάει μὲν
ratio If but not just-as in the being-boiled burns indeed
τὸ πλεῖον πῦρ, οὐχ ἕψει δὲ τὸ ἔλαττον, ἀμφοτέρως δὲ
the more fire not boils but the less in-both-ways and
συμβαίνει μὴ τελειοῦσθαι τὸ γινόμενον, οὕτω καὶ ἐν τῇ τοῦ
it-happens not to-be-completed the coming-to-be so also in the of-the
ἄρρενος μίξει καὶ τοῦ θήλεος δεῖ τῆς συμμετρίας.
male mixing and of-the female there-must-be the proportion

Καὶ διὰ τοῦτο πολλοῖς καὶ πολλαῖς συμβαίνει μετ'
And because-of this to-many-men and to-many-women it-happens with
ἀλλήλων μὲν μὴ γεννᾶν, διαζευχθεῖσι δὲ γεννᾶν, καὶ ὁτὲ
one-another indeed not to-generate having-been-separated but to-generate and at-times
μὲν νέοις ὁτὲ δὲ πρεσβυτέροις οὖσι ταύτας γίνεσθαι
indeed young at-times and older being these to-come-about
τὰς ὑπεναντιώσεις, ὁμοίως περί τε γένεσιν καὶ ἀγονίαν καὶ
the contrarieties likewise about both generation and barrenness and
ἀρρενογονίαν καὶ θηλυγονίαν. Διαφέρει δὲ καὶ χώρα χώρας
male-production and female-production Differs and also country from-country
εἰς ταῦτα καὶ ὕδωρ ὕδατος διὰ τὰς αὐτὰς αἰτίας. Ποιὰ
for these and water from-water because-of the same causes Of-a-quality
γάρ τις ἡ τροφὴ γίνεται μάλιστα, καὶ τοῦ σώματος ἡ
for some the nourishment becomes most and of-the body the
διάθεσις, διά τε τὴν κρᾶσιν τοῦ περιεστῶτος ἀέρος καὶ
disposition because-of both the blend of-the surrounding air and
τῶν εἰσιόντων, μάλιστα δὲ διὰ τὴν τοῦ ὕδατος τροφήν·
of-the entering-things most and because-of the of-the water nourishment
τοῦτο γὰρ πλεῖστον εἰσφέρονται, καὶ ἐν πᾶσίν ἐστὶ τροφὴ
this for most they-take-in and in all is nourishment
τοῦτο, καὶ ἐν τοῖς ξηροῖς. Διὸ καὶ τὰ ἀτέραμνα ὕδατα
this even in the dry Wherefore also the hard waters
καὶ ψυχρὰ τὰ μὲν ἀτεκνίαν ποιεῖ τὰ δὲ θηλυτοκίαν.
and cold the-ones indeed childlessness make the-others and female-bearing

The same causes explain why offspring resemble the father or the mother, in the whole or in parts, or the ancestors, or no one, so that a child unlike its parents is already in a way a monster, and the female the first departure. The begetter is not only male but such a male, Coriscus or Socrates; a motion in the seed that does not prevail departs to its opposite, or relaxes into the nearest, father's to grandfather's. Pangenesis fails, and the mixed seed is the better account but unclear; a calf with a child's head is only a likeness, since gestation times differ.

Αἱ δ' αὐταὶ αἰτίαι καὶ τοῦ τὰ μὲν ἐοικότα γίνεσθαι
The and same causes also of-the the-ones indeed resembling to-become
τοῖς τεκνώσασι τὰ δὲ μὴ ἐοικότα, καὶ τὰ μὲν πατρὶ
the parents the-others and not resembling and the-ones indeed the-father
τὰ δὲ μητρί, κατά τε ὅλον τὸ σῶμα καὶ κατὰ
the-others and the-mother according-to both whole the body and according-to
μόριον ἕκαστον, καὶ μᾶλλον, αὐτοῖς ἢ τοῖς προγόνοις,
part each and more them than the ancestors
καὶ τούτοις ἢ τοῖς τυχοῦσι, καὶ τὰ μὲν ἄρρενα μᾶλλον
and these than the chance-ones and the indeed males more
τῷ πατρὶ τὰ δὲ θήλεα τῇ μητρί, τὰ δ' οὐδενὶ τῶν
the father the but females the mother the-others and none of-the
συγγενῶν, ὅμως δ' ἀνθρώπῳ γέ τινι, τὰ δ'
kin nevertheless and a-human at-least some the-others and
οὐδ' ἀνθρώπῳ τὴν ἰδέαν ἀλλ' ἤδη τέρατι. Καὶ γὰρ ὁ
not-even a-human in-the form but already a-monster And for the
μὴ ἐοικὼς τοῖς γονεῦσιν ἤδη τρόπον τινὰ τέρας ἐστίν·
not resembling the parents already in-a-way some monster is
παρεκβέβηκε γὰρ ἡ φύσις ἐν τούτοις ἐκ τοῦ γένους
has-departed for the nature in these from the kind
τρόπον τινά. Ἀρχὴ δὲ πρώτη τὸ θῆλυ γενέσθαι καὶ μὴ
in-a-way some Beginning and first the female to-come-to-be and not

ἄρρεν. Ἀλλ' αὕτη μὲν ἀναγκαία τῇ φύσει· δεῖ γὰρ
male But this indeed necessary to-the nature it-must for
σώζεσθαι τὸ γένος τῶν κεχωρισμένων κατὰ τὸ θῆλυ καὶ
to-be-preserved the kind of-the separated by the female and
τὸ ἄρρεν. Ἐνδεχομένου δὲ μὴ κρατεῖν ποτὲ τοῦ ἄρρενος
the male It-being-possible and not to-prevail sometimes the male
ἢ διὰ νεότητα ἢ γῆρας ἢ δι' ἄλλην τινὰ αἰτίαν
either because-of youth or age or because-of other some cause
τοιαύτην, ἀνάγκη γίνεσθαι θηλυτοκίαν ἐν τοῖς ζῴοις.
such necessary to-come-about female-bearing in the animals
Τὸ δὲ τέρας οὐκ ἀναγκαῖον πρὸς τὴν ἕνεκά του
The but monster not necessary with-respect-to the for-the-sake of-something
καὶ τὴν τοῦ τέλους αἰτίαν, ἀλλὰ κατὰ συμβεβηκὸς
and the of-the end cause but by accident
ἀναγκαῖον, ἐπεὶ τήν γ' ἀρχὴν ἐντεῦθεν δεῖ λαμβάνειν.
necessary since the at-least principle from-here one-must to-take
Εὐπέπτου μὲν γὰρ οὔσης τῆς περιττώσεως ἐν τοῖς
Well-concocted indeed for being the residue in the
καταμηνίοις τῆς σπερματικῆς, καθ' αὑτὴν ποιήσει τὴν
menses the seminal by itself will-make the
μορφὴν ἡ τοῦ ἄρρενος κίνησις. Τὸ γὰρ γονὴν λέγειν ἢ
form the of-the male motion The for semen to-call or
κίνησιν τὴν αὔξουσαν ἕκαστον τῶν μορίων οὐθὲν διαφέρει,
motion the increasing each of-the parts nothing differs
οὐδὲ τὴν αὔξουσαν ἢ τὴν συνιστᾶσαν ἐξ ἀρχῆς· ὁ γὰρ
nor the increasing or the constituting from beginning the for
αὐτὸς λόγος τῆς κινήσεως. Ὥστε κρατούσης μὲν ἄρρεν
same ratio of-the motion So-that prevailing indeed male
τε ποιήσει καὶ οὐ θῆλυ, καὶ ἐοικὸς τῷ γεννῶντι ἀλλ' οὐ
both it-will-make and not female and resembling the generator but not
τῇ μητρί· μὴ κρατῆσαν δέ, καθ' ὁποίαν ἂν μὴ κρατήσῃ
the mother not having-prevailed and in whichever — not it-prevail

δύναμιν, τὴν ἔλλειψιν ποιεῖ κατ' αὐτήν. Λέγω δ' ἑκάστην
capacity the deficiency makes according-to it I-mean and each
δύναμιν τόνδε τὸν τρόπον. Τὸ γεννῶν ἐστὶν οὐ μόνον
capacity this the way The generating is not only
ἄρρεν ἀλλὰ καὶ τοῖον ἄρρεν, οἷον Κορίσκος ἢ Σωκράτης,
male but also such male such-as Coriscus or Socrates
καὶ οὐ μόνον Κορίσκος ἐστὶν ἀλλὰ καὶ ἄνθρωπος.
and not only Coriscus is but also human
Καὶ τοῦτον δὴ τὸν τρόπον τὰ μὲν ἐγγύτερον τὰ
And this indeed the way the-ones indeed nearer the-others
δὲ πορρώτερον ὑπάρχει τῷ γεννῶντι, καθὸ γεννητικόν,
and farther belong to-the generator insofar-as generative
ἀλλ' οὐ κατὰ συμβεβηκός, οἷον εἰ γραμματικὸς ὁ γεννῶν
but not by accident such-as if grammarian the generator
ἢ γείτων τινός, ἀεὶ δ' ἰσχύει πρὸς τὴν γένεσιν μᾶλλον
or neighbor of-someone always and prevails toward the generation more
τὸ ἴδιον καὶ τὸ καθ' ἕκαστον. Ὁ γὰρ Κορίσκος καὶ
the peculiar and the according-to each — for Coriscus both
ἄνθρωπός ἐστι καὶ ζῷον· ἀλλ' ἐγγύτερον τοῦ ἰδίου ὁ
human is and animal but nearer to-the peculiar the
ἄνθρωπος ἢ τὸ ζῷον. Γεννᾷ δὲ καὶ τὸ καθ' ἕκαστον
human than the animal Generates and both the according-to each
καὶ τὸ γένος, ἀλλὰ μᾶλλον τὸ καθ' ἕκαστον· τοῦτο γὰρ
and the kind but more the according-to each this for
ἡ οὐσία. Καὶ γὰρ τὸ γινόμενον γίνεται μὲν καὶ ποιόν
the substance And for the coming-to-be comes-to-be indeed also of-a-quality
τι, ἀλλὰ τόδε τι καὶ τοῦθ' ἡ οὐσία. Διόπερ ἀπὸ
something but this something and this the substance Wherefore from
τῶν δυνάμεων ὑπάρχουσιν αἱ κινήσεις ἐν τοῖς σπέρμασι
the capacities belong the motions in the seeds
πάντων τῶν τοιούτων, δυνάμει δὲ καὶ τῶν προγόνων,
of-all the such in-potentiality and also of-the ancestors

μᾶλλον δὲ τοῦ ἐγγύτερον ἀεὶ τῶν καθ' ἕκαστόν
more but of-the nearer always of-the according-to each
τινος. Λέγω δὲ καθ' ἕκαστον τὸν Κορίσκον καὶ τὸν
some I-mean and according-to each — Coriscus and —
Σωκράτην. Ἐπεὶ δ' ἐξίσταται πᾶν οὐκ εἰς τὸ τυχὸν ἀλλ'
Socrates Since and departs everything not into the chance but
εἰς τὸ ἀντικείμενον, καὶ τὸ ἐν τῇ γενέσει μὴ κρατούμενον
into the opposite also the in the generation not being-mastered
ἀναγκαῖον ἐξίστασθαι καὶ γίνεσθαι τὸ ἀντικείμενον, καθ'
necessary to-depart and to-become the opposite in
ἣν δύναμιν οὐκ ἐκράτησε τὸ γεννῶν καὶ κινοῦν.
which capacity not prevailed the generating and moving
Ἐὰν μὲν οὖν ᾖ ἄρρεν, θῆλυ γίνεται, ἐὰν δὲ ᾖ
If indeed then insofar-as male female it-becomes if but insofar-as
Κορίσκος ἢ Σωκράτης, οὐ τῷ πατρὶ ἐοικὸς ἀλλὰ τῇ μητρὶ
Coriscus or Socrates not to-the father resembling but to-the mother
γίνεται· ἀντίκειται γὰρ ὥσπερ τῷ ὅλῳ πατρὶ μήτηρ, καὶ
it-becomes is-opposed for just-as to-the whole father mother and
τῷ καθ' ἕκαστον γεννῶντι ἡ καθ' ἕκαστον γεννῶσα.
to-the according-to each generator the according-to each generatrix
Ὁμοίως δὲ καὶ κατὰ τὰς ἐχομένας δυνάμεις· ἀεὶ γὰρ εἰς
Likewise and also according-to the adjoining capacities always for into
τὸν ἐχόμενον μεταβαίνει μᾶλλον τῶν προγόνων, καὶ ἐπὶ
the adjoining it-passes more of-the ancestors both in-the-case-of
πατέρων καὶ μητέρων. Ἔνεισι δ' αἱ μὲν ἐνεργείᾳ τῶν
fathers and mothers Are-in and the-ones indeed in-actuality of-the
κινήσεων, αἱ δὲ δυνάμει, ἐνεργείᾳ μὲν αἱ τοῦ γεννῶντος
motions the-others and in-potentiality in-actuality indeed the of-the generator
καὶ τῶν καθόλου, οἷον ἀνθρώπου καὶ ζῴου, δυνάμει δὲ
and of-the universals such-as of-human and of-animal in-potentiality and
αἱ τοῦ θήλεος καὶ τῶν προγόνων. Μεταβάλλει μὲν οὖν
the of-the female and of-the ancestors Changes indeed then

ἐξιστάμενον πρὸς τὰ ἀντικείμενα, λύονται δὲ αἱ κινήσεις
departing toward the opposites are-relaxed and the motions
αἱ δημιουργοῦσαι εἰς τὰς ἐγγύς, οἷον ἡ τοῦ γεννῶντος ἂν
the crafting into the near-ones such-as the of-the generator if
λυθῇ κίνησις, ἐλαχίστῃ διαφορᾷ μεταβαίνει εἰς τὴν τοῦ
be-relaxed motion by-least difference it-passes into the of-the
πατρός, δεύτερον δ' εἰς τὴν τοῦ πάππου· καὶ τοῦτον δὴ τὸν
father second and into the of-the grandfather and this indeed the
τρόπον καὶ ἐπὶ τῶν ἀρρένων καὶ ἐπὶ τῶν θηλειῶν
way both in-the-case-of the males and in-the-case-of the females
ἡ τῆς γεννώσης εἰς τὴν τῆς μητρός, ἐὰν δὲ μὴ εἰς ταύτην,
the of-the generatrix into the of-the mother if but not into this
εἰς τὴν τῆς τήθης· ὁμοίως δὲ καὶ ἐπὶ τῶν ἄνωθεν.
into the of-the grandmother likewise and also in-the-case-of the from-above
Μάλιστα μὲν οὖν πέφυκεν ᾗ ἄρρεν καὶ ᾗ πατήρ,
Most indeed then it-is-natural insofar-as male and insofar-as father
ἅμα κρατεῖν καὶ κρατεῖσθαι. Μικρὰ γὰρ ἡ διαφορά, ὥστ'
together to-prevail and to-be-prevailed-over Small for the difference so-that
οὐκ ἔργον ἅμα συμβῆναι ἀμφότερα· ὁ γὰρ Σωκράτης ἀνὴρ
not task together to-happen both — for Socrates man
τοιόσδε τις. Διὸ ὡς ἐπὶ τὸ πολὺ τὰ μὲν ἄρρενα τῷ
such-and-such some Wherefore as for the most-part the indeed males the
πατρὶ ἔοικεν, τὰ δὲ θήλεα τῇ μητρί. Ἅμα γὰρ εἰς ἄμφω
father resemble the but females the mother Together for into both
ἔκστασις ἐγένετο, ἀντίκειται δὲ τῷ μὲν ἄρρενι τὸ θῆλυ
departure came-about is-opposed and to-the indeed male the female
τῷ δὲ πατρὶ ἡ μήτηρ· ἡ δ' ἔκστασις εἰς τἀντικείμενα.
to-the and father the mother the and departure into the-opposites
Ἐὰν δ' ἡ μὲν ἀπὸ τοῦ ἄρρενος κρατήσῃ κίνησις, ἡ δ'
If but the indeed from the male prevail motion the but
ἀπὸ τοῦ Σωκράτους μὴ κρατήσῃ, ἢ αὕτη μὲν ἐκείνη δὲ
from — Socrates not prevail or this indeed that but

μή, τότε συμβαίνει γίνεσθαι ἄρρενά τε μητρὶ ἐοικότα καὶ
not then it-happens to-come-to-be males both mother resembling and
θήλεα πατρί. Ἐὰν δὲ λυθῶσιν αἱ κινήσεις, καὶ ᾗ μὲν
females father If and be-relaxed the motions and insofar-as indeed
ἄρρεν μείνῃ, ᾗ δὲ τοῦ Σωκράτους λυθῇ εἰς τὴν τοῦ
male it-remain the but — of-Socrates be-relaxed into the of-the
πατρός, ἔσται ἄρρεν τῷ πάππῳ ἐοικὸς ἢ τῶν ἄλλων
father there-will-be male the grandfather resembling or of-the others
τινὶ τῶν ἄνωθεν προγόνων κατὰ τοῦτον τὸν λόγον.
some of-the from-above ancestors according-to this the ratio
Κρατηθέντος δὲ ᾗ ἄρρεν, θῆλυ ἔσται, καὶ
Having-been-prevailed-over and insofar-as male female there-will-be and
ἐοικὸς μάλιστα μὲν τῇ μητρί, ἐὰν δὲ καὶ αὕτη λυθῇ ἡ
resembling most indeed the mother if but also this be-relaxed the
κίνησις, μητρὶ μητρὸς ἢ ἄλλῃ τινὶ τῶν ἄνωθεν ἔσται ἡ
motion mother of-mother or other some of-the from-above there-will-be the
ὁμοιότης κατὰ τὸν αὐτὸν λόγον. Ὁ δ' αὐτὸς τρόπος
likeness according-to the same ratio The and same way
καὶ ἐπὶ τῶν μορίων· καὶ γὰρ τῶν μορίων τὰ μὲν
also in-the-case-of the parts and for of-the parts the-ones indeed
τῷ πατρὶ ἔοικε πολλάκις, τὰ δὲ τῇ μητρί, τὰ δὲ
the father resemble often the-others and the mother the-others and
τῶν προγόνων τισίν. Ἔνεισι γὰρ καὶ τῶν μορίων αἱ
of-the ancestors some Are-in for also of-the parts the-ones
μὲν ἐνεργείᾳ κινήσεις αἱ δὲ δυνάμει, καθάπερ εἴρηται
indeed in-actuality motions the-others and in-potentiality just-as has-been-said
πολλάκις. Καθόλου δὲ δεῖ λαβεῖν ὑποθέσεις, μίαν μὲν
often Universally and one-must to-take hypotheses one indeed
τὴν εἰρημένην, ὅτι ἔνεισι τῶν κινήσεων αἱ μὲν δυνάμει
the said that are-in of-the motions the-ones indeed in-potentiality
αἱ δ' ἐνεργείᾳ, ἄλλας δὲ δύο, ὅτι κρατούμενον μὲν
the-others and in-actuality others and two that being-prevailed-over indeed

ἐξίσταται εἰς τὸ ἀντικείμενον, λυόμενον δὲ εἰς τὴν ἐχομένην
it-departs into the opposite being-relaxed and into the adjoining
κίνησιν, καὶ ἧττον μὲν λυόμενον εἰς τὴν ἐγγύς, μᾶλλον
motion and less indeed being-relaxed into the near more
δὲ εἰς τὴν πορρώτερον. Τέλος δ' οὕτως συγχέονται
and into the farther Finally and so they-are-confounded
ὥστε μηθενὶ ἐοικέναι τῶν οἰκείων καὶ συγγενῶν, ἀλλὰ
so-that to-none to-resemble of-the own and kin but
λείπεσθαι τὸ κοινὸν μόνον καὶ εἶναι ἄνθρωπον.
to-be-left the common only and to-be human
Τούτου δ' αἴτιον ὅτι πᾶσιν ἀκολουθεῖ τοῦτο τοῖς καθ'
Of-this and cause that all follows this the according-to
ἕκαστον· καθόλου γὰρ ὁ ἄνθρωπος, ὁ δὲ Σωκράτης
each universal for the human — but Socrates
πατήρ, καὶ ἡ μήτηρ ἥτις ποτ' ἦν, τῶν καθ' ἕκαστον.
father and the mother whoever ever was of-the according-to each
Αἴτιον δὲ τοῦ μὲν λύεσθαι τὰς κινήσεις ὅτι τὸ ποιοῦν καὶ
Cause and of-the indeed to-be-relaxed the motions that the acting also
πάσχει ὑπὸ τοῦ πάσχοντος, οἷον τὸ τέμνον ἀμβλύνεται
is-acted-upon by the being-acted-upon such-as the cutting is-blunted
ὑπὸ τοῦ τεμνομένου καὶ τὸ θερμαῖνον ψύχεται ὑπὸ τοῦ
by the being-cut and the heating is-chilled by the
θερμαινομένου, καὶ ὅλως τὸ κινοῦν ἔξω τοῦ πρώτου
being-heated and generally the moving except the first
ἀντικινεῖταί τινα κίνησιν, οἷον τὸ ὠθοῦν ἀντωθεῖταί πως
is-moved-back some motion such-as the pushing is-pushed-back somehow
καὶ ἀντιθλίβεται τὸ θλῖβον. Ἐνίοτε δὲ καὶ ὅλως ἔπαθε
and is-pressed-back the pressing Sometimes and also wholly it-suffered
μᾶλλον ἢ ἐποίησεν, καὶ ἐψύχθη μὲν τὸ θερμαῖνον,
more than it-acted and was-chilled indeed the heating
ἐθερμάνθη δὲ τὸ ψῦχον, ὁτὲ μὲν οὐθὲν ποιῆσαν, ὁτὲ
was-heated and the chilling at-times indeed nothing having-acted at-times

δὲ ἧττον ἢ παθόν. Εἴρηται δὲ περὶ αὐτῶν ἐν τοῖς
and less than having-suffered It-has-been-said and about them in the
περὶ τοῦ ποιεῖν καὶ πάσχειν διωρισμένοις, ἐν ποίοις
about the to-act and to-be-acted-upon determinations in what-sort
ὑπάρχει τῶν ὄντων τὸ ποιεῖν καὶ πάσχειν. Ἐξίσταται
belongs of-the beings the to-act and to-be-acted-upon Departs
δὲ τὸ πάσχον καὶ οὐ κρατεῖται ἢ δι' ἔλλειψιν
and the being-acted-upon and not is-mastered either because-of deficiency
δυνάμεως τοῦ πέττοντος καὶ κινοῦντος, ἢ διὰ πλῆθος
of-power of-the concocting and moving or because-of quantity
καὶ ψυχρότητα τοῦ πεττομένου καὶ διοριζομένου.
and coldness of-the being-concocted and being-determined
Τῇ μὲν γὰρ κρατοῦν τῇ δὲ οὐ κρατοῦν ποιεῖ
In-one-place indeed for prevailing in-another and not prevailing it-makes
πολύμορφον τὸ συνιστάμενον, οἷον ἐπὶ τῶν ἀθλητῶν
multiform the being-constituted such-as in-the-case-of the athletes
συμβαίνει διὰ τὴν πολυφαγίαν. Διὰ πλῆθος γὰρ
happens because-of the gluttony Because-of quantity for
τροφῆς οὐ δυναμένης τῆς φύσεως κρατεῖν, ὥστ' ἀνάλογον
of-nourishment not being-able the nature to-master so-that proportionally
αὔξειν καὶ διαμένειν ὁμοίαν τὴν μορφήν, ἀλλοῖα γίνεται
to-increase and to-remain like the shape other-sorts become
τὰ μέρη, καὶ σχεδὸν ἐνίοθ' οὕτως ὥστε μηθὲν ἐοικέναι
the parts and nearly sometimes so so-that nothing to-resemble
τῷ πρότερον. Παραπλήσιον δὲ τούτῳ καὶ τὸ νόσημα τὸ
to-the former Similar and to-this also the disease the
καλούμενον σατυριᾶν· καὶ γὰρ ἐν τούτῳ διὰ ῥεύματος
called satyriasis and for in this because-of of-flux
ἢ πνεύματος ἀπέπτου πλῆθος, εἰς μόρια τοῦ προσώπου
or of-breath unconcocted quantity into parts of-the face
παρεμπεσόντος, τοῦ ζῴου καὶ σατύρου φαίνεται τὸ
having-fallen-in of-the animal and of-satyr appears the

πρόσωπον. Διὰ τίνα μὲν οὖν αἰτίαν θήλεα καὶ ἄρρενα
face Because-of what indeed then cause females and males
γίνεται, καὶ τὰ μὲν ἐοικότα τοῖς γονεῦσι, θήλεά τε θήλεσι
come-to-be and the-ones indeed resembling the parents females both females
καὶ ἄρρενα ἄρρεσι, τὰ δ' ἀνάπαλιν, θήλεά τε τῷ πατρὶ
and males males the-others and conversely females both the father
καὶ ἄρρενα τῇ μητρί, καὶ ὅλως τὰ μὲν τοῖς προγόνοις
and males the mother and generally the-ones indeed the ancestors
ἔοικε τὰ δ' οὐθενί, καὶ ταῦτα καὶ καθ' ὅλον τὸ σῶμα
resemble the-others and none and these both according-to whole the body
καὶ τῶν μορίων ἕκαστον, διώρισται περὶ πάντων.
and of-the parts each it-has-been-determined about all
Εἰρήκασι δέ τινες τῶν φυσιολόγων καὶ ἕτεροι περὶ τούτων,
Have-spoken and some of-the natural-philosophers also others about these
διὰ τίν' αἰτίαν ὅμοια καὶ ἀνόμοια γίγνεται τοῖς γονεῦσιν.
because-of what cause like and unlike come-to-be to-the parents
Δύο δὴ τρόπους λέγουσι τῆς αἰτίας. Ἔνιοι μὲν γάρ φασιν,
Two indeed ways they-tell of-the cause Some indeed for say
ἀφ' ὁποτέρου ἂν ἔλθῃ σπέρμα πλέον, τούτῳ γίγνεσθαι
from whichever — come seed more to-this to-become
μᾶλλον ἐοικός, ὁμοίως παντί τε πᾶν καὶ μέρει μέρος, ὡς
more resembling likewise to-whole both whole and to-part part as
ἀπιόντος ἀφ' ἑκάστου τῶν μορίων σπέρματος· ἂν δ' ἴσον
departing from each of-the parts seed if but equal
ἔλθῃ ἀφ' ἑκατέρου, τοῦτο δ' οὐδετέρῳ γίγνεσθαι ὅμοιον. Εἰ
come from each this and to-neither to-become like If
δὲ τοῦτ' ἐστὶ ψεῦδος καὶ μὴ ἀπὸ παντὸς ἀπέρχεται, δῆλον
but this is false and not from all it-departs clear
ὡς οὐδὲ τῆς ὁμοιότητος καὶ ἀνομοιότητος αἴτιον ἂν εἴη
that not-even of-the likeness and unlikeness cause — would-be
τὸ λεχθέν. Ἔτι δὲ πῶς ἅμα θῆλυ μὲν πατρὶ ἐοικὸς
the said Further and how together female indeed father resembling

ἄρρεν δὲ μητρὶ ἐοικός, οὐκ εὐπόρως δύνανται διορίζειν. Οἱ
male and mother resembling not easily they-can to-distinguish Those
μὲν γὰρ ὥσπερ Ἐμπεδοκλῆς λέγοντες ἢ Δημόκριτος περὶ
indeed for just-as Empedocles saying or Democritus about
τοῦ θήλεος καὶ ἄρρενος τὴν αἰτίαν ἄλλον τρόπον ἀδύνατα
the female and male the cause other way impossibilities
λέγουσιν· οἱ δὲ τῷ πλεῖον ἢ ἔλαττον ἀπιέναι ἀπὸ τοῦ
say those but by-the more or less to-depart from the
ἄρρενος ἢ θήλεος, καὶ διὰ τοῦτο γίγνεσθαι τὸ μὲν
male or female and because-of this to-come-to-be the-one indeed
θῆλυ τὸ δ' ἄρρεν, οὐκ ἂν ἔχοιεν ἀποδεῖξαι τίνα
female the-other and male not — would-be-able to-show what
τρόπον τό τε θῆλυ τῷ πατρὶ ἐοικὸς ἔσται καὶ τὸ ἄρρεν
way the both female the father resembling will-be and the male
τῇ μητρί· ἅμα γὰρ ἐλθεῖν πλέον ἀπ' ἀμφοτέρων ἀδύνατον.
the mother together for to-come more from both impossible
Ἔτι δὲ διὰ τίν' αἰτίαν ἐοικὸς γίνεται τοῖς προγόνοις
Further and because-of what cause resembling it-becomes the ancestors
ὡς ἐπὶ τὸ πολὺ καὶ τοῖς ἄποθεν; οὐ γὰρ ἀπ' ἐκείνων γ'
as for the most-part and the remote-ones not for from those at-least
ἀπελήλυθεν οὐθὲν τοῦ σπέρματος. Ἀλλὰ μᾶλλον οἱ τὸν
has-departed anything of-the seed But rather those the
λειπόμενον τρόπον λέγοντες περὶ τῆς ὁμοιότητος καὶ τἆλλα
remaining way telling about the likeness both the-rest
βέλτιον καὶ τοῦτο λέγουσιν. Εἰσὶ γάρ τινες οἵ φασι τὴν
better and this tell There-are for some who say the
γονὴν μίαν οὖσαν οἷον πανσπερμίαν εἶναί τινα πολλῶν·
semen one being as-it-were a-mixture-of-all-seeds to-be some of-many
ὥσπερ οὖν εἴ τις κεράσειε πολλοὺς χυμοὺς εἰς ἓν ὑγρόν,
just-as then if someone should-mix many juices into one moist
κἄπειτ' ἐντεῦθεν λαμβάνοι, καὶ δύναιτ' ἂν λαμβάνειν μὴ
and-then from-there should-take and could — to-take not

ἴσον ἀεὶ ἀφ' ἑκάστου, ἀλλ' ὁτὲ μὲν τοῦ τοιοῦδε πλέον
equal always from each but at-times indeed of-the such more
ὁτὲ δὲ τοῦ τοιοῦδε, ὁτὲ δὲ τοῦ μὲν λαβεῖν τοῦ
at-times and of-the such at-times but of-the-one indeed to-take of-the-other
δὲ μηθὲν λαβεῖν, τοῦτο συμβαίνειν καὶ ἐπὶ τῆς γονῆς
and nothing to-take this to-happen also in-the-case-of the semen
πολυμιγοῦς οὔσης· ἀφ' οὗ γὰρ ἂν τῶν γεννώντων
many-mixed being from whichever for — of-the generators
πλεῖστον ἐγγένηται, τούτῳ γίνεσθαι τὴν μορφὴν ἐοικός.
most be-in to-this to-become the shape resembling
Οὗτος δὲ ὁ λόγος οὐ σαφὴς μὲν καὶ πλασματίας ἐστὶ
This and the account not clear indeed and fictitious is
πολλαχῇ, βούλεται δὲ καὶ βέλτιον λέγειν μὴ ἐνεργείᾳ
in-many-ways wishes and also better to-say not in-actuality
ὑπάρχειν, ἀλλὰ κατὰ δύναμιν, ἣν λέγει πανσπερμίαν·
to-belong but according-to potentiality what he-calls mixture-of-all-seeds
ἐκείνως μὲν γὰρ ἀδύνατον, οὕτως δὲ δυνατόν· οὐ ῥᾴδιον
in-that-way indeed for impossible so but possible not easy
δὲ οὐδὲ τρόπον ἕνα τῆς αἰτίας ἀποδιδόντας τὰς αἰτίας
and even way one of-the cause giving the causes
εἰπεῖν περὶ πάντων, τοῦ τε γίνεσθαι θῆλυ καὶ ἄρρεν, καὶ
to-tell about all of-the both to-come-to-be female and male and
διὰ τί τὸ μὲν θῆλυ τῷ πατρὶ πολλάκις ὅμοιον τὸ
because-of what the indeed female the father often like the
δ' ἄρρεν τῇ μητρί, καὶ πάλιν τῆς πρὸς τοὺς προγόνους
and male the mother and again of-the to the ancestors
ὁμοιότητος, ἔτι δὲ διὰ τίν' αἰτίαν ὁτὲ μὲν ἄνθρωπος
likeness further and because-of what cause at-times indeed human
μὲν τούτων δ' οὐθενὶ προσόμοιος, ὁτὲ δὲ προϊὸν οὕτως
indeed of-these but to-none resembling at-times and proceeding so

τέλος οὐδὲ ἄνθρωπος ἀλλὰ ζῳόν τι μόνον φαίνεται τὸ
finally not-even human but animal some only appears the
γιγνόμενον, ἃ δὴ καὶ λέγεται τέρατα.
coming-to-be which indeed also are-called monsters
Καὶ γὰρ ἐχόμενον τῶν εἰρημένων ἐστὶν εἰπεῖν περὶ τῶν
And for adjoining to-the said it-is to-tell about the
τοιούτων τὰς αἰτίας. Τέλος γὰρ τῶν μὲν κινήσεων
such the causes Finally for the indeed motions
λυομένων, τῆς δ' ὕλης οὐ κρατουμένης, μένει τὸ καθόλου
being-relaxed the and matter not being-mastered remains the universal
μάλιστα· τοῦτο δ' ἐστὶ τὸ ζῷον. Τὸ δὲ γιγνόμενον κριοῦ
most this and is the animal The and coming-to-be of-ram
κεφαλήν φασιν ἢ βοὸς ἔχειν, καὶ ἐν τοῖς ἄλλοις ὁμοίως
head they-say or of-ox to-have and in the others likewise
ἑτέρου ζῴου, μόσχον παιδὸς κεφαλὴν ἢ πρόβατον βοός.
of-another animal a-calf of-child head or a-sheep of-ox
Ταῦτα δὲ πάντα συμβαίνει μὲν διὰ τὰς προειρημένας
These and all happen indeed because-of the before-mentioned
αἰτίας, ἔστι δ' οὐθὲν ὧν λέγουσιν, ἀλλ' ἐοικότα μόνον·
causes is but none of-what they-say but resembling only
ὅπερ γίγνεται καὶ μὴ πεπηρωμένων, διὸ πολλάκις οἱ
which-very comes-about also not being-maimed wherefore often those
σκώπτοντες εἰκάζουσι τῶν μὴ καλῶν ἐνίους τοὺς μὲν αἰγὶ
mocking liken of-the not handsome some the-ones indeed to-a-goat
φυσῶντι πῦρ, τοὺς δ' οἷς κυρίττοντι. Φυσιογνώμων δέ
blowing fire the-others and to-a-ram butting A-physiognomist and
τις ἀνῆγε πάσας εἰς δύο ζῴων ἢ τριῶν ὄψεις, καὶ συνέπειθε
some referred all to two animals or three faces and persuaded
πολλάκις λέγων. Ὅτι δ' ἐστὶν ἀδύνατον γίγνεσθαι τέρας
often saying That and it-is impossible to-come-to-be monster
τοιοῦτον, ἕτερον ἐν ἑτέρῳ ζῷον, δηλοῦσιν οἱ χρόνοι
such other in other animal show the times

τῆς κυήσεως πολὺ διαφέροντες ἀνθρώπου καὶ προβάτου
of-the gestation much differing of-human and of-sheep
καὶ κυνὸς καὶ βοός· ἀδύνατον δ' ἕκαστον γενέσθαι μὴ
and of-dog and of-ox impossible and each to-come-to-be not
κατὰ τοὺς οἰκείους χρόνους. Τὰ μὲν οὖν τοῦτον τὸν
according-to the own times The-ones indeed then this the
τρόπον λέγεται τῶν τεράτων, τὰ δὲ τῷ πολυμερῆ
way are-called of-the monsters the-others and by-the many-parted
τὴν μορφὴν ἔχειν, πολύποδα καὶ πολυκέφαλα γινόμενα.
the shape to-have many-footed and many-headed coming-to-be
Πάρεγγυς δ' οἱ λόγοι τῆς αἰτίας καὶ παραπλήσιοι τρόπον
Near and the accounts of-the cause and similar in-a-way
τινά εἰσιν οἵ τε περὶ τῶν τεράτων καὶ οἱ περὶ τῶν
some are the both about the monsters and the about the
ἀναπήρων ζῴων· καὶ γὰρ τὸ τέρας ἀναπηρία τις ἐστίν.
maimed animals and for the monster deformity some is

IV · MONSTERS AND MULTIPLE BIRTHS

Democritus blamed two semens falling together; the cause is rather in the matter, so monsters are commonest in hens, whose close fetuses give double chicks when the yolks are not separated. The monstrous is against what holds for the most part. An animal's size and its brood are inversely related, more seed adds no size, and man alone varies in his gestation times. Extra or missing parts and twins come from more or less matter, as eddies split in a river; one heart means one animal, and some ducts grow shut.

Δημόκριτος μὲν οὖν ἔφησε γίγνεσθαι τὰ τέρατα διὰ
Democritus indeed then said to-come-to-be the monsters because-of
τὸ δύο γονὰς πίπτειν, τὴν μὲν πρότερον ὁρμήσασαν
the two semens to-fall the-one indeed earlier having-rushed

τὴν δ' ὕστερον, καὶ ταύτην ἐξελθοῦσαν ἐλθεῖν εἰς τὴν
the-other and later and this having-gone-out to-come into the
ὑστέραν ὥστε συμφύεσθαι καὶ ἐπαλλάττειν τὰ μόρια. Ταῖς
uterus so-that to-grow-together and to-overlap the parts In-the
δ' ὄρνισιν ἐπεὶ συμβαίνει ταχεῖαν γίνεσθαι τὴν ὀχείαν,
and birds since it-happens quick to-come-about the copulation
ἀεὶ τά τ' ᾠὰ καὶ τὴν χρόαν αὐτῶν ἐπαλλάττειν φησίν.
always the both eggs and the color of-them to-overlap he-says
Εἰ δὲ συμβαίνει ἐξ ἑνὸς σπέρματος πλείω γίνεσθαι
If but it-happens from one seed more to-come-to-be
καὶ μιᾶς συνουσίας, ὅπερ φαίνεται, βέλτιον μὴ κύκλῳ
and one intercourse which-very appears better not in-a-circle
περιέναι παρέντας τὴν σύντομον. Τοῖς γὰρ τοιούτοις
to-go-around having-passed-by the short-cut In-the for such
μάλιστ' ἀναγκαῖον τοῦτο συμβαίνειν, ὅταν μὴ διακριθῶσιν
most necessary this to-happen when not they-be-separated
ἀλλ' ἅμα τὰ σπέρματα ἔλθωσιν. Εἰ μὲν οὖν αἰτιάσασθαι
but together the seeds come If indeed then to-blame
δεῖ τὴν ἀπὸ τοῦ ἄρρενος γονήν, τοῦτον ἂν τὸν τρόπον
one-must the from the male semen this — the way
εἴη λεκτέον· ὅλως δὲ μᾶλλον τὴν αἰτίαν οἰητέον ἐν
would-be must-be-said generally but rather the cause one-must-think in
τῇ ὕλῃ καὶ τοῖς συνισταμένοις κυήμασιν εἶναι. Διὸ καὶ
the matter and the being-constituted fetuses to-be Wherefore also
γίνονται τὰ τοιαῦτα τῶν τεράτων ἐν μὲν τοῖς μονοτόκοις
come-to-be the such of-the monsters in indeed the single-bearing
σπάνια πάμπαν, ἐν δὲ τοῖς πολυτόκοις μᾶλλον, καὶ
rare altogether in but the many-bearing more and
μάλιστ' ἐν ὄρνισι, τῶν δ' ὀρνίθων ἐν ταῖς ἀλεκτορίσιν.
most in birds of-the and birds in the hens

Αὗται γὰρ πολυτοκοῦσιν, οὐ μόνον τῷ πολλάκις τίκτειν
These for bear-many not only by-the often to-lay
ὥσπερ τὸ τῶν περιστερῶν γένος, ἀλλὰ καὶ τῷ πολλὰ ἅμα
just-as the of-the pigeons kind but also by-the many together
ἔχειν κυήματα καὶ πᾶσαν ὥραν ὀχεύεσθαι. Διόπερ καὶ πολλὰ
to-have fetuses and every season to-be-mounted Wherefore also many
δίδυμα τίκτουσιν· συμφύεται γὰρ διὰ τὸ πλησίον ἀλλήλων
twins they-lay grow-together for because-of the near one-another
εἶναι τὰ κυήματα, καθάπερ ἐνίοτε πολλὰ τῶν περικαρπίων,
to-be the fetuses just-as sometimes many of-the fruits
τούτων δὲ ὅσων μὲν ἂν αἱ λέκιθοι διορίζωνται κατὰ τὸν
of-these and as-many indeed — the yolks be-distinguished by the
ὑμένα, δύο γίνονται νεοττοὶ κεχωρισμένοι, περιττὸν οὐδὲν
membrane two become chicks separated extra nothing
ἔχοντες· ὅσων δὲ συνεχεῖς καὶ μὴ διείργει μηθέν, ἐκ τούτων
having as-many but continuous and not separates anything from these
οἱ νεοττοὶ γίνονται τερατώδεις, σῶμα μὲν καὶ κεφαλὴν μίαν
the chicks become monstrous body indeed and head one
ἔχοντες, σκέλη δὲ τέτταρα καὶ πτέρυγας διὰ τὸ τὰ μὲν
having legs but four and wings because-of the the indeed
ἄνωθεν ἐκ τοῦ λευκοῦ γίνεσθαι καὶ πρότερον, ταμιευομένης
upper from the white to-come-to-be and earlier being-dispensed
ἐκ τῆς λεκίθου τῆς τροφῆς αὐτοῖς, τὸ δὲ κάτω μόριον
from the yolk the nourishment to-them the but lower part
ὑστερίζειν μέν, τὴν δὲ τροφὴν εἶναι μίαν καὶ ἀδιόριστον.
to-come-later indeed the but nourishment to-be one and undistinguished
Ἤδη δὲ καὶ ὄφις ὤπται δικέφαλος διὰ τὴν αὐτὴν
Already and also snake has-been-seen two-headed because-of the same
αἰτίαν· ᾠοτοκεῖ γὰρ καὶ πολυτοκεῖ καὶ τοῦτο τὸ γένος.
cause it-lays-eggs for and bears-many also this the kind

Σπανιώτερον δὲ τὸ τερατῶδες ἐπ᾽ αὐτῶν διὰ τὸ
Rarer and the monstrous in-the-case-of them because-of the
σχῆμα τῆς ὑστέρας· στοιχηδὸν γὰρ κεῖται τὸ πλῆθος τῶν
shape of-the uterus in-a-row for lies the multitude of-the
ᾠῶν διὰ τὸ μῆκος αὐτῆς. Καὶ περὶ τὰς μελίττας καὶ
eggs because-of the length of-it And about the bees and
τοὺς σφῆκας οὐδὲν γίνεται τοιοῦτον· ἐν κεχωρισμένοις γὰρ
the wasps nothing comes-to-be such in separated for
κυτταρίοις ὁ τόκος ἐστὶν αὐτῶν. Περὶ δὲ τὰς ἀλεκτορίδας
cells the birth is of-them About but the hens
τοὐναντίον συμβέβηκεν, ᾗ καὶ δῆλον ὡς ἐν τῇ ὕλῃ τὴν
the-opposite has-happened by-which also clear that in the matter the
αἰτίαν δεῖ νομίζειν τῶν τοιούτων· καὶ γὰρ τῶν ἄλλων
cause one-must to-think of-the such and for of-the others
ἐν τοῖς πολυτόκοις μᾶλλον. Διὸ ἐν ἀνθρώπῳ ἧττον·
in the many-bearing more Wherefore in human less
ὡς γὰρ ἐπὶ τὸ πολὺ μονοτόκον ἐστὶ καὶ τελειογόνον,
as for for the most-part single-bearing it-is and perfect-bearing
ἐπεὶ καὶ τούτων ἐν οἷς τόποις πολύγονοι αἱ γυναῖκές εἰσι,
since also of-these in what places prolific the women are
τοῦτο συμβαίνει μᾶλλον, οἷον περὶ Αἴγυπτον. Ἐν δὲ ταῖς
this happens more such-as about Egypt In and the
αἰξὶ καὶ τοῖς προβάτοις γίνεται μᾶλλον· πολυτοκώτερα
goats and the sheep it-comes-to-be more more-many-bearing
γάρ ἐστιν. Ἔτι δὲ μᾶλλον ἐν τοῖς πολυσχιδέσιν· ἔστι
for they-are Further and more in the many-toed are
γὰρ τὰ τοιαῦτα πολυτόκα τῶν ζῴων καὶ οὐ τελειογόνα,
for the such many-bearing of-the animals and not perfect-bearing
καθάπερ ἡ κύων· τὰ γὰρ πολλὰ τίκτει τυφλὰ τούτων.
just-as the bitch the for many bears blind of-these

Δι᾽ ἣν δ᾽ αἰτίαν τοῦτο συμβαίνει καὶ δι᾽ ἣν αἰτίαν
Because-of which and cause this happens and because-of which cause
πολυτοκοῦσιν, ὕστερον λεκτέον. Ἀλλὰ προωδοποίηται τῇ
they-bear-many later must-be-said But a-way-has-been-prepared for-the
φύσει πρὸς τὸ τερατοτοκεῖν τὸ μὴ γεννᾶν ὅμοια διὰ
nature toward the to-bear-monsters the not to-generate like because-of
τὴν ἀτέλειαν· ἔστι δὲ καὶ τὸ τέρας τῶν ἀνομοίων.
the incompleteness is and also the monster of-the unlike
Διόπερ ἐπαλλάττει τοῦτο τὸ σύμπτωμα τοῖς τοιούτοις
Wherefore overlaps this the accident with-the such
τὴν φύσιν. Ἐν γὰρ τούτοις μάλιστα γίνεται καὶ τὰ
in-the nature In for these most come-to-be also the
μετάχοιρα καλούμενα. Ταῦτα δ᾽ ἐστὶ κατά τι
runts so-called These and are in some-respect
πεπονθότα τερατῶδες· τὸ γὰρ ἐκλείπειν ἢ προσεῖναί
having-suffered monstrous the for to-be-lacking or to-be-in-addition
τι τερατῶδες. Ἔστι γὰρ τὸ τέρας τῶν παρὰ φύσιν
something monstrous Is for the monster of-the against nature
τι, παρὰ φύσιν δ᾽ οὐ πᾶσαν ἀλλὰ τὴν ὡς ἐπὶ τὸ πολύ·
something against nature but not all but the as for the most-part
περὶ γὰρ τὴν ἀεὶ καὶ τὴν ἐξ ἀνάγκης οὐθὲν γίνεται
about for the always and the from necessity nothing comes-to-be
παρὰ φύσιν, ἀλλ᾽ ἐν τοῖς ὡς ἐπὶ τὸ πολὺ μὲν οὕτω
against nature but in the as for the most-part indeed so
γινομένοις, ἐνδεχομένοις δὲ καὶ ἄλλως, ἐπεὶ καὶ τούτων
coming-to-be being-possible and also otherwise since also of-these
ἐν ὅσοις συμβαίνει παρὰ τὴν τάξιν μὲν ταύτην, ἀεὶ
in as-many-as it-happens against the order indeed this always
μέντοι μὴ τυχόντως, ἧττον εἶναι δοκεῖ τέρας διὰ τὸ καὶ
however not by-chance less to-be seems monster because-of the also

τὸ παρὰ φύσιν εἶναι τρόπον τινὰ κατὰ φύσιν, ὅταν μὴ
the against nature to-be in-a-way some according-to nature when not
κρατήσῃ τὴν κατὰ τὴν ὕλην ἡ κατὰ τὸ εἶδος φύσις.
prevail the according-to the matter the according-to the form nature
Διόπερ οὔτε τὰ τοιαῦτα τέρατα λέγουσιν, οὔτ' ἐν τοῖς
Wherefore neither the such monsters they-call nor in the
ἄλλοις ἐν ὅσοις εἴωθέ τι γίνεσθαι, καθάπερ ἐν τοῖς
others in as-many-as is-wont something to-come-to-be just-as in the
περικαρπίοις. Ἔστι γάρ τις ἄμπελος ἣν καλοῦσί τινες
fruits There-is for some vine which call some
κάπνεον, ἥν, ἂν ἐνέγκῃ μέλανας βότρυς, οὐ κρίνουσι
smoky which if it-bear black grapes not they-judge
τέρας διὰ τὸ πλειστάκις εἰωθέναι ταύτην τοῦτο ποιεῖν.
monster because-of the most-often to-be-wont this this to-do
Αἴτιον δ' ὅτι μεταξὺ λευκῆς ἐστὶ τὴν φύσιν καὶ μελαίνης,
Cause and that between white it-is in-the nature and black
ὥστ' οὐ πόρρωθεν ἡ μετάβασις οὐδ' ὡσπερανεὶ παρὰ
so-that not from-afar the change nor as-it-were against
φύσιν· οὐ γὰρ εἰς ἄλλην φύσιν. Ἐν δὲ τοῖς πολυτόκοις
nature not for into other nature In and the many-bearing
ταὐτά τε συμβαίνει, καὶ διὰ τὴν πολυτοκίαν
the-same-things both happen and because-of the many-bearing
ἐμποδίζειν τὰς τελειώσεις ἀλλήλων καὶ τὰς κινήσεις τὰς
to-hinder the completions of-one-another and the motions the
γεννητικάς. Περὶ δὲ τῆς πολυτοκίας καὶ τοῦ πλεονασμοῦ
generative About and the many-bearing and the excess
τοῦ τῶν μερῶν, καὶ τῆς ὀλιγοτοκίας καὶ μονοτοκίας καὶ
the of-the parts and the few-bearing and single-bearing and
τῆς ἐνδείας τῶν μερῶν, ἀπορήσειεν ἄν τις. Γίνεται γὰρ
the lack of-the parts would-be-puzzled — someone Come-to-be for
ἐνίοτε τὰ μὲν πλείους ἔχοντα δακτύλους, τὰ δ'
sometimes the-ones indeed more having fingers the-others and

ἕνα μόνον, καὶ περὶ τὰ ἄλλα μέρη τὸν αὐτὸν τρόπον·
one only and about the other parts the same way
καὶ γὰρ πλεονάζει καὶ κολοβὰ γίνεται, τὰ δὲ καὶ δύο
and for it-exceeds and stunted become the-ones and also two
ἔχοντα αἰδοῖα, τὸ μὲν ἄρρενος τὸ δὲ θήλεος, καὶ
having genitals the-one indeed of-male the-other and of-female both
ἐν ἀνθρώποις καὶ μάλιστα περὶ τὰς αἶγας.
in humans and most about the goats
Γίνονται γὰρ ἃς καλοῦσι τραγαίνας διὰ τὸ θήλεος καὶ
Come-to-be for which they-call he-goat-females because-of the of-female and
ἄρρενος ἔχειν αἰδοῖον· ἤδη δὲ καὶ κέρας αἴξ ἔχουσα ἐγένετο
of-male to-have genital already and also horn goat having was-born
πρὸς τῷ σκέλει. Γίνονται δὲ μεταβολαὶ καὶ πηρώσεις καὶ
at the leg Come-to-be and changes and maimings also
περὶ τὰ ἐντὸς μόρια, τῷ ἢ μὴ ἔχειν ἔνια ἢ κεκολοβωμένα
about the inner parts by-the either not to-have some or stunted
ἔχειν καὶ πλείω καὶ μεθεστῶτα τοὺς τόπους. Καρδίαν μὲν
to-have and more and shifted the places Heart indeed
οὖν οὐθὲν πώποτε ἐγένετο ζῷον οὐκ ἔχον, σπλῆνα δ' οὐκ
then no ever was-born animal not having spleen but not
ἔχον, καὶ δύο ἔχον, καὶ νεφρὸν ἕνα· ἧπαρ δ' οὐκ ἔχον μὲν
having and two having and kidney one liver but not having indeed
οὐθέν, οὐχ ὅλον δὲ ἔχον. Ταῦτα δὲ πάντα ἐν τοῖς τελειωθεῖσι
none not whole but having These and all in the completed
καὶ ζῶσιν. Εὑρίσκεται καὶ χολὴν οὐκ ἔχοντα, πεφυκότα
and living Are-found and bile not having being-natural
ἔχειν· τὰ δὲ πλείους ἔχοντα μιᾶς. Ἤδη δ' ἐγένετο καὶ
to-have the-others and more having than-one Already and came-about also
μεθεστηκότα κατὰ τόπον, τὸ μὲν ἧπαρ ἐν τοῖς ἀριστεροῖς,
shifted in place the indeed liver in the left
ὁ δὲ σπλὴν ἐν τοῖς δεξιοῖς. Καὶ ταῦτα μὲν ἔν γε
the and spleen in the right And these indeed in at-least

τετελεσμένοις ὥπται τοῖς ζῴοις, ὥσπερ εἴρηται· ἐν δὲ
completed have-been-seen the animals just-as has-been-said in but
τοῖς τικτομένοις ἔχοντα πολλὴν καὶ παντοδαπὴν ταραχήν.
the being-born having much and of-every-kind confusion
Τὰ μὲν οὖν μικρὸν παρεκβαίνοντα τὴν φύσιν ζῆν
The-ones indeed then little departing-from the nature to-live
εἴωθεν, τὰ δὲ πλεῖον οὐ ζῆν, ὅταν ἐν τοῖς κυρίοις τοῦ ζῆν
are-wont the but more not to-live when in the sovereign of-the to-live
γένηται τὸ παρὰ φύσιν. Ἡ δὲ σκέψις ἐστὶν ἡ περὶ τούτων,
come-to-be the against nature The and inquiry is the about these
πότερον τὴν αὐτὴν αἰτίαν δεῖ νομίζειν τῆς μονοτοκίας
whether the same cause one-must to-think of-the single-bearing
καὶ τῆς ἐνδείας τῶν μερῶν καὶ τοῦ πλεονασμοῦ καὶ τῆς
and of-the lack of-the parts and of-the excess and of-the
πολυτοκίας ἢ μὴ τὴν αὐτήν. Πρῶτον μὲν οὖν διὰ τί
many-bearing or not the same First indeed then because-of what
τὰ μέν ἐστι πολυτόκα τὰ δὲ μονοτόκα, τοῦτ' ἄν
the-ones indeed are many-bearing the-others and single-bearing this —
τις δόξειεν εὐλόγως θαυμάζειν. Τὰ γὰρ μέγιστα μονοτόκα
someone would-think reasonably to-wonder The for largest single-bearing
τῶν ζῴων ἐστίν, οἷον ἐλέφας κάμηλος ἵππος καὶ τὰ
of-the animals are such-as elephant camel horse and the
μώνυχα· τούτων δὲ τὰ μὲν μείζω τῶν ἄλλων, τὰ
solid-hoofed of-these and the-ones indeed larger than-the others the-others
δὲ πολὺ διαφέρει κατὰ τὸ μέγεθος. Κύων δὲ καὶ λύκος
and much differ in the size Dog and and wolf
καὶ τὰ πολυσχιδῆ πάντα πολυτόκα σχεδόν, καὶ τὰ μικρὰ
and the many-toed all many-bearing nearly and the small
τῶν τοιούτων, οἷον τὸ τῶν μυῶν γένος. Τὰ δὲ διχηλὰ
of-the such such-as the of-the mice kind The but cloven-hoofed
ὀλιγοτόκα πλὴν ὑός· αὕτη δὲ τῶν πολυτόκων ἐστίν.
few-bearing except sow this and of-the many-bearing is

Εὔλογον γὰρ τὰ μὲν μεγάλα πλείω δύνασθαι γεννᾶν καὶ
Reasonable for the indeed large more to-be-able to-generate and
σπέρμα φέρειν πλεῖον. Αἴτιον δ' αὐτὸ τὸ θαυμαζόμενον τοῦ
seed to-bear more Cause but itself the being-wondered-at of-the
μὴ θαυμάζειν· διὰ γὰρ τὸ μέγεθος οὐ πολυτοκοῦσιν· ἡ
not to-wonder because-of for the size not they-bear-many the
γὰρ τροφὴ καταναλίσκεται τοῖς τοιούτοις εἰς τὴν αὔξησιν
for nourishment is-used-up in-the such for the growth
τοῦ σώματος. Τοῖς δ' ἐλάττοσιν ἀπὸ τοῦ μεγέθους
of-the body For-the and smaller from the size
ἡ φύσις ἀφαιροῦσα πρὸς τὸ περίττωμα προστίθησι
the nature taking-away to the residue adds
τὸ σπερματικὸν τὴν ὑπεροχήν. Ἔτι δὲ τὸ γεννῆσαν
the seminal the excess Further and the having-generated
σπέρμα πλεῖον μὲν τὸ τοῦ μείζονος ἀναγκαῖον εἶναι,
seed more indeed the of-the larger necessary to-be
μικρὸν δὲ τὸ τῶν ἐλαττόνων. Πολλὰ μὲν οὖν καὶ μικρὰ
small but the of-the smaller Many indeed then and small
γένοιτ' ἂν ἐν ταὐτῷ, μεγάλα δὲ πολλὰ χαλεπόν· τοῖς
could-come-to-be — in the-same large but many hard to-the
δὲ μέσοις μεγέθεσι τὸ μέσον ἀπέδωκεν ἡ φύσις. Τοῦ μὲν
but middle sizes the middle gave the nature Of-the indeed
οὖν τὰ μὲν εἶναι μεγάλα τῶν ζῴων τὰ δ' ἐλάττω
then the-ones indeed to-be large of-the animals the-others and smaller
τὰ δὲ μέσα πρότερον εἰρήκαμεν τὴν αἰτίαν· μονοτόκα
the-others and middle earlier we-have-stated the cause single-bearing
δέ, τὰ δ' ὀλιγοτόκα, τὰ δὲ πολυτόκα τῶν ζῴων
and the-others and few-bearing the-others and many-bearing of-the animals
ἐστὶν ὡς μὲν ἐπὶ τὸ πολὺ τὰ μὲν μώνυχα μονοτόκα,
are as indeed for the most-part the indeed solid-hoofed single-bearing
τὰ δὲ διχηλὰ ὀλιγοτόκα, τὰ δὲ πολυσχιδῆ πολυτόκα.
the but cloven-hoofed few-bearing the but many-toed many-bearing

Τούτου δ' αἴτιον ὅτι ὡς ἐπὶ τὸ πολὺ τὰ μεγέθη
Of-this and cause that as for the most-part the sizes
διώρισται κατὰ τὰς διαφορὰς ταύτας. Οὐ μὴν ἔχει
are-distinguished according-to the differences these Not truly it-is
γ' οὕτως ἐπὶ πάντων· αἴτιον γὰρ μέγεθος καὶ
at-least so in-the-case-of all cause for size and
μικρότης τῶν σωμάτων τῆς ὀλιγοτοκίας καὶ πολυτοκίας,
smallness of-the bodies of-the few-bearing and many-bearing
ἀλλ' οὐ τὸ μώνυχον ἢ πολυσχιδὲς ἢ διχηλὸν εἶναι τὸ
but not the solid-hoofed or many-toed or cloven-hoofed to-be the
γένος. Τούτου δὲ μαρτύριον· ὁ γὰρ ἐλέφας μέγιστον τῶν
kind Of-this and witness the for elephant largest of-the
ζῴων, ἔστι δὲ πολυσχιδές, ἥ τε κάμηλος διχηλὸν τῶν
animals is but many-toed the both camel cloven-hoofed of-the
λοιπῶν μέγιστον ὄν. Οὐ μόνον δ' ἐν τοῖς πεζοῖς ἀλλὰ
remaining largest being Not only and in the land but
καὶ ἐν τοῖς πτηνοῖς καὶ ἐν τοῖς πλωτοῖς τὰ μὲν μεγάλα
also in the winged and in the swimming the indeed large
ὀλιγοτόκα ἐστὶ τὰ δὲ μικρὰ πολυτόκα, διὰ τὴν αὐτὴν
few-bearing are the but small many-bearing because-of the same
αἰτίαν. Ὁμοίως δὲ καὶ τῶν φυτῶν οὐ τὰ μέγιστα φέρει
cause Likewise and also of-the plants not the largest bear
πλεῖστον καρπόν. Διὰ τί μὲν οὖν τῶν ζῴων τὰ μὲν
most fruit Because-of what indeed then of-the animals the-ones indeed
πολυτόκα τὰ δ' ὀλιγοτόκα τὴν φύσιν ἐστίν, εἴρηται·
many-bearing the-others and few-bearing in-the nature are it-has-been-said
τῆς δὲ νῦν ῥηθείσης ἀπορίας μᾶλλον ἄν τις θαυμάσειεν
of-the but now stated puzzle more — someone would-wonder
ἐπὶ τῶν πολυτοκούντων, ἐπειδὴ φαίνεται πολλάκις
in-the-case-of the many-bearing since they-appear often
ἀπὸ μιᾶς ὀχείας κυϊσκόμενα τὰ τοιαῦτα τῶν ζῴων, τὸ
from one copulation conceiving the such of-the animals the

δὲ σπέρμα τὸ τοῦ ἄρρενος, εἴτε συμβάλλεται πρὸς τὴν
but seed the of-the male whether contributes toward the
ὕλην μόριον γινόμενον τοῦ κυήματος καὶ τῷ τοῦ θήλεος
matter part becoming of-the fetus and with-the of-the female
σπέρματι μιγνύμενον, εἴτε καὶ μὴ τοῦτον τὸν τρόπον,
seed being-mixed or-whether also not this the way
ἀλλ' ὥσπερ φαμὲν συνάγον καὶ δημιουργοῦν τὴν ὕλην τὴν
but just-as we-say gathering and crafting the matter the
ἐν τῷ θήλει καὶ τὸ περίττωμα τὸ σπερματικόν, καθάπερ
in the female and the residue the seminal just-as
ὁ ὀπὸς τὴν ὑγρότητα τοῦ γάλακτος, διὰ τίνα ποτ'
the fig-juice the moisture of-the milk because-of what ever
αἰτίαν οὐχ ἓν ἀποτελεῖ ζῷον μέγεθος ἔχον;
cause not one completes animal size having
ὥσπερ ἐνταῦθα ὁ ὀπὸς οὐ κεχώρισται τῷ συνιστάναι ποσόν
just-as here the fig-juice not is-separated by-the to-constitute quantity
τι, ἀλλ' ὅσῳπερ ἂν εἰς πλεῖον ἔλθῃ καὶ πλείων, τοσούτῳ
some but by-as-much-as — into more it-come and more by-so-much
τὸ πηγνύμενόν ἐστι μεῖζον. Τὸ μὲν οὖν ἕλκειν φάναι τοὺς
the being-curdled is greater The indeed then to-draw to-say the
τόπους τῆς ὑστέρας τὸ σπέρμα, καὶ διὰ τοῦτο πλείω
places of-the uterus the seed and because-of this more
γίνεσθαι, διὰ τὸ τῶν τόπων πλῆθος καὶ τὰς κοτυληδόνας
to-come-to-be because-of the of-the places multitude and the cotyledons
οὐχ ἓν οὔσας, οὐθέν ἐστιν. Ἐν ταὐτῷ γὰρ γίνονται τόπῳ
not one being nothing is In the-same for come-to-be place
τῆς ὑστέρας δύο πολλάκις, ἐν δὲ τοῖς πολυτόκοις, ὅταν
of-the uterus two often in but the many-bearing when
πληρωθῇ τῶν ἐμβρύων, ἐφεξῆς κείμενα φαίνεται. Τοῦτο δὲ
it-be-filled of-the embryos in-a-row lying they-appear This and
δῆλον ἐκ τῶν ἀνατομῶν ἐστίν. Ἀλλ' ὥσπερ καὶ τελεουμένων
clear from the dissections is But just-as also being-completed

τῶν ζῴων ἔστιν ἑκάστου τι μέγεθος καὶ ἐπὶ τὸ μεῖζον
of-the animals there-is of-each some size both toward the greater
καὶ ἐπὶ τὸ ἔλαττον, ὧν οὔτ' ἂν μεῖζον γένοιτο
and toward the less than-which neither — greater would-come-to-be
οὔτ' ἔλαττον, ἀλλ' ἐν τῷ μεταξὺ διαστήματι τοῦ μεγέθους
nor less but in the intermediate interval of-the size
λαμβάνουσι πρὸς ἄλληλα τὴν ὑπεροχὴν καὶ τὴν ἔλλειψιν, καὶ
they-take toward one-another the excess and the deficiency and
γίνεται μείζων ὁ δ' ἐλάττων ἄνθρωπος καὶ τῶν ἄλλων
becomes greater the-other and smaller human and of-the other
ζῴων ὁτιοῦν, οὕτω καὶ ἐξ ἧς γίνεται ὕλης σπερματικῆς,
animals any so also from which comes-to-be matter seminal
οὐκ ἔστιν ἀόριστος οὔτ' ἐπὶ τὸ πλεῖον οὔτ' ἐπὶ τὸ
not is indefinite either toward the more or toward the
ἔλαττον, ὥστ' ἐξ ὁποσησοῦν γίνεσθαι τῷ πλήθει.
less so-that from any-amount-whatever to-come-to-be in-the quantity
Ὅσα οὖν τῶν ζῴων διὰ τὴν εἰρημένην αἰτίαν πλεῖον
As-many-as then of-the animals because-of the said cause more
προΐεται περίττωμα ἢ εἰς ἑνὸς ζῴου ἀρχήν, οὐκ ἐνδέχεται
emit residue than for of-one animal beginning not it-is-possible
ἐκ ταύτης ἓν γίνεσθαι πάσης, ἀλλὰ τοσαῦτα ὅσα τοῖς
from this one to-come-to-be all but so-many as by-the
μεγέθεσιν ὥρισται τοῖς ἱκνουμένοις. Οὐδὲ τὸ τοῦ ἄρρενος
sizes is-determined the fitting Nor the of-the male
σπέρμα ἢ ἡ δύναμις ἡ ἐν τῷ σπέρματι οὐθὲν συνίστησι
seed or the power the in the seed anything constitutes
πλέον ἢ ἔλαττον τοῦ πεφυκότος. Ὁμοίως τ' εἰ πλέον
more or less than-the natural Likewise and if more
σπέρμα ἀφίησι τὸ ἄρρεν ἢ δυνάμεις πλείους ἐν διαιρουμένῳ
seed emits the male or powers more in being-divided
τῷ σπέρματι, οὐθὲν ποιήσει μεῖζον τὸ πλεῖστον, ἀλλὰ
the seed nothing will-it-make greater the most but

καὶ τοὐναντίον διαφθερεῖ καταξηραῖνον. Οὐδὲ γὰρ τὸ πῦρ
also the-opposite it-will-destroy drying-up Not-even for the fire
θερμαίνει τὸ ὕδωρ μᾶλλον, ὅσῳπερ ἂν ᾖ πλέον, ἀλλ' ἔστιν
heats the water more by-as-much-as — it-be more but there-is
ὅρος τῆς θερμότητος, ἧς ὑπαρχούσης ἐὰν αὔξῃ τις τὸ
limit of-the heat which being-present if increase someone the
πῦρ, θερμὸν μὲν οὐκέτι γίνεται μᾶλλον, ἐξατμίζει δὲ μᾶλλον,
fire hot indeed no-longer becomes more evaporates but more
καὶ τέλος ἀφανίζεται καὶ γίνεται ξηρόν. Ἐπεὶ δὲ φαίνεται
and finally disappears and becomes dry Since and it-appears
συμμετρίας δεῖσθαί τινος πρὸς ἄλληλα τό τε περίττωμα
proportion to-need some toward one-another the both residue
τὸ τοῦ θήλεος καὶ τὸ παρὰ τοῦ ἄρρενος, ὅσα προΐεται
the of-the female and the from the male as-many-as emit
σπέρμα τῶν ἀρρένων, τὰ πολυτόκα τῶν ζῴων εὐθὺς ἀφίησι
seed of-the males the many-bearing of-the animals at-once emit
τὸ μὲν ἄρρεν δυνάμενον πλείω συνιστάναι μεριζόμενον,
the indeed male able more to-constitute being-divided
τὸ δὲ θῆλυ τοσοῦτον ὥστε πλείους γίνεσθαι συστάσεις.
the but female so-much so-that more to-come-to-be constitutions
Τὸ δ' ἐπὶ τοῦ γάλακτος παράδειγμα λεχθὲν οὐχ
The and in-the-case-of the milk example stated not
ὅμοιόν ἐστιν· ἡ μὲν γὰρ τοῦ σπέρματος θερμότης οὐ μόνον
like is the indeed for of-the seed heat not only
συνίστησι ποσὸν ἀλλὰ καὶ ποιόν τι, ἡ δ' ἐν τῷ ὀπῷ καὶ
constitutes quantity but also quality some the but in the fig-juice and
τῇ πυετίᾳ τὸ ποσὸν μόνον. Τοῦ μὲν οὖν πολλὰ γίνεσθαι τὰ
the rennet the quantity only Of-the indeed then many to-come-to-be the
κυήματα καὶ μὴ συνεχὲς ἓν ἐκ πάντων ἐν τοῖς πολυτόκοις
fetuses and not continuous one from all in the many-bearing
τοῦτ' αὐτὸ αἴτιον, ὅτι οὐκ ἐξ ὁποσουοῦν γίνεται
this itself cause that not from any-amount-whatever comes-to-be

κύημα, ἀλλ᾽ ἐάν τε ὀλίγον ᾖ, οὐκ ἔσται, ἐάν τε πολὺ
fetus but if both little it-be not it-will-be if both much
λίαν· ὥρισται γὰρ ἡ δύναμις καὶ τοῦ πάσχοντος καὶ τῆς
too is-determined for the power both of-the being-acted-upon and of-the
θερμότητος τῆς ποιούσης. Ὁμοίως δὲ καὶ ἐν τοῖς μονοτόκοις
heat the acting Likewise and also in the single-bearing
καὶ μεγάλοις τῶν ζῴων οὐ πολλὰ γίγνεται ἐκ πολλοῦ
and large of-the animals not many come-to-be from much
περιττώματος· καὶ γὰρ ἐν ἐκείνοις ἐκ ποσοῦ τινὸς ποσόν τι
residue and for in those from quantity some quantity some
τὸ ἐργαζόμενόν ἐστιν. Οὐ προΐεται μὲν οὖν πλείω τοιαύτην
the being-worked is Not they-emit indeed then more such
ὕλην διὰ τὴν προειρημένην αἰτίαν· ἣν δὲ προΐεται,
matter because-of the before-stated cause which but they-emit
τοσαύτη κατὰ φύσιν ἐστὶν ἐξ ἧς ἓν γίνεται κύημα μόνον.
so-much by nature is from which one comes-to-be fetus only
Ἐὰν δέ ποτε πλεῖον ἔλθῃ, διτοκεῖ τότε. Διὸ καὶ δοκεῖ
If and ever more come it-bears-twins then Wherefore also seem
τερατώδη τὰ τοιαῦτ᾽ εἶναι μᾶλλον, ὅτι γίνεται παρὰ
monstrous the such to-be more because they-come-to-be against
τὸ ὡς ἐπὶ τὸ πολὺ καὶ τὸ εἰωθός. Ὁ δὲ ἄνθρωπος
the as for the most-part and the customary The but human
ἐπαμφοτερίζει πᾶσι τοῖς γένεσιν· καὶ γὰρ μονοτοκεῖ καὶ
goes-both-ways with-all the kinds and for it-bears-single and
πολυτοκεῖ καὶ ὀλιγοτοκεῖ ποτέ, μάλιστα δὲ μονοτόκον
bears-many and bears-few sometimes most but single-bearing
τὴν φύσιν ἐστί, διὰ μὲν τὴν ὑγρότητα τοῦ σώματος
in-the nature it-is because-of indeed the moisture of-the body
καὶ θερμότητα πολυτόκον (τοῦ γὰρ σπέρματος ἡ φύσις
and heat many-bearing of-the for seed the nature
ὑγρὰ καὶ θερμή), διὰ δὲ τὸ μέγεθος ὀλιγοτόκον καὶ
moist and hot because-of but the size few-bearing and

μονοτόκον. Διὰ δὲ τοῦτο καὶ τοὺς τῆς κυήσεως χρόνους
single-bearing Because-of and this also the of-the gestation times
μόνῳ τῶν ζῴων ἀνωμάλους εἶναι συμβέβηκεν. Τοῖς μὲν
alone of-the animals irregular to-be has-happened To-the indeed
γὰρ ἄλλοις εἷς ἐστὶν ὁ χρόνος, τοῖς δ' ἀνθρώποις πλείους·
for others one is the time to-the but humans more
καὶ γὰρ ἑπτάμηνα καὶ δεκάμηνα γεννῶνται καὶ κατὰ τοὺς
for both seven-months and ten-months are-born and at the
μεταξὺ χρόνους· καὶ γὰρ τὰ ὀκτάμηνα ζῇ μέν, ἧττον δέ.
intermediate times and for the eight-months live indeed less but
Τὸ δ' αἴτιον ἐκ τῶν νῦν λεχθέντων συνίδοι τις
The and cause from the now said would-see-together someone
ἄν, εἴρηται δὲ περὶ αὐτῶν ἐν τοῖς προβλήμασιν.
— it-has-been-said and about them in the problems
Καὶ περὶ μὲν τούτων διωρίσθω τὸν τρόπον τοῦτον·
And about indeed these let-it-be-determined the way this
τῶν δὲ πλεοναζόντων μορίων παρὰ φύσιν τὸ αὐτὸ αἴτιον
of-the and exceeding parts against nature the same cause
καὶ τῆς διδυμοτοκίας. Ἤδη γὰρ ἐν τοῖς κυήμασι συμβαίνει
also of-the twin-bearing Already for in the fetuses happens
τὸ αἴτιον, ἐὰν πλείω ὕλην συστήσῃ ἢ κατὰ τὴν τοῦ
the cause if more matter it-constitute than according-to the of-the
μορίου φύσιν. Τότε γὰρ συμβαίνει μὲν μόριον μεῖζον τῶν
part nature Then for it-happens indeed part greater than-the
ἄλλων ἔχειν, οἷον δάκτυλον ἢ χεῖρα ἢ πόδα ἤ τι τῶν
others to-have such-as finger or hand or foot or some of-the
ἄλλων ἀκρωτηρίων ἢ μελῶν, ἢ σχισθέντος τοῦ κυήματος
other extremities or limbs or having-been-split the fetus
πλείω γίνεσθαι, καθάπερ ἐν τοῖς ποταμοῖς αἱ δῖναι. Καὶ
more to-come-to-be just-as in the rivers the eddies And
γὰρ ἐν τούτοις τὸ φερόμενον ὑγρὸν καὶ κίνησιν ἔχον ἂν
for in these the moving moist and motion having if

ἀντικρούσῃ, δύο ἐξ ἑνὸς γίνονται συστάσεις, ἔχουσαι τὴν
it-strike-against two from one come-to-be constitutions having the
αὐτὴν κίνησιν· τὸν αὐτὸν δὲ τρόπον καὶ ἐπὶ τῶν
same motion the same and way also in-the-case-of the
κυημάτων συμβαίνει. Προσφύεται δὲ μάλιστα μὲν πλησίον
fetuses it-happens Are-attached and most indeed near
ἀλλήλων, ἐνίοτε δὲ καὶ πόρρω διὰ τὴν γιγνομένην
one-another sometimes and also far because-of the arising
ἐν τῷ κυήματι κίνησιν, μάλιστα δὲ διὰ τὸ τὴν τῆς
in the fetus motion most and because-of the the of-the
ὕλης ὑπεροχήν, ὅθεν ἀφῃρέθη, ἐκεῖ ἀποδιδόναι, τὸ δ'
matter excess whence it-was-taken-away there to-give-back the and
εἶδος ἔχειν, ὅθεν ἐπλεόνασεν.
form to-have whence it-exceeded
Ὅσα δὲ συμβαίνει τοιαῦτα ὥστε δύο ἔχειν αἰδοῖα, τὸ
As-many-as and happen such so-that two to-have genitals the-one
μὲν ἄρρενος τὸ δὲ θήλεος, ἀεὶ μὲν τῶν πλεοναζόντων
indeed of-male the-other and of-female always indeed of-the exceeding
γίνεται τὸ μὲν κύριον τὸ δ' ἄκυρον τῷ κατὰ
becomes the-one indeed sovereign the-other and not-sovereign by-the in-respect-of
τὴν τροφὴν ἀεὶ ἀμαυροῦσθαι ἅτε παρὰ φύσιν ὄν,
the nourishment always to-be-dimmed inasmuch-as against nature being
προσπέφυκε δ' ὥσπερ τὰ φύματα· καὶ γὰρ ταῦτα λαμβάνει
it-is-attached and just-as the growths and for these take
τροφήν, καίπερ ὄντα ὑστερογενῆ καὶ παρὰ φύσιν. Γίνεται
nourishment although being later-born and against nature It-comes-about
δὲ κρατήσαντος μὲν τοῦ δημιουργοῦντος ὅμοια δύο καὶ
and having-prevailed indeed the crafting like two and
κρατηθέντος ὅλως· ἂν δὲ τῇ μὲν κρατήσῃ τῇ
having-been-prevailed-over wholly if but in-one-respect indeed it-prevail in-another
δὲ κρατηθῇ, τὸ μὲν θῆλυ τὸ δὲ ἄρρεν. Οὐθὲν γὰρ
and be-prevailed-over the-one indeed female the-other and male Nothing for

διαφέρει τοῦτο λέγειν ἐπὶ τῶν μορίων ἢ ἐπὶ τοῦ
it-differs this to-say in-the-case-of the parts or in-the-case-of the
ὅλου, δι' ἣν αἰτίαν γίνεται τὸ μὲν θῆλυ τὸ δ'
whole because-of which cause becomes the-one indeed female the-other and
ἄρρεν. Ὅσα δ' ἐλλείποντα γίνεται τῶν τοιούτων μορίων,
male As-many-as and lacking come-to-be of-the such parts
οἷον ἀκρωτηρίου τινὸς ἢ τῶν ἄλλων μελῶν, τὴν αὐτὴν
such-as extremity some or of-the other limbs the same
δεῖ νομίζειν αἰτίαν, ὅμοιον γάρ, κἂν ὅλως τὸ γινόμενον
one-must to-think cause like for even-if wholly the coming-to-be
ἀμβλωθῇ. Ἀμβλώσεις δὲ γίνονται πολλαὶ τῶν κυημάτων.
be-aborted Abortions and come-to-be many of-the fetuses
Διαφέρουσι δ' αἱ μὲν παραφύσεις τῆς πολυτοκίας τὸν
Differ and the indeed outgrowths from-the many-bearing the
εἰρημένον τρόπον, τὰ δὲ τέρατα τούτων τῷ πολλὰ εἶναι
said way the but monsters from-these by-the many to-be
αὐτῶν σύμφυσιν. Ἔνια δὲ καὶ τοῦτον τὸν τρόπον, ἐὰν ἐπὶ
of-them fusion Some and also this the way if in
μειζόνων γένωνται καὶ κυριωτέρων μορίων, οἷον ἔνια ἔχει
greater they-come-to-be and more-sovereign parts such-as some have
δύο σπλῆνας καὶ πλείους νεφρούς. Ἔτι δὲ μεταστάσεις
two spleens and more kidneys Further and displacements
τῶν μορίων παρατρεπομένων τῶν κινήσεών εἰσι καὶ τῆς
of-the parts being-turned-aside the motions are and the
ὕλης μεθισταμένης. Ἓν δ' εἶναι τὸ ζῷον τὸ τερατῶδες
matter shifting One but to-be the animal the monstrous
ἢ πλείω συμπεφυκότα δεῖ νομίζειν κατὰ τὴν ἀρχήν,
or more grown-together one-must to-think according-to the principle
οἷον εἰ τοιοῦτόν ἐστιν ἡ καρδία μόριον, τὸ μὲν μίαν ἔχον
such-as if such is the heart part the indeed one having
καρδίαν ἓν ζῷον, τὰ δὲ πλεονάζοντα μόρια παραφύσεις,
heart one animal the but exceeding parts outgrowths

τὰ δὲ πλείω ἔχοντα δύο μὲν εἶναι, συμπεφυκέναι δὲ
the-ones but more having two indeed to-be to-have-grown-together but
διὰ τὴν τῶν κυημάτων σύναψιν. Συμβαίνει δὲ πολλάκις
because-of the of-the fetuses contact It-happens and often
καὶ τῶν οὐ δοκούντων ἀναπήρων εἶναι ζῴων πολλοῖς
also of-the not seeming maimed to-be animals to-many
ἤδη τετελειωμένοις τοὺς μὲν συμπεφυκέναι τῶν πόρων
already completed the-ones indeed to-have-grown-together of-the ducts
τοὺς δὲ παρεκτετράφθαι. Καὶ γὰρ θήλεσί τισιν ἤδη
the-others and to-have-been-turned-aside And for in-females some already
τὸ στόμα τῶν ὑστερῶν συμπεφυκὸς διετέλεσεν, ἤδη δ'
the mouth of-the uteri grown-together continued already and
ὥρας οὔσης τῶν καταμηνίων καὶ πόνων γιγνομένων ταῖς
season being of-the menses and pains coming-about for-some
μὲν αὐτόματον ἐρράγη, ταῖς δ' ὑπὸ ἰατρῶν διηρέθη·
indeed spontaneously it-broke for-others and by doctors was-divided
τὰς δὲ διαφθαρῆναι συνέπεσεν ἢ βίᾳ γενομένης
the-others and to-be-destroyed it-happened either by-force having-come-about
τῆς ῥήξεως ἢ γενέσθαι μὴ δυναμένης.
the rupture or to-come-about not being-able
Καὶ τῶν παίδων ἐνίοις οὐ κατὰ τὸ αὐτὸ συνέπεσε τὸ πέρας
And of-the boys in-some not at the same coincided the end
τοῦ αἰδοίου καὶ ὁ πόρος ᾗ διέρχεται τὸ περίττωμα τὸ
of-the genital and the duct by-which passes-through the residue the
ἐκ τῆς κύστεως, ἀλλ' ὑποκάτωθεν· διὸ καὶ καθήμενοι
from the bladder but beneath wherefore also sitting
οὐροῦσι, τῶν δὲ ὄρχεων ἀνεσπασμένων ἄνω δοκοῦσι
they-urinate of-the and testes drawn-up upward they-seem
τοῖς ἄποθεν ἅμα θήλεος ἔχειν αἰδοῖον καὶ ἄρρενος. Ἤδη
to-those from-afar at-once of-female to-have genital and of-male Already
δὲ καὶ ὁ τῆς ξηρᾶς τροφῆς πόρος συμπεφυκὼς ἐπί
and also the of-the dry nourishment duct grown-together in

τινων ζῴων γέγονε, καὶ προβάτων καὶ ἄλλων, ἐπεὶ καὶ
some animals has-been both of-sheep and of-others since also
βοῦς ἐν Περίνθῳ ἐγένετο ᾗ διὰ τῆς κύστεως λεπτὴ
cow in Perinthus was-born in-which through the bladder fine
διηθουμένη τροφὴ διεχώρει, καὶ ἀνατμηθέντος τοῦ ἀρχοῦ
filtered nourishment passed-out and having-been-cut-open the anus
ταχὺ πάλιν συνεφύετο, καὶ οὐκ ἐπεκράτουν διαιροῦντες.
quickly again it-grew-together and not they-prevailed dividing

V · SUPERFETATION

Single-bearing animals do not superfetate, since their residue goes to the one fetus, while the many-bearing do; in women a second conception soon after the first can come to term, later ones miscarry. Only woman and mare accept mating while pregnant. The lustful animals are those whose seed collects without outlet, as the barren females of every live-bearing kind and male birds, with testes drawn up inside; the hare, many-bearing, seminal, and hairy, a sign of residue, superfetates late, carrying unformed young beside formed.

Περὶ μὲν οὖν ὀλιγοτοκίας καὶ πολυτοκίας καὶ παραφύσεως
About indeed then few-bearing and many-bearing and outgrowth
τῶν πλεοναζόντων ἢ ἐλλειπόντων μορίων, ἔτι δὲ περὶ τῶν
of-the exceeding or lacking parts further and about the
τερατωδῶν, εἴρηται. Τῶν δὲ ζῴων τὰ μὲν ὅλως οὐκ
monstrous it-has-been-said Of-the and animals the-ones indeed at-all not
ἐπικυΐσκεται τὰ δ' ἐπικυΐσκεται, καὶ τῶν ἐπικυϊσκομένων
superfetate the-others and superfetate and of-the superfetating
τὰ μὲν δύναται τὰ κυήματα ἐκτρέφειν, τὰ δὲ ποτὲ
the-ones indeed can the fetuses to-rear-out the-others and sometimes
μὲν ποτὲ δ' οὔ. Τοῦ δὲ μὴ ἐπικυΐσκεσθαι αἴτιον ὅτι
indeed at-other-times but not Of-the and not to-superfetate cause that

μονοτόκα ἐστίν. Τά τε γὰρ μώνυχα οὐκ ἐπικυΐσκεται καὶ
single-bearing they-are The both for solid-hoofed not superfetate and
τὰ τούτων μείζονα· διὰ γὰρ τὸ μέγεθος τὸ περίττωμα
the than-these larger because-of for the size the residue
ἀναλίσκεται εἰς τὸ κύημα. Πᾶσι γὰρ ὑπάρχει μέγεθος τούτοις
is-spent on the fetus To-all for belongs size to-these
σώματος, τῶν δὲ μεγάλων καὶ τὰ ἔμβρυα μεγάλα κατὰ
of-body of-the and large also the embryos large in
λόγον ἐστίν· διὸ καὶ τὸ τῶν ἐλεφάντων ἔμβρυον ἡλίκον
proportion are wherefore also the of-the elephants embryo as-big-as
μόσχος ἐστίν. Τὰ δὲ πολυτόκα ἐπικυΐσκεται διὰ τὸ τὰ
a-calf is The but many-bearing superfetate because-of the the
πλείονα τοῦ ἑνὸς εἶναι θατέρῳ θάτερον ἐπικύημα. Τούτων
more than-the one to-be to-the-one the-other a-superfetation Of-these
δ' ὅσα μὲν μέγεθος ἔχει, καθάπερ ἄνθρωπος, ἐὰν μὲν
and as-many-as indeed size have just-as human if indeed
ἡ ἑτέρα ὀχεία τῆς ἑτέρας γένηται πάρεγγυς, ἐκτρέφει
the one copulation than-the other come-about near it-rears-out
τὸ ἐπικυηθέν· ἤδη γὰρ ὤπται τὸ τοιοῦτον συμβεβηκός.
the superfetated already for has-been-seen the such happening
Αἴτιον δὲ τὸ εἰρημένον· καὶ γὰρ ἐν τῇ μιᾷ συνουσίᾳ πλεῖον
Cause and the said and for in the one intercourse more
τὸ ἀπιόν ἐστι σπέρμα, ὃ μερισθὲν ποιεῖ πολυτοκεῖν, ὧν
the departing is seed which divided makes to-bear-many of-which
ὑστερίζει θάτερον. Ὅταν δ' ἤδη τοῦ κυήματος ηὐξημένου
comes-later the-one When but already the fetus having-grown
συμβῇ γίνεσθαι τὴν ὀχείαν, ἐπικυΐσκεται μέν ποτε,
it-happen to-come-about the copulation it-superfetates indeed sometimes
ὀλιγάκις μέντοι διὰ τὸ τὴν ὑστέραν συμμύειν ὡς τὰ
seldom however because-of the the uterus to-close as the
πολλὰ μέχρι τῶν κυουμένων ταῖς γυναιξίν. Ἂν δὲ συμβῇ
most-part until the being-carried in-the women If and it-happen

ποτέ (καὶ γὰρ τοῦτ᾽ ἤδη γέγονεν), οὐ δύναται τελειοῦν,
ever and for this already has-happened not it-can to-complete
ἀλλὰ κυήματ᾽ ἐκπίπτει παραπλήσια τοῖς καλουμένοις
but fetuses fall-out similar to-the so-called
ἐκτρώμασιν. Ὥσπερ γὰρ ἐπὶ τῶν μονοτόκων διὰ
miscarriages Just-as for in-the-case-of the single-bearing because-of
τὸ μέγεθος εἰς τὸ προϋπάρχον τὸ περίττωμα τρέπεται
the size into the pre-existing the residue is-turned
πᾶν, οὕτω καὶ τούτοις, πλὴν ἐκείνοις μὲν εὐθύς, τούτοις
all so also in-these except in-those indeed at-once in-these
δ᾽ ὅταν αὐξηθῇ τὸ ἔμβρυον· τότε γὰρ ἔχουσι παραπλησίως
but when be-grown the embryo then for they-are similarly
τοῖς μονοτόκοις. Ὁμοίως δὲ διὰ τὸ τὸν ἄνθρωπον
to-the single-bearing Likewise and because-of the the human
φύσει πολυτόκον εἶναι, καὶ περιεῖναί τι τῷ μεγέθει
by-nature many-bearing to-be and to-be-left-over something to-the size
τῆς ὑστέρας καὶ τοῦ περιττώματος, μὴ μέντοι τοσοῦτον
of-the uterus and of-the residue not however so-much
ὥστε ἕτερον ἐκτρέφειν, μόνα τῶν ζῴων ὀχείαν ἐπιδέχονται
so-that another to-rear-out alone of-the animals copulation admit
κυοῦντα γυνὴ καὶ ἵππος, ἡ μὲν διὰ τὴν εἰρημένην
being-pregnant woman and mare the-one indeed because-of the said
αἰτίαν, ἡ δ᾽ ἵππος διά τε τὴν τῆς φύσεως στερρότητα
cause the and mare because-of both the of-the nature barrenness
καὶ τὸ περιεῖναί τι τῆς ὑστέρας μέγεθος, πλέον μὲν ἢ
and the to-be-left-over some of-the uterus size more indeed than
τῷ ἑνί, ἔλαττον δὲ ἢ ὥστε ἄλλο ἐπικυΐσκεσθαι τέλειον.
for-the one less but than so-that another to-be-superfetated complete
Ἔστι δὲ φύσει ἀφροδισιαστικὸν διὰ τὸ ταὐτὸ
It-is and by-nature lustful because-of the the-same
πεπονθέναι τοῖς στερροῖς· ἐκεῖνά τε γὰρ τοιαῦτ᾽ ἐστὶ
to-have-undergone as-the barren those both for such are

διὰ τὸ μὴ γίνεσθαι κάθαρσιν (τοῦτο δ' ἐστὶν ὥσπερ
because-of the not to-come-about purgation this and is just-as
τοῖς ἄρρεσι τὸ ἀφροδισιάσαι) καὶ ἵπποι αἱ θήλειαι ἥκιστα
for-the males the to-have-intercourse and horses the females least
προΐενται κάθαρσιν. Ἐν πᾶσι δὲ τοῖς ζῳοτοκοῦσι τὰ στερρὰ
emit purgation In all and the live-bearing the barren
τῶν θηλέων ἀφροδισιαστικὰ διὰ τὸ παραπλησίως ἔχειν
of-the females lustful because-of the similarly to-be
τοῖς ἄρρεσιν, ὅταν συνειλεγμένον μὲν ᾖ τὸ σπέρμα, μὴ
to-the males when collected indeed be the seed not
ἀποκρινόμενον δέ. Τοῖς γὰρ θήλεσιν ἡ τῶν καταμηνίων
being-secreted but For-the for females the of-the menses
κάθαρσις σπέρματος ἔξοδός ἐστιν· ἔστι γὰρ τὰ καταμήνια
purgation of-seed outlet is is for the menses
σπέρμα ἄπεπτον, ὥσπερ εἴρηται πρότερον. Διὸ καὶ
seed unconcocted just-as has-been-said before Wherefore also
τῶν γυναικῶν ὅσαι πρὸς τὴν ὁμιλίαν ἀκρατεῖς τὴν
of-the women as-many-as toward the intercourse incontinent the
τοιαύτην, ὅταν πολυτοκήσωσι, παύονται τῆς πτοήσεως·
such when they-have-borne-many they-cease of-the excitement
ἐκκεκριμένη γὰρ ἡ σπερματικὴ περίττωσις οὐκέτι ποιεῖ
having-been-secreted for the seminal residue no-longer makes
τῆς ὁμιλίας ταύτης ἐπιθυμίαν. Ἐν δὲ τοῖς ὄρνισιν αἱ
of-the intercourse this desire In and the birds the
θήλειαι τῶν ἀρρένων ἧττόν εἰσιν ἀφροδισιαστικαὶ διὰ
females than-the males less are lustful because-of
τὸ πρὸς τῷ ὑποζώματι τὰς ὑστέρας ἔχειν, τὰ δ' ἄρρενα
the at the diaphragm the uteri to-have the but males
τοὐναντίον· ἀνεσπασμένους γὰρ ἔχει τοὺς ὄρχεις ἐντός,
the-opposite drawn-up for they-have the testes inside

ὥστ᾽ ἂν ᾖ τὸ γένος τῶν τοιούτων ὀρνίθων φύσει
so-that if be the kind of-the such birds by-nature
σπερματικόν, ἀεὶ δεῖσθαι τῆς ὁμιλίας ταύτης.
seminal always to-need the intercourse this
Τοῖς μὲν οὖν θήλεσι τὸ κάτω καταβαίνειν τὰς ὑστέρας,
For-the indeed then females the downward to-come-down the uteri
τοῖς δ᾽ ἄρρεσι τὸ ἀνασπᾶσθαι τοὺς ὄρχεις συμβαίνει πρὸ
for-the and males the to-be-drawn-up the testes happens ahead
ὁδοῦ πρὸς τὴν ὀχείαν. Δι᾽ ἣν μὲν οὖν αἰτίαν τὰ
on-the-way toward the copulation Because-of which indeed then cause the-ones
μὲν οὐκ ἐπικυΐσκεται παντελῶς, τὰ δ᾽ ἐπικυΐσκεται
indeed not superfetate altogether the-others and superfetate
μέν, τὰ δὲ κυήματα ἐκτρέφει ὁτὲ μὲν ὁτὲ δ᾽ οὔ, καὶ
indeed the but fetuses rear-out at-times indeed at-times but not and
διὰ τίν᾽ αἰτίαν τὰ μὲν ἀφροδισιαστικὰ τὰ δ᾽ οὐκ
because-of what cause the-ones indeed lustful the-others and not
ἀφροδισιαστικὰ τῶν τοιούτων ἐστίν, εἴρηται. Ἔνια δὲ
lustful of-the such are it-has-been-said Some and
τῶν ἐπικυϊσκομένων καὶ πολὺν χρόνον διαλειπούσης τῆς
of-the superfetating even much time having-intervened the
ὀχείας δύναται τὰ κυήματα ἐκτρέφειν, ὅσων σπερματικόν
copulation can the fetuses to-rear-out as-many-as seminal
τε τὸ γένος ἐστὶ καὶ μὴ τὸ σῶμα μέγεθος ἔχει καὶ
both the kind is and not the body size has and
τῶν πολυτόκων ἐστίν. Διὰ μὲν γὰρ τὸ πολυτοκεῖν
of-the many-bearing is Because-of indeed for the to-bear-many
εὐρυχωρίαν ἔχει τῆς ὑστέρας, διὰ δὲ τὸ σπερματικὸν
roominess it-has of-the uterus because-of and the seminal
εἶναι πολὺ προΐεται περίττωμα τῆς καθάρσεως· διὰ δὲ
to-be much it-emits residue of-the purgation because-of and
τὸ μὴ τὸ σῶμα μέγεθος ἔχειν, ἀλλὰ πλείονι λόγῳ τὴν
the not the body size to-have but by-greater ratio the

κάθαρσιν ὑπερβάλλειν τῆς εἰς τὸ κύημα τροφῆς, δύναταί
purgation to-exceed the to the fetus nourishment it-can
τε συνίστασθαι ζῷα καὶ ὕστερον καὶ ταῦτ' ἐκτρέφειν.
both to-be-constituted animals also later and these to-rear-out
Ἔτι δ' αἱ ὑστέραι τῶν τοιούτων οὐ συμμεμύκασι διὰ τὸ
Further and the uteri of-the such not have-closed because-of the
περιεῖναι περίττωμα τῆς καθάρσεως. Τοῦτο δὲ καὶ ἐπὶ
to-be-left-over residue of-the purgation This and also in-the-case-of
γυναικῶν ἤδη συμβέβηκεν· γίνεται γάρ τισι κυούσαις
women already has-happened comes-about for in-some being-pregnant
κάθαρσις καὶ διὰ τέλους. Ἀλλὰ ταύταις μὲν παρὰ φύσιν
purgation even through end But in-these indeed against nature
(διὸ βλάπτει τὸ κύημα), τοῖς δὲ τοιούτοις τῶν ζῴων
wherefore it-harms the fetus to-the but such of-the animals
κατὰ φύσιν· οὕτω γὰρ τὸ σῶμα συνέστηκεν ἐξ ἀρχῆς,
according-to nature so for the body has-been-constituted from beginning
οἷον τὸ τῶν δασυπόδων. Τοῦτο γὰρ ἐπικυΐσκεται τὸ ζῷον·
such-as the of-the hares This for superfetates the animal
οὔτε γὰρ τῶν μεγάλων ἐστὶ πολυτόκον τε (πολυσχιδὲς
neither for of-the large is many-bearing and many-toed
γάρ, τὰ δὲ πολυσχιδῆ πολυτόκα) καὶ σπερματικόν. Δηλοῖ
for the and many-toed many-bearing and seminal Shows
δ' ἡ δασύτης· ὑπερβάλλει γὰρ τοῦ τριχώματος τὸ πλῆθος·
and the hairiness exceeds for of-the hair the quantity
καὶ γὰρ ὑπὸ τοὺς πόδας καὶ ἐντὸς τῶν γνάθων τοῦτ' ἔχει
and for under the feet and inside the jaws this has
τρίχας μόνον τῶν ζῴων. Ἡ δὲ δασύτης σημεῖον πλήθους
hairs alone of-the animals The and hairiness sign of-quantity
περιττώματός ἐστι, διὸ καὶ τῶν ἀνθρώπων οἱ δασεῖς
of-residue is wherefore also of-the humans the hairy
ἀφροδισιαστικοὶ καὶ πολύσπερμοι μᾶλλόν εἰσι τῶν λείων.
lustful and many-seeded more are than-the smooth

Ὁ μὲν οὖν δασύπους τὰ μὲν τῶν κυημάτων ἀτελῆ
The indeed then hare the-ones indeed of-the fetuses incomplete
πολλάκις ἔχει, τὰ δὲ προΐεται τετελειωμένα τῶν τέκνων.
often has the-others and emits completed of-the young

VI · INCOMPLETE BIRTHS

The solid-hoofed and cloven-hoofed bear complete young; the many-toed bear many and incomplete, unarticulated like the fox, bear, and lion, or blind like the dog, wolf, and jackal, too many for the body to rear; the sow alone bears many and complete. Birds like the crow and pigeon hatch blind young; a swallow's pricked eyes heal. Seven-month births may lack ear ducts, and human males are more often deformed, being more mobile; females develop slower inside and age faster outside, being weaker and colder, a natural deformity. Sedentary life and abundant purgation trouble women's pregnancies.

Τῶν δὲ ζῳοτόκων τὰ μὲν ἀτελῆ προΐεται ζῷα τὰ
Of-the and live-bearing the-ones indeed incomplete emit animals the-others
δὲ τετελειωμένα, τὰ μὲν μώνυχα τετελειωμένα καὶ τὰ
and completed the indeed solid-hoofed completed and the
διχηλά, τῶν δὲ πολυσχιδῶν ἀτελῆ πολλά. Τούτου δ'
cloven-hoofed of-the but many-toed incomplete many Of-this and
αἴτιον ὅτι τὰ μὲν μώνυχα μονοτόκα ἐστί, τὰ δὲ διχηλὰ
cause that the indeed solid-hoofed single-bearing are the but cloven-hoofed
ἢ μονοτόκα ἢ διτόκα ὡς ἐπὶ τὸ πολύ, ῥᾴδιον δὲ
either single-bearing or twin-bearing as for the most-part easy and
τὰ ὀλίγα ἐκτρέφειν. Τῶν δὲ πολυσχιδῶν ὅσα ἀτελῆ
the few to-rear-out Of-the and many-toed as-many-as incomplete
τίκτει, πάντα πολυτόκα· διὸ νέα μὲν ὄντα δύναται τὰ
bear all many-bearing wherefore young indeed being they-can the
κυήματα ἐκτρέφειν, ὅταν δ' αὐξηθῇ καὶ λάβῃ μέγεθος,
fetuses to-rear-out when but they-be-grown and take size

οὐ δυναμένου τοῦ σώματος ἐκτρέφειν προΐεται καθάπερ
not being-able the body to-rear-out they-emit just-as
τὰ σκωληκοτόκα τῶν ζῴων. Καὶ γὰρ τούτων τὰ μὲν
the larva-bearing of-the animals And for of-these the-ones indeed
ἀδιάρθρωτα σχεδὸν γεννᾷ, καθάπερ ἀλώπηξ ἄρκτος λέων,
unarticulated nearly generate just-as fox bear lion
παραπλησίως δ' ἔνια καὶ τῶν ἄλλων· τυφλὰ δὲ πάντα
similarly and some also of-the others blind and all
σχεδόν, οἷον ταῦτά τε καὶ ἔτι κύων λύκος θώς. Μόνον
nearly such-as these both and further dog wolf jackal Only
δὲ πολυτόκον ὂν ἡ ὗς τελειοτοκεῖ, καὶ ἐπαλλάττει τοῦτο
and many-bearing being the sow bears-complete and overlaps this
μόνον· πολυτοκεῖ μὲν γὰρ ὡς τὰ πολυσχιδῆ, διχηλὸν
only bears-many indeed for as the many-toed cloven-hoofed
δ' ἐστὶ καὶ μώνυχον· εἰσὶ γάρ που μώνυχες ὗες.
but is and solid-hoofed there-are for somewhere solid-hoofed swine
Πολυτοκεῖ μὲν οὖν διὰ τὸ τὴν εἰς τὸ μέγεθος τροφὴν
Bears-many indeed then because-of the the for the size nourishment
εἰς τὴν σπερματικὴν ἀποκρίνεσθαι περίττωσιν· τοῦτο γὰρ
into the seminal to-be-separated residue this for
ὡς μώνυχον οὐκ ἔχει μέγεθος. Ἅμα δὲ καὶ μᾶλλον, ὥσπερ
as solid-hoofed not has size At-once and also more just-as
ἀμφισβητοῦν τῇ φύσει τῇ τῶν μωνύχων, διχηλόν ἐστιν.
disputing with-the nature the of-the solid-hoofed cloven-hoofed it-is
Διὰ μὲν οὖν τοῦτο καὶ μονοτοκεῖ καὶ διτοκεῖ καὶ
Because-of indeed then this both it-bears-single and bears-twins and
πολυτοκεῖ τὰ πλεῖστα, ἐκτρέφει δ' εἰς τέλος διὰ τὴν
bears-many the most it-rears-out and to end because-of the
τοῦ σώματος εὐβοσίαν· ἔχει γὰρ ὡς πίειρα γῆ φυτοῖς
of-the body good-feeding it-has for as rich earth for-plants
ἱκανὴν καὶ δαψιλῆ τροφήν. Τίκτουσι δ' ἀτελῆ καὶ τυφλὰ
sufficient and abundant nourishment Bear and incomplete and blind

καὶ τῶν ὀρνίθων τινές, ὅσοι πολυτοκοῦσιν αὐτῶν μὴ
also of-the birds some as-many-as bear-many of-them not
σωμάτων ἔχοντες μέγεθος, οἷον κορώνη κίττα στρουθοὶ
of-bodies having size such-as crow jay sparrows
χελιδόνες, καὶ τῶν ὀλιγοτοκούντων ὅσα μὴ δαψιλῆ
swallows and of-the few-bearing as-many-as not abundant
τροφὴν συνεκτίκτει τοῖς τέκνοις, οἷον φάττα καὶ τρυγὼν
nourishment bear-along-with the young such-as ring-dove and turtle-dove
καὶ περιστερά. Καὶ διὰ τοῦτο τῶν χελιδόνων ἐάν τις
and pigeon And because-of this of-the swallows if someone
ἔτι νέων ὄντων ἐκκεντήσῃ τὰ ὄμματα, πάλιν ὑγιάζονται·
still young being prick-out the eyes again they-become-healthy
γινομένων γὰρ ἀλλ᾽ οὐ γεγενημένων φθείρεται, διόπερ
coming-to-be for but not having-come-to-be they-are-destroyed wherefore
φύονται καὶ βλαστάνουσιν ἐξ ἀρχῆς.
they-grow and sprout from beginning
Ὅλως δὲ προτερεῖ μὲν τῆς τελειογονίας διὰ τὴν
Generally and it-anticipates indeed of-the complete-bearing because-of the
ἀδυναμίαν τοῦ ἐκτρέφειν, ἀτελῆ δὲ γίνεται διὰ τὸ
incapacity of-the to-rear-out incomplete and they-become because-of the
προτερεῖν. Δῆλον δὲ τοῦτο καὶ ἐπὶ τῶν ἑπταμήνων·
to-anticipate Clear and this also in-the-case-of the seven-month-ones
διὰ γὰρ τὸ ἀτελῆ εἶναι πολλάκις ἔνια αὐτῶν γίνεται
because-of for the incomplete to-be often some of-them come-to-be
οὐδὲ τοὺς πόρους ἔχοντά πω διηρθρωμένους, οἷον ὦτων
not-even the ducts having yet articulated such-as of-ears
καὶ μυκτήρων, ἀλλ᾽ ἐπαυξανομένοις διαρθροῦται, καὶ
and of-nostrils but growing-on are-articulated and
βιοῦσι πολλὰ τῶν τοιούτων. Γίνεται δὲ ἀνάπηρα μᾶλλον
live many of-the such Come-to-be and deformed more
ἐν τοῖς ἀνθρώποις τὰ ἄρρενα τῶν θηλέων, ἐν δὲ τοῖς
in the humans the males than-the females in but the

ἄλλοις οὐθὲν μᾶλλον. Αἴτιον δ' ὅτι ἐν τοῖς ἀνθρώποις
others nothing more Cause and that in the humans
πολὺ διαφέρει τὸ ἄρρεν τοῦ θήλεος τῇ θερμότητι τῆς
much differs the male from-the female in-the heat of-the
φύσεως, διὸ κινητικώτερά ἐστι κυούμενα τὰ ἄρρενα
nature wherefore more-mobile are being-carried the males
τῶν θηλέων· διὰ δὲ τὸ κινεῖσθαι θραύεται μᾶλλον·
than-the females because-of and the to-be-moved they-are-broken more
εὔθραυστον γὰρ τὸ νέον διὰ τὴν ἀσθένειαν. Διὰ
easily-broken for the young because-of the weakness Because-of
τὴν αὐτὴν δὲ ταύτην αἰτίαν καὶ τελειοῦται τὰ θήλεα
the same and this cause also are-completed the females
τοῖς ἄρρεσιν οὐχ ὁμοίως ἐν ταῖς γυναιξίν· ἐν μὲν γὰρ
with-the males not likewise in the women in indeed for
τῇ μητρὶ ἐν πλείονι χρόνῳ διακρίνεται τὸ θῆλυ τοῦ
the mother in more time is-differentiated the female from-the
ἄρρενος, ἐξελθόντων δὲ πάντα πρότερον ἐπιτελεῖται, οἷον
male having-come-out but all earlier is-accomplished such-as
ἥβη καὶ ἀκμὴ καὶ γῆρας, τοῖς θήλεσιν ἢ τοῖς ἄρρεσιν.
puberty and prime and old-age for-the females than for-the males
Ἀσθενέστερα γάρ ἐστι καὶ ψυχρότερα τὰ θήλεα τὴν φύσιν,
Weaker for are and colder the females in-the nature
καὶ δεῖ ὑπολαμβάνειν ὥσπερ ἀναπηρίαν εἶναι τὴν
and one-must to-suppose just-as deformity to-be the
θηλύτητα φυσικήν. Ἔσω μὲν οὖν διακρίνεται διὰ τὴν
femaleness natural Inside indeed then it-is-distinguished because-of the
ψυχρότητα βραδέως (ἡ γὰρ διάκρισις πέψις ἐστί, πέττει
coldness slowly the for distinguishing concoction is concocts
δ' ἡ θερμότης, εὔπεπτον δὲ τὸ θερμότερον), ἐκτὸς δὲ
and the heat easily-concocted and the hotter Outside and
διὰ τὴν ἀσθένειαν ταχὺ συνάπτει πρὸς τὴν ἀκμὴν καὶ
because-of the weakness quickly it-reaches toward the prime and

τὸ γῆρας· πάντα γὰρ τὰ ἐλάττω πρὸς τὸ τέλος ἔρχεται
the old-age all for the smaller toward the end comes
θᾶττον, ὥσπερ καὶ ἐν τοῖς κατὰ τέχνην ἔργοις, καὶ ἐν
faster just-as also in the according-to art works and in
τοῖς ὑπὸ φύσεως συνισταμένοις. Διὰ τὸ εἰρημένον δ'
the by nature constituted Because-of the said and
αἴτιον καὶ ἐν μὲν τοῖς ἀνθρώποις τὰ διδυμοτοκούμενα θῆλυ
cause also in indeed the humans the twin-born female
καὶ ἄρρεν ἧττον σώζεται, ἐν δὲ τοῖς ἄλλοις οὐθὲν ἧττον·
and male less are-preserved in but the others nothing less
τοῖς μὲν γὰρ παρὰ φύσιν τὸ ἰσοδρομεῖν, οὐκ ἐν ἴσοις
for-the-ones indeed for against nature the to-run-equal not in equal
χρόνοις γινομένης τῆς διακρίσεως, ἀλλ' ἀνάγκη τὸ ἄρρεν
times coming-about the distinguishing but necessary the male
ὑστερεῖν ἢ τὸ θῆλυ προτερεῖν, ἐν δὲ τοῖς ἄλλοις οὐ παρὰ
to-come-later or the female to-anticipate in but the others not against
φύσιν. Συμβαίνει δὲ καὶ διαφορὰ περὶ τὰς κυήσεις ἐπί
nature Happens and also difference about the pregnancies in-the-case-of
τε τῶν ἀνθρώπων καὶ ἐπὶ τῶν ἄλλων ζῴων· τὰ
both the humans and in-the-case-of the other animals the-ones
μὲν γὰρ εὐθηνεῖ μᾶλλον τοῖς σώμασι τὸν πλεῖστον χρόνον,
indeed for thrive more in-the bodies the most time
τῶν δὲ γυναικῶν αἱ πολλαὶ δυσφοροῦσι περὶ τὴν κύησιν.
of-the but women the many are-distressed about the pregnancy
Ἔστι μὲν οὖν αἴτιόν τι τούτων καὶ διὰ τὸν βίον·
There-is indeed then cause some of-these also because-of the life
ἑδραῖαι γὰρ οὖσαι πλείονος γέμουσι περιττώματος, ἐπεὶ ἐν
sedentary for being of-more they-are-full residue since in
οἷς ἔθνεσι πονητικὸς ὁ τῶν γυναικῶν βίος, οὔθ' ἡ κύησις
which nations laborious the of-the women life neither the pregnancy
ὁμοίως ἐπίδηλός ἐστι, τίκτουσί τε ῥᾳδίως κἀκεῖ καὶ
likewise evident is they-bear and easily both-there and

πανταχοῦ αἱ εἰωθυῖαι πονεῖν· ἀναλίσκει γὰρ ὁ πόνος τὰ
everywhere the accustomed to-labor uses-up for the labor the
περιττώματα, ταῖς δ' ἑδραίαις ἐνυπάρχει πολλὰ τοιαῦτα
residues in-the but sedentary are-present-in many such
διὰ τὴν ἀπονίαν καὶ τὸ μὴ γίνεσθαι καθάρσεις κυούσαις,
because-of the lack-of-labor and the not to-come-about purgations to-the-pregnant
ἥ τε ὠδὶς ἐπίπονός ἐστιν· ὁ δὲ πόνος γυμνάζει τὸ πνεῦμα
the both birth-pang laborious is the and labor trains the breath
ὥστε δύνασθαι κατέχειν, ἐν ᾧ τὸ τίκτειν ἐστὶ ῥᾳδίως
so-that to-be-able to-hold in which the to-bear is easily
ἢ χαλεπῶς. Ἔστι μὲν οὖν, ὥσπερ εἴρηται, καὶ ταῦτα
or hard Are indeed then just-as has-been-said also these
συμβαλλόμενα πρὸς τὴν διαφορὰν τοῦ πάθους τοῖς ἄλλοις
contributing toward the difference of-the affection for-the other
ζῴοις καὶ ταῖς γυναιξί, μάλιστα δ' ὅτι τοῖς μὲν αὐτῶν
animals and for-the women most but that for-the-ones indeed of-them
ὀλίγη γίνεται κάθαρσις, τοῖς δ' οὐκ ἐπίδηλος ὅλως,
little comes-about purgation for-the-others and not evident at-all
ταῖς δὲ γυναιξὶ πλείστη τῶν ζῴων, ὥστε μὴ γινομένης τῆς
for-the but women most of-the animals so-that not coming-about the
ἐκκρίσεως διὰ τὴν κύησιν ταῖς μὲν ταραχὴν παρέχει·
secretion because-of the pregnancy for-some indeed disturbance it-provides
καὶ γὰρ μὴ κυούσαις, ὅταν αἱ καθάρσεις μὴ γίγνωνται,
and for not being-pregnant when the purgations not come-about
νόσοι συμβαίνουσιν· καὶ τὸ πρῶτον δὲ ταράττονται
diseases happen and the first and they-are-disturbed
συλλαμβάνουσαι μᾶλλον αἱ πλεῖσται τῶν γυναικῶν· τὸ
conceiving more the most of-the women the
γὰρ κύημα κωλύειν μὲν δύναται τὰς καθάρσεις, διὰ
for fetus to-prevent indeed can the purgations because-of
μικρότητα δὲ οὐθὲν ἀναλίσκει πλῆθος τοῦ περιττώματος
smallness but nothing uses-up quantity of-the residue

τὸ πρῶτον, ὕστερον δὲ κουφίζει μεταλαμβάνον· ἐν δὲ τοῖς
the first later but it-lightens taking-a-share in but the
ἄλλοις ζῴοις διὰ τὸ ὀλίγον εἶναι σύμμετρον γίνεται
other animals because-of the little to-be proportionate becomes
πρὸς τὴν αὔξησιν τῶν ἐμβρύων, καὶ ἀναλισκομένων τῶν
toward the growth of-the embryos and being-used-up the
περιττωμάτων τῶν ἐμποδιζόντων τὴν τροφὴν εὐημερεῖ τοῖς
residues the hindering the nourishment they-thrive in-the
σώμασι μᾶλλον. Καὶ ἐν τοῖς ἐνύδροις τὸν αὐτὸν τρόπον καὶ
bodies more And in the aquatic the same way and
ἐν τοῖς ὄρνισιν. Ἤδη δὲ μεγάλων γινομένων τῶν κυημάτων,
in the birds Already and large becoming the fetuses
ὅσοις μηκέτι συμβαίνει ἡ εὐτροφία τῶν σωμάτων,
for-as-many-as no-longer happens the good-nourishment of-the bodies
αἴτιον τὸ τὴν αὔξησιν τοῦ κυήματος δεῖσθαι πλείονος τῆς
cause the the growth of-the fetus to-need more of-the
περιττωματικῆς τροφῆς. Ὀλίγαις δέ τισι τῶν γυναικῶν
residual nourishment For-few and some of-the women
βέλτιον ἔχειν τὰ σώματα συμβαίνει κυούσαις· αὗται δ'
better to-be the bodies happens being-pregnant these and
εἰσὶν ὅσαις μικρὰ τὰ περιττώματα ἐν τῷ σώματι,
are for-as-many-as small the residues in the body
ὥστε καταναλίσκεσθαι μετὰ τῆς εἰς τὸ ἔμβρυον τροφῆς.
so-that to-be-used-up with the for the embryo nourishment

The so-called mole occurs in women: a woman seemed pregnant, the swelling grew, and after three or four years she bore a lump of flesh so hard it could hardly be cut with iron. It comes from the fetus being half-cooked in the womb through weakness of heat, and it occurs chiefly or only in women because woman alone among animals has an abundant, unconcocted purgation.

Περὶ δὲ τῆς καλουμένης μύλης ῥητέον, ἣ γίνεται
About and the so-called mole it-must-be-told which comes-to-be
μὲν ὀλιγάκις ταῖς γυναιξί, γίνεται δέ τισι τοῦτο τὸ
indeed seldom to-the women comes-to-be but to-some this the
πάθος κυούσαις. Τίκτουσι γὰρ ὃ καλοῦσι μύλην. Ἤδη
affection being-pregnant They-bear for what they-call mole Already
γὰρ συνέβη τινὶ γυναικὶ συγγενομένῃ τῷ ἀνδρὶ
for it-happened to-some woman having-had-intercourse with-the husband
καὶ δοξάσῃ συλλαβεῖν, τὸ μὲν πρῶτον ὅ τε ὄγκος
and having-thought to-have-conceived the indeed first the both swelling
ηὐξάνετο τῆς γαστρὸς καὶ τἆλλα ἐγίγνετο κατὰ λόγον,
grew of-the belly and the-rest came-about according-to reason
ἐπεὶ δὲ ὁ χρόνος ἦν τοῦ τόκου, οὔτ' ἔτικτεν οὔτε ὁ
when but the time was of-the birth neither did-she-bear nor the
ὄγκος ἐλάττων ἐγίνετο, ἀλλ' ἔτη τρία ἢ τέτταρα οὕτω
swelling smaller became but years three or four so
διετέλει, ἕως δυσεντερίας γενομένης καὶ κινδυνεύσασα
she-continued until dysentery having-come-about and having-been-endangered
ὑπ' αὐτῆς ἔτεκε σάρκα ἣν καλοῦσι μύλην. Ἔτι δὲ καὶ
by it she-bore flesh which they-call mole Further and also
συγκαταγηράσκει καὶ συναποθνήσκει τοῦτο τὸ πάθος. Τὰ
it-grows-old-with and dies-with this the affection The
δὲ θύραζε ἐξιόντα τῶν τοιούτων γίνεται σκληρὰ οὕτως
and outside coming-out of-the such become hard so

ὥστε μόλις διακόπτεσθαι καὶ σιδήρῳ. Περὶ μὲν οὖν
so-that hardly to-be-cut-through even by-iron About indeed then
τῆς τοῦ πάθους αἰτίας εἴρηται ἐν τοῖς προβλήμασιν·
the of-the affection cause it-has-been-said in the problems
πάσχει γὰρ ταὐτὸν τὸ κύημα ἐν τῇ μήτρᾳ ὅπερ ἐν τοῖς
undergoes for the-same the fetus in the womb which-very in the
ἑψομένοις τὰ μολυνόμενα, καὶ οὐ διὰ θερμότητα, ὥσπερ
being-boiled the half-boiled and not because-of heat just-as
τινές φασιν, ἀλλὰ μᾶλλον δι' ἀσθένειαν θερμότητος.
some say but rather because-of weakness of-heat
Ἔοικε γὰρ ἡ φύσις ἀδυνατεῖν καὶ οὐ δύνασθαι τελειῶσαι οὐδ'
Seems for the nature to-be-incapable and not to-be-able to-complete nor
ἐπιθεῖναι τῇ γενέσει πέρας. Διὸ καὶ συγκαταγηράσκει ἢ
to-put-on to-the generation limit Wherefore also it-grows-old-with or
πολὺν ἐμμένει χρόνον· οὔτε γὰρ ὡς τετελειωμένον οὔθ' ὡς
much remains time neither for as completed nor as
πάμπαν ἀλλότριον ἔχει τὴν φύσιν. Τῆς γὰρ σκληρότητος
altogether foreign has the nature Of-the for hardness
ἡ ἀπεψία αἰτία· ἀπεψία γάρ τις καὶ ἡ μόλυνσίς
the non-concoction cause non-concoction for some also the half-boiling
ἐστιν. Ἀπορίαν δ' ἔχει, διὰ τί ποτ' ἐν τοῖς ἄλλοις
is Puzzle and it-has because-of what ever in the other
οὐχὶ γίνεται ζῴοις, εἰ μή τι πάμπαν λέληθεν.
not comes-about animals if not something altogether has-escaped-notice
Αἴτιον δὲ δεῖ νομίζειν ὅτι μόνον ὑστερικόν ἐστι
Cause and one-must to-think that alone subject-to-uterine-trouble is
γυνὴ τῶν ἄλλων ζῴων, καὶ περὶ τὰς καθάρσεις πλεονάζει
woman of-the other animals and about the purgations exceeds
καὶ οὐ δύναται πέττειν αὐτάς· ὅταν οὖν ἐκ δυσπέπτου
and not can to-concoct them when then from hard-to-concoct

ἰκμάδος συστῇ τὸ κύημα, τότε γίνεται ἡ καλουμένη
moisture be-constituted the fetus then comes-to-be the so-called
μύλη ἐν ταῖς γυναιξὶν εὐλόγως ἢ μάλιστα ἢ μόναις.
mole in the women reasonably either most or alone

VIII · MILK

Milk forms in the internal live-bearers for the time of birth, as nature times it; in women it is useless before the seventh month. Early on the sweetest nourishment molds the embryo and the remainder is salty; when the fetus is complete less is used and the milk sweetens. It collects in the breasts by the body's order, as the voice and breasts change at puberty, and is concocted blood, not corrupted, so Empedocles' "white pus" errs. Menses and milk are one nature, so nursing women neither menstruate nor conceive, and birth comes when the navel no longer feeds the fetus.

Τὸ δὲ γάλα γίνεται τοῖς θήλεσιν ὅσα ζῳοτοκεῖ ἐν
The and milk comes-to-be for-the females as-many-as bear-live in
αὐτοῖς, χρήσιμον μὲν εἰς τὸν χρόνον τὸν τοῦ τόκου. Τῆς
themselves useful indeed for the time the of-the birth Of-the
γὰρ τροφῆς χάριν αὐτὸ τῆς θύραζε ἐποίησεν ἡ φύσις τοῖς
for nourishment for-the-sake it the outside made the nature for-the
ζῴοις, ὥστ᾽ οὔτ᾽ ἐλλείπειν αὐτὸ ἐν τῷ χρόνῳ τούτῳ οὐθὲν
animals so-that neither to-fall-short it in the time this at-all
οὔθ᾽ ὑπερβάλλειν οὐθέν· ὅπερ καὶ φαίνεται συμπῖπτον, ἂν
nor to-exceed at-all which-very also appears coinciding if
μή τι γένηται παρὰ φύσιν. Τοῖς μὲν οὖν ἄλλοις ζῴοις,
not something come-about against nature For-the indeed then other animals
διὰ τὸ τὸν χρόνον ἕνα τῆς κυήσεως εἶναι, πρὸς τοῦτον
because-of the the time one of-the pregnancy to-be to this
ἀπαντᾷ τὸν καιρὸν ἡ πέψις αὐτοῦ· τοῖς δ᾽ ἀνθρώποις
meets the season the concoction of-it for-the but humans

ἐπεὶ πλείους οἱ χρόνοι, κατὰ τὸν πρῶτον ἀναγκαῖον
since more the times at the first necessary
ὑπάρχειν. Διὸ πρὸ τῶν ἑπτὰ μηνῶν ἄχρηστον τὸ γάλα
to-be-present Wherefore before the seven months useless the milk
ταῖς γυναιξί, τότε δ' ἤδη γίνεται χρήσιμον. Εὐλόγως δὲ
for-the women then but already becomes useful Reasonably and
συμβαίνει καὶ διὰ τὴν ἐξ ἀνάγκης αἰτίαν πεπεμμένον
it-happens also because-of the from necessity cause concocted
εἰς τοὺς τελευταίους χρόνους. Τὸ μὲν γὰρ πρῶτον ἡ τοῦ
at the last times The indeed for first the of-the
τοιούτου περιττώματος ἀπόκρισις εἰς τὴν τῶν ἐμβρύων
such residue secretion into the of-the embryos
ἀναλίσκεται γένεσιν. Πάντων δ' ἡ τροφὴ τὸ γλυκύτατον
is-used-up generation Of-all and the nourishment the sweetest
καὶ πεπεμμένον, ὥστ' ἀφαιρουμένης τῆς τοιαύτης δυνάμεως
and concocted so-that being-taken-away the such power
ἀνάγκη τὸ λοιπὸν ἁλμυρὸν γίνεσθαι καὶ δύσχυμον.
necessary the remainder salty to-become and ill-flavored
Τελεουμένων δὲ τῶν κυημάτων πλέον τὸ περίττωμα
Being-completed and the fetuses more the residue
τὸ περιγινόμενον· ἔλαττον γὰρ τὸ ἀναλισκόμενον καὶ
the being-left-over less for the being-used-up and
γλυκύτερον, οὐκ ἀφαιρουμένου ὁμοίως τοῦ εὐπέπτου. Οὐ γὰρ
sweeter not being-taken-away likewise the easily-concocted Not for
ἔτι εἰς πλάσιν τοῦ ἐμβρύου γίγνεται ἡ δαπάνη, ἀλλ' εἰς
any-longer into molding of-the embryo becomes the expenditure but into
μικρὰν αὔξησιν, ὥσπερ ἑστηκὸς ἤδη διὰ τὸ τέλος ἔχειν
small growth just-as standing already because-of the end to-have
τὸ ἔμβρυον. Ἔστι γάρ τις καὶ κυήματος τελείωσις. Διόπερ
the embryo There-is for some also of-fetus completion Wherefore
ἐξέρχεται καὶ μεταβάλλει τὴν γένεσιν, ὡς ἔχον τὰ αὑτοῦ,
it-comes-out and changes the generation as having the of-its-own

καὶ οὐκέτι λαμβάνει τὸ μὴ αὑτοῦ, ἐν ᾧ καιρῷ γίνεται τὸ
and no-longer takes the not its-own in which season becomes the
γάλα χρήσιμον. Εἰς δὲ τὸν ἄνω τόπον καὶ τοὺς μαστοὺς
milk useful Into and the upper place and the breasts
συλλέγεται διὰ τὴν ἐξ ἀρχῆς τάξιν τῆς συστάσεως.
it-is-collected because-of the from beginning order of-the constitution
Τὸ μὲν γὰρ ἄνω τοῦ ὑποζώματος τὸ κύριον τοῦ ζῴου
The indeed for above the diaphragm the sovereign of-the animal
ἐστί, τὸ δὲ κάτω τῆς τροφῆς καὶ τοῦ περιττώματος,
is the but below of-the nourishment and of-the residue
ὅπως ὅσα πορευτικὰ τῶν ζῴων ἐν αὑτοῖς ἔχοντα τὴν
so-that as-many-as able-to-walk of-the animals in themselves having the
τῆς τροφῆς αὐτάρκειαν μεταβάλλῃ τοὺς τόπους. Ἐντεῦθεν
of-the nourishment self-sufficiency may-change the places From-here
δὲ καὶ ἡ σπερματικὴ περίττωσις ἀποκρίνεται διὰ τὴν
and also the seminal residue is-secreted because-of the
εἰρημένην αἰτίαν ἐν τοῖς κατ' ἀρχὰς λόγοις.
said cause in the at beginnings discourses
Ἔστι δὲ τό τε τῶν ἀρρένων περίττωμα καὶ τὰ
Is and the both of-the males residue and the
καταμήνια τοῖς θήλεσιν αἱματικῆς φύσεως. Τούτου δ'
menses for-the females of-sanguineous nature Of-this and
ἀρχὴ καὶ τῶν φλεβῶν ἡ καρδία· αὕτη δ' ἐν τοῖς μορίοις
principle and of-the veins the heart this and in the parts
τούτοις. Διὸ πρῶτον ἐνταῦθα ἀναγκαῖον γίγνεσθαι τὴν
these Wherefore first there necessary to-come-about the
μεταβολὴν ἐπίδηλον τῆς τοιαύτης περιττώσεως. Διόπερ
change evident of-the such residue Wherefore
αἵ τε φωναὶ μεταβάλλουσι καὶ τῶν ἀρρένων καὶ τῶν
the both voices change both of-the males and of-the
θηλειῶν, ὅταν ἄρχωνται σπέρμα φέρειν (ἡ γὰρ ἀρχὴ τῆς
females when they-begin seed to-bear the for principle of-the

φωνῆς ἐντεῦθεν· ἀλλοία δὲ γίνεται ἀλλοίου γινομένου τοῦ
voice from-here different and becomes different becoming the
κινοῦντος), καὶ τὰ περὶ τοὺς μαστοὺς αἴρεται καὶ τοῖς
moving and the about the breasts is-raised even for-the
ἄρρεσιν ἐπιδήλως, μᾶλλον δὲ τοῖς θήλεσιν· διὰ γὰρ
males evidently more but for-the females because-of for
τὸ κάτω τὴν ἔκκρισιν γίνεσθαι πολλὴν κενὸς ὁ τόπος
the below the secretion to-come-about much empty the place
γίνεται ὁ τῶν μαστῶν αὐταῖς καὶ σομφός. Ὁμοίως δὲ
becomes the of-the breasts for-them and spongy Likewise and
καὶ τοῖς κάτω τοὺς μαστοὺς ἔχουσιν. Γίνεται μὲν οὖν
also for-those below the breasts having Becomes indeed then
ἐπίδηλος καὶ ἡ φωνὴ καὶ τὰ περὶ τοὺς μαστοὺς καὶ
evident also the voice and the about the breasts and
ἐν τοῖς ἄλλοις ζῴοις τοῖς ἐμπείροις περὶ ἕκαστον γένος,
in the other animals to-those experienced about each kind
ἐπὶ δὲ τῶν ἀνθρώπων διαφέρει πλεῖστον.
in-the-case-of but the humans it-differs most
Αἴτιον δὲ τὸ πλείστην εἶναι τὴν περίττωσιν τοῖς θήλεσι
Cause and the most to-be the residue for-the females
τούτοις τῶν θηλέων καὶ τοῖς ἄρρεσι τῶν ἀρρένων ὡς
these of-the females and for-the males of-the males as
κατὰ μέγεθος, ταῖς μὲν τὴν τῶν καταμηνίων,
according-to size for-the-ones indeed the of-the menses
τοῖς δὲ τὴν τοῦ σπέρματος πρόεσιν. Ὅταν οὖν μὴ
for-the-others and the of-the seed emission When then not
λαμβάνῃ μὲν τὸ ἔμβρυον τὴν τοιαύτην ἀπόκρισιν, κωλύῃ
take indeed the embryo the such secretion prevent
δὲ θύραζε βαδίζειν, ἀναγκαῖον εἰς τοὺς κενοὺς τόπους
but outside to-go necessary into the empty places
ἀθροίζεσθαι τὸ περίττωμα πᾶν, ὅσοιπερ ἂν ὦσιν ἐπὶ τῶν
to-be-gathered the residue all whichever — be on the

αὐτῶν πόρων. Ἔστι δ' ἑκάστοις τοιοῦτος ὁ τῶν μαστῶν
same ducts Is and for-each such the of-the breasts
τόπος δι' ἀμφοτέρας τὰς αἰτίας ἕνεκά τε τοῦ
place because-of both the causes for-the-sake-of both the
βελτίστου γεγονὼς τοιοῦτος καὶ ἐξ ἀνάγκης. Ἐνταῦθα
best having-come-to-be such and from necessity Here
δὲ ἤδη συνίσταται καὶ γίνεται πεπεμμένη τροφὴ τοῖς
and already is-constituted and becomes concocted nourishment for-the
ζῴοις. Τῆς δὲ πέψεως ἔστι μὲν λαβεῖν τὴν εἰρημένην
animals Of-the and concoction it-is-possible indeed to-take the said
αἰτίαν, ἔστι δὲ τὴν ἐναντίαν. Εὔλογον γὰρ καὶ μεῖζον
cause it-is-possible and the opposite Reasonable for also larger
ὂν τὸ ἔμβρυον πλείω λαμβάνειν τροφήν, ὥστε ἔλαττον
being the embryo more to-take nourishment so-that less
περιγίνεσθαι περὶ τὸν χρόνον τοῦτον· πέττεται δὲ θᾶττον τὸ
to-be-left-over about the time this is-concocted and faster the
ἔλαττον. Ὅτι μὲν οὖν ἐστὶ τὸ γάλα τὴν αὐτὴν ἔχον φύσιν
less That indeed then is the milk the same having nature
τῇ ἀποκρίσει ἐξ ἧς γίνεται ἕκαστον, δῆλον, εἴρηται
with-the secretion from which comes-to-be each clear it-has-been-said
δὲ καὶ πρότερον. Ἡ γὰρ αὐτὴ ὕλη ἡ τρέφουσα καὶ ἐξ ἧς
and also before The for same matter the nourishing and from which
συνιστᾷ τὴν γένεσιν ἡ φύσις. Ἔστι δὲ τοῦτο ἡ αἱματικὴ
constitutes the generation the nature Is and this the sanguineous
ὑγρότης τοῖς ἐναίμοις. Τὸ γὰρ γάλα πεπεμμένον αἷμά
moisture for-the blooded The for milk concocted blood
ἐστιν, ἀλλ' οὐ διεφθαρμένον. Ἐμπεδοκλῆς δ' ἢ οὐκ ὀρθῶς
is but not corrupted Empedocles but either not rightly
ὑπελάμβανεν ἢ οὐκ εὖ μετήνεγκε ποιήσας ὡς τὸ γάλα
supposed or not well used-a-metaphor having-written that the milk

μηνὸς ἐν ὀγδοάτου δεκάτῃ πύον ἔπλετο λευκόν.
of-the-month in of-the-eighth tenth-day pus became white

Σαπρότης γὰρ καὶ πέψις ἐναντίον, τὸ δὲ πύον σαπρότης
Rottenness for and concoction opposite the but pus rottenness
τις ἐστίν, τὸ δὲ γάλα τῶν πεπεμμένων. Οὐ γίνονται
some is the but milk of-the concocted Not come-about
δὲ οὔτε θηλαζομέναις αἱ καθάρσεις κατὰ φύσιν, οὔτε
and either for-those-giving-suck the purgations according-to nature or
συλλαμβάνουσι θηλαζόμεναι· κἂν συλλάβωσιν, ἀποσβέννυται
conceive giving-suck and-if they-conceive is-quenched
τὸ γάλα διὰ τὸ τὴν αὐτὴν εἶναι φύσιν τοῦ γάλακτος
the milk because-of the the same to-be nature of-the milk
καὶ τῶν καταμηνίων. Ἡ δὲ φύσις οὐ δύναται πολυχοεῖν
and of-the menses The and nature not can to-pour-much
οὕτως ὥστ' ἐπαμφοτερίζειν, ἀλλ' ἂν ἐπὶ θάτερα γένηται
so so-that to-go-both-ways but if to the-one-side come-about
ἡ ἀπόκρισις, ἀναγκαῖον ἐπὶ θάτερα ἐκλείπειν, ἐὰν μὴ
the secretion necessary on the-other-side to-fail if not
γίνηται βίαιον καὶ παρὰ τὸ ὡς ἐπὶ τὸ πολύ. Τοῦτο δ'
it-come-about forcible and against the as for the most-part This and
ἤδη παρὰ φύσιν· ἐν γὰρ τοῖς μὴ ἀδυνάτοις ἄλλως ἔχειν
already against nature in for the not impossible otherwise to-be
ἀλλ' ἐνδεχομένοις τὸ κατὰ φύσιν ἐστὶ τὸ ὡς ἐπὶ τὸ
but possible the according-to nature is the as for the
πολύ. Καλῶς δὲ διώρισται τοῖς χρόνοις καὶ ἡ γένεσις
most-part Well and has-been-distinguished by-the times also the generation
ἡ τῶν ζῴων. Ὅταν γὰρ διὰ τὸ μέγεθος μηκέτι ἱκανὴ
the of-the animals When for because-of the size no-longer sufficient
ᾖ τῷ κυουμένῳ ἡ διὰ τοῦ ὀμφαλοῦ τροφή, ἀλλὰ τὸ
be for-the being-carried the through the navel nourishment but the

γάλα γίνεται χρήσιμον πρὸς τὴν γινομένην τροφὴν καὶ
milk becomes useful toward the coming nourishment and
οὐκ εἰσιούσης διὰ τοῦ ὀμφαλοῦ τροφῆς, συμπίπτουσιν
not entering through the navel nourishment collapse
αἱ φλέβες περὶ ἃς ὁ καλούμενος ὀμφαλός ἐστι χιτών,
the veins about which the so-called navel is tunic
καὶ διὰ ταῦτα καὶ τότε συμβαίνει θύραζε ἡ ἔξοδος.
and because-of these and then happens outside the exit

IX · HEAD-FIRST BIRTH

Every animal is born head first by nature, because the parts above the navel are larger than those below, and like a balance hung from it they incline toward the heavier side.

Ἐπὶ κεφαλὴν δ' ἡ γένεσίς ἐστι τοῖς ζῴοις πᾶσιν ἡ
On head and the birth is for-the animals all the
κατὰ φύσιν διὰ τὸ τὰ ἄνω τοῦ ὀμφαλοῦ μείζω ἔχειν
according-to nature because-of the the upper of-the navel greater to-have
ἢ τὰ κάτω. Καθάπερ οὖν ἐν ζυγοῖς ἠρτημένα ἐξ αὐτοῦ
than the lower Just-as then on balance-beams hung from it
ῥέπει ἐπὶ τὸ βάρος. Ἔχει δὲ τὰ μείζω πλεῖον βάρος.
they-incline toward the weight Have and the greater more weight

The times of gestation follow, for the most part, the length of life, and depend on the size of the offspring: horses carry about a year and the elephant two. Nature wishes to measure gestation, birth, and life by the periods of day and night, month, and year, and by the moon's phases, since the moon shares the sun's light and is a lesser sun. Heat and cold up to a proportion cause generation and then destruction, but the indeterminacy of matter makes nature's counting inexact.

Οἱ δὲ χρόνοι τῆς κυήσεως ἑκάστῳ τῶν ζῴων ὡρισμένοι
The and times of-the gestation for-each of-the animals determined
τυγχάνουσιν ὡς μὲν ἐπὶ τὸ πολὺ κατὰ τοὺς βίους. Τῶν
happen-to-be as indeed for the most-part according-to the lives Of-the
γὰρ χρονίων καὶ τὰς γενέσεις εὔλογον εἶναι χρονιωτέρας.
for long-lived also the generations reasonable to-be longer
Οὐ μὴν τοῦτό γ' ἐστὶν αἴτιον, ἀλλ' ὡς ἐπὶ τὸ πολὺ
Not truly this at-least is cause but as for the most-part
τοῦτο συμβέβηκεν· τὰ γὰρ μείζω καὶ τελειότερα τῶν
this has-happened the for greater and more-complete of-the
ἐναίμων ζῴων καὶ ζῶσι πολὺν χρόνον, οὐ μέντοι τὰ
blooded animals also live much time not however the
μείζω πάντα μακροβιώτερα. Πάντων γὰρ ἄνθρωπος πλείω
greater all longer-lived Of-all for human more
ζῇ χρόνον, πλὴν ἐλέφαντος, ὅσων ἀξιόπιστον ἔχομεν τὴν
lives time except elephant of-which trustworthy we-have the
πεῖραν· ἔλαττον δ' ἐστὶ τὸ γένος τὸ τῶν ἀνθρώπων ἢ τὸ
experience smaller but is the kind the of-the humans than the
τῶν λοφούρων καὶ πολλῶν ἄλλων. Αἴτιον δὲ τοῦ μὲν εἶναι
of-the bushy-tailed and of-many others Cause and of-the indeed to-be
μακρόβιον ὁτιοῦν ζῷον τὸ κεκρᾶσθαι παραπλησίως πρὸς
long-lived any animal the to-have-been-blended similarly toward
τὸν περιέχοντα ἀέρα, καὶ δι' ἄλλα συμπτώματ' ἄττα
the surrounding air and because-of other accidents some

φυσικά, περὶ ὧν ὕστερον ἐροῦμεν, τῶν δὲ χρόνων τῶν
natural about which later we-shall-speak of-the and times the
περὶ τὴν κύησιν τὸ μέγεθος τῶν γεννωμένων. Οὐ γὰρ ῥᾴδιον
about the gestation the size of-the being-generated Not for easy
ἐν ὀλίγῳ χρόνῳ λαμβάνειν τὴν τελείωσιν τὰς μεγάλας
in little time to-take the completion the great
συστάσεις οὔτε ζῴων οὔτε τῶν ἄλλων ὡς εἰπεῖν οὐθενός.
constitutions either of-animals or of-the others so to-speak of-anything
Διόπερ ἵπποι καὶ τὰ συγγενῆ ζῷα τούτοις ἐλάττω ζῶντα
Wherefore horses and the akin animals to-these less living
χρόνον κύει πλείω χρόνον· τῶν μὲν γὰρ ἐνιαύσιος
time are-pregnant more time of-the-ones indeed for yearly
ὁ τόκος, τῶν δὲ δεκάμηνος ὁ πλεῖστος. Διὰ τὴν
the birth of-the-others and ten-month the longest Because-of the
αὐτὴν δ' αἰτίαν πολυχρόνιος καὶ ὁ τῶν ἐλεφάντων ἐστὶ
same and cause long-lasting also the of-the elephants is
τόκος· διετὴς γὰρ ἡ κύησις διὰ τὴν ὑπερβολὴν τοῦ
birth two-year for the gestation because-of the excess of-the
μεγέθους. Εὐλόγως δὲ πάντων οἱ χρόνοι καὶ τῶν κυήσεων
size Reasonably and of-all the times both of-the gestations
καὶ τῶν γενέσεων καὶ τῶν βίων μετρεῖσθαι βούλονται
and of-the generations and of-the lives to-be-measured wish
κατὰ φύσιν περιόδοις. Λέγω δὲ περίοδον ἡμέραν καὶ
according-to nature by-periods I-mean and period day and
νύκτα καὶ μῆνα καὶ ἐνιαυτὸν καὶ τοὺς χρόνους τοὺς
night and month and year and the times the
μετρουμένους τούτοις, ἔτι δὲ τὰς τῆς σελήνης περιόδους.
measured by-these further and the of-the moon periods
Εἰσὶ δὲ περίοδοι σελήνης πανσέληνοί τε καὶ φθίσεις καὶ
Are and periods of-moon full-moons both and wanings and
τῶν μεταξὺ χρόνων αἱ διχοτομίαι· κατὰ γὰρ ταύτας
of-the between times the half-moons according-to for these

συμβάλλει πρὸς τὸν ἥλιον· ὁ γὰρ μὴς κοινὴ περίοδός
it-comes-together with the sun the for month common period
ἐστιν ἀμφοτέρων. Ἔστι δὲ ἡ σελήνη ἀρχὴ διὰ τὴν
is of-both Is and the moon principle because-of the
πρὸς τὸν ἥλιον κοινωνίαν καὶ τὴν μετάληψιν τὴν τοῦ
with the sun partnership and the taking-share the of-the
φωτός· γίνεται γὰρ ὥσπερ ἄλλος ἥλιος ἐλάττων· διὸ
light becomes for just-as another sun smaller wherefore
συμβάλλεται εἰς πάσας τὰς γενέσεις καὶ τελειώσεις.
it-contributes to all the generations and completions
Καὶ γὰρ θερμότητες καὶ ψύξεις μέχρι συμμετρίας τινὸς
And for heats and chillings up-to proportion some
ποιοῦσι τὰς γενέσεις, μετὰ δὲ ταῦτα τὰς φθοράς. Τούτων
make the generations after and these the destructions Of-these
δ' ἔχουσι τὸ πέρας καὶ τῆς ἀρχῆς καὶ τῆς τελευτῆς αἱ
and have the limit both of-the beginning and of-the end the
τούτων κινήσεις τῶν ἄστρων. Ὥσπερ γὰρ καὶ θάλατταν
of-these motions of-the stars Just-as for both sea
καὶ πᾶσαν ὁρῶμεν τὴν τῶν ὑγρῶν φύσιν ἱσταμένην καὶ
and all we-see the of-the moist-things nature standing and
μεταβάλλουσαν κατὰ τὴν τῶν πνευμάτων κίνησιν καὶ
changing according-to the of-the winds motion and
στάσιν, τὸν δ' ἀέρα καὶ τὰ πνεύματα κατὰ τὴν τοῦ
rest the and air and the winds according-to the of-the
ἡλίου καὶ τῆς σελήνης περίοδον, οὕτω καὶ τὰ ἐκ τούτων
sun and of-the moon period so also the from these
φυόμενα καὶ τὰ ἐν τούτοις ἀκολουθεῖν ἀναγκαῖον. Κατὰ
growing and the in these to-follow necessary In
λόγον γὰρ ἀκολουθεῖν καὶ τὰς τῶν ἀκυροτέρων περιόδους
proportion for to-follow also the of-the less-sovereign periods
ταῖς τῶν κυριωτέρων. Βίος γάρ τις καὶ πνεύματός ἐστι καὶ
those of-the more-sovereign Life for some also of-wind is and

γένεσις καὶ φθίσις. Τῆς δὲ τῶν ἄστρων τούτων περιφορᾶς
generation and waning Of-the and of-the stars these revolution
τάχ᾽ ἂν ἕτεραί τινες εἶεν ἀρχαί. Βούλεται μὲν οὖν ἡ
perhaps — other some may-be principles Wishes indeed then the
φύσις τοῖς τούτων ἀριθμοῖς ἀριθμεῖν τὰς γενέσεις καὶ τὰς
nature with-the of-these numbers to-number the generations and the
τελευτάς, οὐκ ἀκριβοῖ δὲ διά τε τὴν τῆς ὕλης ἀοριστίαν
ends not makes-exact but because-of both the of-the matter indefiniteness
καὶ διὰ τὸ γίνεσθαι πολλὰς ἀρχάς, αἳ τὰς γενέσεις
and because-of the to-come-about many principles which the generations
τὰς κατὰ φύσιν καὶ τὰς φθορὰς ἐμποδίζουσαι πολλάκις
the according-to nature and the destructions hindering often
αἴτιαι τῶν παρὰ φύσιν συμπιπτόντων εἰσίν. Περὶ μὲν οὖν
causes of-the against nature happening are About indeed then
τῆς ἔσωθεν τροφῆς τῶν ζῴων καὶ τῆς θύραζε γενέσεως
the from-within nourishment of-the animals and of-the outside birth
εἴρηται, καὶ χωρὶς περὶ ἑκάστου καὶ κοινῇ περὶ πάντων.
it-has-been-said both separately about each and in-common about all

BOOK V

I · SLEEP AND THE EYES

The affections that make parts differ, like eye color and voice, serve no end unless peculiar to the kind, so their causes are matter and motion; the early physicists saw only these. Newborns sleep most, living like plants in the womb, and wake more as growth moves downward. Children's eyes are bluer at first, which shows in humans, whose eyes are many-colored; man and horse alone are sometimes odd-eyed. Eye color depends not on fire, as Empedocles says, but on the eye's liquid: little makes blue eyes, weak by day and prone to glaucoma, much makes black, weak by night. Sharp sight is of two kinds, distinguishing by a pure eye and seeing far by deep-set eyes, as through a tube.

Περὶ δὲ τῶν παθημάτων οἷς διαφέρουσι τὰ μόρια τῶν
About and the affections by-which differ the parts of-the
ζῴων θεωρητέον νῦν. Λέγω δὲ τὰ τοιαῦτα παθήματα
animals one-must-study now I-mean and the such affections
τῶν μορίων, οἷον γλαυκότητα ὀμμάτων καὶ μελανίαν, καὶ
of-the parts such-as blueness of-eyes and blackness and
φωνῆς ὀξύτητα καὶ βαρύτητα, καὶ χρώματος καὶ τριχῶν
of-voice highness and deepness and of-color and of-hairs
ἢ πτερῶν διαφοράν. Τυγχάνει δὲ τῶν τοιούτων ἔνια μὲν
or of-feathers difference Happen and of-the such some indeed
ὅλοις ὑπάρχοντα τοῖς γένεσιν, ἐνίοις δ' ὅπως ἔτυχεν, οἷον
to-whole belonging the kinds to-some but as it-chanced such-as
μάλιστ' ἐπὶ τῶν ἀνθρώπων τοῦτο συμβέβηκεν. Ἔτι δὲ
most in-the-case-of the humans this has-happened Further and
κατὰ τὰς τῆς ἡλικίας μεταβολὰς τὰ μὲν πᾶσιν ὁμοίως
according-to the of-the age changes the-ones indeed to-all likewise
ὑπάρχει τοῖς ζῴοις, τὰ δ' ὑπεναντίως, ὥσπερ περί τε
belong the animals the-others and contrariwise just-as about both

φωνὰς καὶ περὶ τριχῶν χρόαν· τὰ μὲν γὰρ οὐ πολιοῦται
voices and about of-hairs color the-ones indeed for not grow-gray
πρὸς τὸ γῆρας ἐπιδήλως, ὁ δ' ἄνθρωπος μάλιστα τοῦτο
toward the old-age evidently the but human most this
πάσχει τῶν ἄλλων ζῴων. Καὶ τὰ μὲν εὐθὺς ἀκολουθεῖ
undergoes of-the other animals And the-ones indeed at-once follow
γενομένοις, τὰ δὲ προϊούσης τῆς ἡλικίας γίνεται δῆλα καὶ
having-been-born the-others and advancing the age become clear also
γηρασκόντων. Περὶ δὲ τούτων καὶ τῶν τοιούτων πάντων
growing-old About and these and the such all
οὐκέτι τὸν αὐτὸν τρόπον δεῖ νομίζειν εἶναι τῆς αἰτίας.
no-longer the same way one-must to-think to-be of-the cause
Ὅσα γὰρ μὴ τῆς φύσεως ἔργα κοινῇ μηδ' ἴδια τοῦ
As-many-as for not of-the nature works in-common nor peculiar of-the
γένους ἑκάστου, τούτων οὐθὲν ἕνεκά του τοιοῦτον
kind each of-these none for-the-sake of-something such
οὔτ' ἔστιν οὔτε γίνεται. Ὀφθαλμὸς μὲν γὰρ ἕνεκά
either is or comes-to-be Eye indeed for for-the-sake
του, γλαυκὸς δ' οὐχ ἕνεκά του, πλὴν ἂν ἴδιον
of-something blue but not for-the-sake of-something unless — peculiar
ᾖ τοῦ γένους τοῦτο τὸ πάθος. Οὔτε δ' ἐπ' ἐνίων
be of-the kind this the affection Nor and in-the-case-of some
πρὸς τὸν λόγον συντείνει τὸν τῆς οὐσίας, ἀλλ' ὡς ἐξ
to the account does-it-extend the of-the substance but as from
ἀνάγκης γιγνομένων εἰς τὴν ὕλην καὶ τὴν κινήσασαν
necessity coming-to-be to the matter and the having-moved
ἀρχὴν ἀνακτέον τὰς αἰτίας. Ὥσπερ γὰρ ἐλέχθη κατ'
principle one-must-refer the causes Just-as for it-was-said at
ἀρχὰς ἐν τοῖς πρώτοις λόγοις, οὐ διὰ τὸ γίγνεσθαι
beginnings in the first discourses not because-of the to-come-to-be
ἕκαστον ποιόν τι, διὰ τοῦτο ποιόν τι ἐστίν,
each of-a-quality something because-of this of-a-quality something is

ὅσα τεταγμένα καὶ ὡρισμένα ἔργα τῆς φύσεώς ἐστιν,
as-many-as ordered and defined works of-the nature are
ἀλλὰ μᾶλλον διὰ τὸ εἶναι τοιαδὶ γίγνεται τοιαῦτα·
but rather because-of the to-be such they-come-to-be such
τῇ γὰρ οὐσίᾳ ἡ γένεσις ἀκολουθεῖ καὶ τῆς οὐσίας
the for substance the generation follows and of-the substance
ἕνεκά ἐστιν, ἀλλ' οὐχ αὕτη τῇ γενέσει. Οἱ δ' ἀρχαῖοι
for-the-sake is but not this the generation The but ancient
φυσιολόγοι τοὐναντίον ᾠήθησαν. Τούτου δ' αἴτιον ὅτι
natural-philosophers the-opposite thought Of-this and cause that
οὐχ ἑώρων πλείους οὔσας τὰς αἰτίας, ἀλλὰ μόνον τὴν τῆς
not they-saw more being the causes but only the of-the
ὕλης καὶ τὴν τῆς κινήσεως, καὶ ταύτας ἀδιορίστως, τῆς
matter and the of-the motion and these indistinctly of-the
δὲ τοῦ λόγου καὶ τῆς τοῦ τέλους ἀνεπισκέπτως εἶχον.
but of-the account and of-the of-the end without-examination they-were
Ἔστι μὲν οὖν ἕκαστον ἕνεκά του, γίνεται δ' ἤδη
Is indeed then each for-the-sake of-something comes-to-be but already
διά τε ταύτην τὴν αἰτίαν καὶ διὰ τὰς λοιπάς, ὅσαπερ
because-of both this the cause and because-of the remaining as-many-as
ἐν τῷ λόγῳ ἐνυπάρχει τῷ ἑκάστου ἢ ἐστιν ἕνεκά
in the account are-present-in the of-each either is for-the-sake
του ἢ οὗ ἕνεκα. Τῶν δὲ μὴ τοιούτων, ὅσων
of-something or of-which for-the-sake Of-the but not such of-as-many-as
ἐστὶ γένεσις, ἤδη τούτων τὸ αἴτιον ἐν τῇ κινήσει δεῖ καὶ
is generation already of-these the cause in the motion one-must and
τῇ γενέσει ζητεῖν, ὡς ἐν αὐτῇ τῇ συστάσει τὴν διαφορὰν
the generation seek as in itself the constitution the difference
λαμβανόντων. Ὀφθαλμὸν μὲν γὰρ ἐξ ἀνάγκης ἕξει
taking Eye indeed for from necessity it-will-have
(τοιόνδε γὰρ ζῷον ὑπόκειται ὄν), τοιόνδε δὲ ὀφθαλμὸν
such for animal is-assumed being such but eye

ἐξ ἀνάγκης μέν, οὐ τοιαύτης δ' ἀνάγκης, ἀλλ' ἄλλον
from necessity indeed not such but necessity but other
τρόπον, ὅτι τοιονδὶ ἢ τοιονδὶ ποιεῖν πέφυκε καὶ πάσχειν.
way that this-sort or this-sort to-act is-natural and to-be-acted-upon
Διωρισμένων δὲ τούτων λέγωμεν περὶ τῶν ἐφεξῆς
Having-been-determined and these let-us-speak about the next
συμβαινόντων. Πρῶτον μὲν οὖν ὅταν γένωνται τὰ παιδία
happenings First indeed then when come-to-be the children
πάντων, μάλιστα τῶν ἀτελῶν, καθεύδειν εἴωθε, διὰ τὸ
of-all most of-the incomplete to-sleep are-wont because-of the
καὶ ἐν τῇ μητρί, ὅταν λάβῃ πρῶτον αἴσθησιν, καθεύδοντα
also in the mother when it-take first perception sleeping
διατελεῖν. Ἔχει δ' ἀπορίαν περὶ τῆς ἐξ ἀρχῆς γενέσεως,
to-continue Has and puzzle about the from beginning generation
πότερον ἐγρήγορσις ὑπάρχει τοῖς ζῴοις πρότερον ἢ ὕπνος.
whether waking belongs to-the animals earlier or sleep
Διὰ γὰρ τὸ φαίνεσθαι προϊούσης τῆς ἡλικίας ἐγειρόμενα
Because-of for the to-appear advancing the age waking
μᾶλλον, εὔλογον τοὐναντίον ἐν τῇ ἀρχῇ τῆς γενέσεως
more reasonable the-opposite in the beginning of-the generation
ὑπάρχειν, τὸν ὕπνον. Ἔτι δὲ διὰ τὸ τὴν μετάβασιν ἐκ
to-belong the sleep Further and because-of the the passage from
τοῦ μὴ εἶναι εἰς τὸ εἶναι διὰ τοῦ μεταξὺ γίνεσθαι· ὁ δ'
the not to-be into the to-be through the between to-come-about the and
ὕπνος εἶναι δοκεῖ τὴν φύσιν τῶν τοιούτων, οἷον τοῦ ζῆν
sleep to-be seems the nature of-the such such-as of-the to-live
καὶ τοῦ μὴ ζῆν μεθόριον, καὶ οὔτε μὴ εἶναι παντελῶς ὁ
and of-the not to-live boundary and neither not to-be altogether the
καθεύδων οὔτ' εἶναι. Τῷ γὰρ ἐγρηγορέναι τὸ ζῆν μάλισθ'
sleeper nor to-be To-the for to-be-awake the to-live most
ὑπάρχει διὰ τὴν αἴσθησιν. Εἰ δ' ἐστὶν ἀναγκαῖον ἔχειν
belongs because-of the perception If and it-is necessary to-have

αἴσθησιν τὸ ζῷον, καὶ τότε πρῶτόν ἐστι ζῷον ὅταν
perception the animal and then first it-is animal when
αἴσθησις γένηται πρῶτον, τὴν μὲν ἐξ ἀρχῆς διάθεσιν
perception comes-to-be first the indeed from beginning disposition
οὐχ ὕπνον ἀλλ᾽ ὅμοιον ὕπνῳ δεῖ νομίζειν, οἵανπερ ἔχει
not sleep but like to-sleep one-must to-think such-as has
καὶ τὸ τῶν φυτῶν γένος· καὶ γὰρ συμβέβηκε κατὰ τοῦτον
also the of-the plants kind and for it-happens during this
τὸν χρόνον τὰ ζῷα φυτοῦ βίον ζῆν. Τοῖς δὲ φυτοῖς
the time the animals of-plant life to-live To-the but plants
ὑπάρχειν ὕπνον ἀδύνατον· οὐθεὶς γὰρ ὕπνος ἀνέγερτος, τὸ
to-belong sleep impossible no for sleep unwakeable the
δὲ τῶν φυτῶν πάθος τὸ ἀνάλογον τῷ ὕπνῳ ἀνέγερτον.
but of-the plants affection the analogous to-the sleep unwakeable
Καθεύδειν μὲν οὖν τὰ ζῷα τὸν πλείω χρόνον ἀναγκαῖον
To-sleep indeed then the animals the more time necessary
διὰ τὸ τὴν αὔξησιν καὶ τὸ βάρος ἐπικεῖσθαι τοῖς ἄνω
because-of the the growth and the weight to-lie-on the upper
τόποις (εἰρήκαμεν δὲ τὴν αἰτίαν τοῦ καθεύδειν τοιαύτην
places we-have-stated and the cause of-the to-sleep such
οὖσαν ἐν ἑτέροις)· ἀλλ᾽ ὅμως ἐγειρόμενα φαίνεται καὶ ἐν τῇ
being in other-works but nevertheless waking they-appear even in the
μήτρᾳ (δῆλον δὲ γίνεται τοῦτο ἐν ταῖς ἀνατομαῖς καὶ ἐν τοῖς
womb clear and becomes this in the dissections and in the
ᾠοτοκοῦσιν), εἶτ᾽ εὐθὺς καθεύδουσι καὶ καταφέρονται πάλιν.
egg-laying then at-once they-sleep and sink-down again
Διόπερ καὶ ἐξελθόντα τὸν πολὺν διάγει χρόνον καθεύδοντα.
Wherefore also having-come-out the much they-spend time sleeping
Καὶ ἐγρηγορότα μὲν οὐ γελᾷ τὰ παιδία, καθεύδοντα δὲ καὶ
And being-awake indeed not laugh the children sleeping but both
δακρύει καὶ γελᾷ. Συμβαίνουσι γὰρ καὶ καθεύδουσιν αἰσθήσεις
weep and laugh Happen for also to-the-sleeping perceptions

τοῖς ζῴοις, οὐ μόνον τὰ καλούμενα ἐνύπνια, ἀλλὰ καὶ παρὰ
to-the animals not only the so-called dreams but also beside
τὸ ἐνύπνιον, καθάπερ τοῖς ἀνισταμένοις καθεύδουσι καὶ
the dream just-as to-those getting-up sleeping and
πολλὰ πράττειν· ἄνευ τοῦ ἐνυπνιάζειν. Εἰσὶ γάρ τινες
many-things to-do without the dreaming There-are for some
οἳ καθεύδοντες ἀνίστανται καὶ πορεύονται βλέποντες ὥσπερ
who sleeping get-up and walk seeing just-as
οἱ ἐγρηγορότες. Τούτοις γὰρ γίνεται τῶν συμβαινόντων
the awake To-these for comes-about of-the happenings
αἴσθησις, οὐκ ἐγρηγορόσι μέν, οὐ μέντοι ὡς ἐνύπνιον. Τὰ
perception not to-the-awake indeed not however as dream The
δὲ παιδία ἐοίκασιν, ὥσπερ ἀνεπιστήμονα τοῦ ἐγρηγορέναι,
and children seem just-as ignorant of-the to-be-awake
διὰ συνήθειαν ἐν τῷ καθεύδειν αἰσθάνεσθαι καὶ ζῆν.
because-of habit in the to-sleep to-perceive and to-live
Προϊόντος δὲ τοῦ χρόνου, καὶ τῆς αὐξήσεως εἰς τὸ κάτω
Advancing and the time and the growth into the lower
μεταβαινούσης, ἐγείρονταί τε μᾶλλον ἤδη, καὶ τὸν πλείω
passing they-wake both more already and the more
χρόνον οὕτω διάγουσιν. Μᾶλλον δὲ τῶν ἄλλων ζῴων ἐν
time so they-spend More and than-the other animals in
ὕπνῳ τὸ πρῶτον διατελοῦσιν· ἀτελέστατα γὰρ γεννᾶται
sleep the first they-continue most-incomplete for it-is-generated
τῶν τετελεσμένων, καὶ τὴν αὔξησιν ἔχοντα μάλιστα ἐπὶ
of-the completed and the growth having most toward
τὸ ἄνω μέρος τοῦ σώματος. Γλαυκότερα δὲ τὰ ὄμματα
the upper part of-the body Bluer and the eyes
τῶν παιδίων εὐθὺς γεννωμένων ἐστὶ πάντων, ὕστερον
of-the children at-once being-born are of-all later
δὲ μεταβάλλει πρὸς τὴν ὑπάρχειν μέλλουσαν φύσιν
but it-changes toward the to-belong being-going-to nature

αὐτοῖς· ἐπὶ δὲ τῶν ἄλλων ζῴων οὐ συμβαίνει τοῦτ'
to-them in-the-case-of but the other animals not happens this
ἐπιδήλως. Τούτου μὲν οὖν αἴτιον τὸ μονόχροα τὰ ὄμματα
evidently Of-this indeed then cause the one-colored the eyes
τῶν ἄλλων εἶναι μᾶλλον, οἷον οἱ βόες μελανόφθαλμοι, τὸ
of-the others to-be more such-as the oxen black-eyed the
δὲ τῶν προβάτων ὑδαρὲς πάντων, τῶν δὲ χαροπὸν
and of-the sheep watery of-all of-the-others and tawny
ὅλον τὸ γένος ἢ γλαυκόν, ἔνια δ' αἰγωπά, καθάπερ
whole the kind or blue some and goat-eyed just-as
καὶ τὸ τῶν αἰγῶν αὐτὸ πλῆθος. Τὰ δὲ τῶν ἀνθρώπων
also the of-the goats itself multitude The but of-the humans
ὄμματα πολύχροα συμβέβηκεν εἶναι· καὶ γὰρ γλαυκοὶ καὶ
eyes many-colored has-happened to-be and for blue and
χαροποὶ καὶ μελανόφθαλμοί τινές εἰσιν, οἱ δ' αἰγωποί.
tawny and black-eyed some are the and goat-eyed
Διὸ καὶ ὥσπερ οὐδ' ἀλλήλων διαφέρουσιν, οὕτως
Wherefore also just-as not-even from-one-another they-differ so
οὐδ' αὐτὰ αὑτῶν· οὐ γὰρ πέφυκε πλείω μιᾶς ἴσχειν.
not-even themselves from-themselves not for it-is-natural more than-one to-have
Μάλιστα δὲ τῶν ἄλλων ζῴων ἵππος πολύχρων ἐστίν· καὶ
Most and of-the other animals horse many-colored is and
γὰρ ἑτερόγλαυκοί τινες αὐτῶν γίνονται. Τοῦτο δὲ τῶν μὲν
for odd-eyed some of-them become This and of-the indeed
ἄλλων οὐθὲν πάσχει ζῴων ἐπιδήλως, ἄνθρωποι δὲ γίνονταί
others none undergoes of-animals evidently humans but become
τινες ἑτερόγλαυκοι. Τοῦ μὲν οὖν τἆλλα ζῷα νέα ὄντα καὶ
some odd-eyed Of-the indeed then the-other animals young being and
πρεσβύτερα μηθὲν ἐπίδηλον μεταβάλλειν, ἐπὶ δὲ τῶν
older nothing evident to-change in-the-case-of but the
παιδίων τοῦτο συμβαίνειν, ἱκανὴν οἰητέον αἰτίαν εἶναι καὶ
children this to-happen sufficient one-must-think cause to-be also

ταύτην, ὅτι τῶν μὲν μονόχρων τῶν δὲ πολύχρων
this that of-the-ones indeed one-colored of-the-others and many-colored
τὸ μόριόν ἐστιν· τοῦ δὲ γλαυκότερα καὶ μὴ χρόαν
the part is of-the and bluer and not color
ἄλλην ἴσχειν αἴτιον ὅτι ἀσθενέστερα τὰ μόρια τῶν νέων,
other to-have cause that weaker the parts of-the young
ἀσθένεια δέ τις ἡ γλαυκότης. Δεῖ δὲ λαβεῖν καθόλου
weakness and some the blueness One-must and to-grasp universally
περὶ τῆς διαφορᾶς τῶν ὀμμάτων, διὰ τίν' αἰτίαν τὰ
about the difference of-the eyes because-of what cause the-ones
μὲν γλαυκὰ τὰ δὲ χαροπὰ τὰ δ' αἰγωπὰ τὰ
indeed blue the-others and tawny the-others and goat-eyed the-others
δὲ μελανόμματ' ἐστίν. Τὸ μὲν οὖν ὑπολαμβάνειν τὰ μὲν
and black-eyed are The indeed then to-suppose the indeed
γλαυκὰ πυρώδη, καθάπερ Ἐμπεδοκλῆς φησί, τὰ δὲ μέλανα
blue fiery just-as Empedocles says the but black
πλεῖον ὕδατος ἔχειν ἢ πυρός, καὶ διὰ τοῦτο τὰ μὲν
more of-water to-have than of-fire and because-of this the-ones indeed
ἡμέρας οὐκ ὀξὺ βλέπειν, τὰ γλαυκά, δι' ἔνδειαν ὕδατος,
by-day not sharp to-see the blue because-of lack of-water
θάτερα δὲ νύκτωρ δι' ἔνδειαν πυρός, οὐ λέγεται καλῶς,
the-others and by-night because-of lack of-fire not is-said well
εἴπερ μὴ πυρὸς τὴν ὄψιν θετέον ἀλλ' ὕδατος πᾶσιν.
if-indeed not of-fire the sight one-must-posit but of-water in-all
Ἔτι δ' ἐνδέχεται τῶν χρωμάτων τὴν αἰτίαν ἀποδοῦναι
Further and it-is-possible of-the colors the cause to-give
καὶ κατ' ἄλλον τρόπον· ἀλλ' εἴπερ ἐστὶν ὥσπερ ἐλέχθη
also in other way but if-indeed it-is just-as it-was-said
πρότερον ἐν τοῖς περὶ τὰς αἰσθήσεις καὶ τούτων ἔτι
before in the about the senses and than-these still
πρότερον ἐν τοῖς περὶ ψυχῆς διωρισμένοις, καὶ ὅτι ὕδατος,
before in the about soul determined both that of-water

καὶ δι᾽ ἣν αἰτίαν ὕδατος ἀλλ᾽ οὐκ ἀέρος ἢ πυρὸς τὸ
and because-of which cause of-water but not of-air or of-fire the
αἰσθητήριον τοῦτ᾽ ἐστί, ταύτην αἰτίαν ὑποληπτέον εἶναι τῶν
sense-organ this is this cause one-must-suppose to-be of-the
εἰρημένων. Οἱ μὲν γὰρ ἔχουσι τῶν ὀφθαλμῶν πλέον
said The-ones indeed for have of-the eyes more
ὑγρόν, οἱ δ᾽ ἔλαττον τῆς συμμέτρου κινήσεως, οἱ
moist the-others and less than-the proportionate motion the-others
δὲ σύμμετρον. Τὰ μὲν οὖν ἔχοντα τῶν ὀμμάτων πολὺ τὸ
and proportionate The indeed then having of-the eyes much the
ὑγρὸν μελανόμματά ἐστι διὰ τὸ μὴ εὐδίοπτ᾽ εἶναι τὰ
moist black-eyed are because-of the not well-transparent to-be the
πολλά, γλαυκὰ δὲ τὰ ὀλίγον, καθάπερ φαίνεται καὶ ἐπὶ
much blue and the little just-as appears also in-the-case-of
τῆς θαλάττης· τὸ μὲν γὰρ εὐδίοπτον αὐτῆς γλαυκὸν
the sea the indeed for well-transparent of-it blue
φαίνεται, τὸ δ᾽ ἧττον ὑδατῶδες, τὸ δὲ μὴ διωρισμένον
appears the but less watery the but not distinguished
διὰ βάθος μέλαν καὶ κυανοειδές. Τὰ δὲ μεταξὺ τῶν
because-of depth black and dark-blue The and between of-the
ὀμμάτων τούτων τῷ μᾶλλον ἤδη διαφέρει καὶ ἧττον.
eyes these by-the more already differ and less
Τὴν δ᾽ αὐτὴν αἰτίαν οἰητέον καὶ τοῦ τὰ μὲν γλαυκὰ
The and same cause one-must-think also of-the the indeed blue
μὴ εἶναι ὀξυωπὰ τῆς ἡμέρας, τὰ δὲ μελανόμματα τῆς
not to-be sharp-sighted in-the day the but black-eyed in-the
νυκτός. Τὰ μὲν γὰρ γλαυκὰ δι᾽ ὀλιγότητα τοῦ ὑγροῦ
night The indeed for blue because-of scantiness of-the moist
κινεῖται μᾶλλον ὑπὸ τοῦ φωτὸς καὶ τῶν ὁρατῶν, ᾗ
are-moved more by the light and the visibles insofar-as
ὑγρὸν καὶ ᾗ διαφανές. Ἔτι δ᾽ ἡ τούτου τοῦ μορίου
moist and insofar-as transparent Further and the of-this the part

κίνησις ὅρασις, ᾗ διαφανές, ἀλλ᾽ οὐχ ᾗ ὑγρόν. Τὰ
motion sight insofar-as transparent but not insofar-as moist The
δὲ μελανόμματα διὰ πλῆθος τοῦ ὑγροῦ ἧττον κινεῖται.
but black-eyed because-of quantity of-the moist less are-moved
Ἀσθενὲς γὰρ τὸ νυκτερινὸν φῶς· ἅμα γὰρ καὶ δυσκίνητον
Weak for the nocturnal light at-once for also hard-to-move
ἐν τῇ νυκτὶ ὅλως γίγνεται τὸ ὑγρόν. Δεῖ δὲ οὔτε μὴ
in the night generally becomes the moist One-must and neither not
κινεῖσθαι αὐτό, οὔτε μᾶλλον ἢ ᾗ διαφανές· ἐκκρούει
to-be-moved it nor more than insofar-as transparent knocks-out
γὰρ ἡ ἰσχυροτέρα κίνησις τὴν ἀσθενεστέραν. Διὸ καὶ
for the stronger motion the weaker Wherefore also
ἀπὸ τῶν ἰσχυρῶν χρωμάτων μεταβάλλοντες οὐχ ὁρῶσι,
from the strong colors changing not they-see
καὶ ἐκ τοῦ ἡλίου εἰς τὸ σκότος ἰόντες· ἰσχυρὰ γὰρ οὖσα
and from the sun into the darkness going strong for being
ἡ ἐνυπάρχουσα κίνησις κωλύει τὴν θύραθεν, καὶ ὅλως
the present-within motion prevents the from-outside and generally
οὔτε σθένουσα οὔτε ἀσθενὴς ὄψις τὰ λαμπρὰ δύναται ὁρᾶν
neither strong nor weak sight the bright can to-see
διὰ τὸ πάσχειν τι μᾶλλον καὶ κινεῖσθαι τὸ ὑγρόν,
because-of the to-be-affected something more and to-be-moved the moist
δηλοῖ δὲ καὶ τὰ ἀρρωστήματα τῆς ὄψεως ἑκατέρας.
shows and also the diseases of-the sight of-each
Τὸ μὲν γὰρ γλαύκωμα γίνεται μᾶλλον τοῖς γλαυκοῖς,
The indeed for glaucoma comes-about more to-the blue-eyed
οἱ δὲ νυκτάλωπες καλούμενοι τοῖς μελανοφθάλμοις. Ἔστι
the and night-blindnesses so-called to-the black-eyed Is
δὲ τὸ μὲν γλαύκωμα ξηρότης τις μᾶλλον τῶν ὀμμάτων,
and the indeed glaucoma dryness some rather of-the eyes
διὸ καὶ συμβαίνει μᾶλλον γηράσκουσιν· ξηραίνεται γάρ,
wherefore also it-happens more to-the-aging is-dried for

ὥσπερ καὶ τὸ ἄλλο σῶμα, καὶ ταῦτα τὰ μόρια πρὸς τὸ
just-as also the other body also these the parts toward the
γῆρας· ὁ δὲ νυκτάλωψ ὑγρότητος πλεονασμός, διὸ τοῖς
old-age the and night-blindness of-moisture excess wherefore to-the
νεωτέροις γίνεται μᾶλλον· ὑγρότερος γὰρ ὁ ἐγκέφαλος
younger it-comes-about more moister for the brain
ὁ τούτων. Ἡ δὲ μέση τοῦ πολλοῦ καὶ τοῦ ὀλίγου
the of-these The and middle of-the much and of-the little
ὑγροῦ βελτίστη ὄψις· οὔτε γὰρ ὡς ὀλίγη οὖσα διὰ
moist best sight neither for as little being because-of
τὸ ταράττεσθαι ἐμποδίζει τὴν τῶν χρωμάτων κίνησιν,
the to-be-disturbed it-hinders the of-the colors motion
οὔτε διὰ πλῆθος παρέχει δυσκινησίαν. Οὐ μόνον δὲ τὰ
nor because-of quantity provides difficulty-of-motion Not only and the
εἰρημένα αἴτια τοῦ ἀμβλὺ ἢ ὀξὺ ὁρᾶν, ἀλλὰ καὶ ἡ τοῦ
said causes of-the dim or sharp to-see but also the of-the
δέρματος φύσις τοῦ ἐπὶ τῇ κόρῃ καλουμένῃ. Δεῖ γὰρ αὐτὸ
skin nature the on the pupil so-called It-must for it
διαφανὲς εἶναι, τοιοῦτον δ' ἀναγκαῖον εἶναι τὸ λεπτὸν καὶ
transparent to-be such and necessary to-be the thin and
λευκὸν καὶ ὁμαλόν, λεπτὸν μὲν ὅπως ἡ θύραθεν εὐθυπορῇ
white and even thin indeed so-that the from-outside go-straight
κίνησις, ὁμαλὸν δ' ὅπως μὴ ἐπισκιάζῃ ῥυτιδούμενον (καὶ
motion even and so-that not it-overshadow being-wrinkled and
γὰρ διὰ τοῦθ' οἱ γέροντες οὐκ ὀξὺ ὁρῶσιν· ὥσπερ
for because-of this the old not sharp see just-as
γὰρ καὶ τὸ ἄλλο δέρμα, καὶ τὸ τοῦ ὄμματος ῥυτιδοῦταί
for also the other skin also the of-the eye is-wrinkled
τε καὶ παχύτερον γίνεται γηράσκουσιν), λευκὸν δὲ διὰ
both and thicker becomes in-the-aging white and because-of

τὸ τὸ μέλαν μὴ εἶναι διαφανές· αὐτὸ γὰρ τοῦτ' ἐστὶ τὸ
the the black not to-be transparent itself for this is the
μέλαν, τὸ μὴ διαφαινόμενον.
black the not showing-through
Διόπερ οὐδ' οἱ λαμπτῆρες δύνανται φαίνειν, ἐὰν ὦσιν
Wherefore not-even the lanterns can to-shine if they-be
ἐκ τοιούτου δέρματος. Ἐν μὲν οὖν τῷ γήρᾳ καὶ ταῖς
from such skin In indeed then the old-age and the
νόσοις διὰ ταύτας τὰς αἰτίας οὐκ ὀξὺ βλέπουσι, τὰ δὲ
diseases because-of these the causes not sharp they-see the but
παιδία δι' ὀλιγότητα τοῦ ὑγροῦ γλαυκὰ φαίνεται τὸ
children because-of scantiness of-the moist blue appear the
πρῶτον. Ἑτερόγλαυκοι δὲ γίνονται μάλιστα οἱ ἄνθρωποι
first Odd-eyed and become most the humans
καὶ οἱ ἵπποι διὰ τὴν αὐτὴν αἰτίαν δι' ἥνπερ ὁ
and the horses because-of the same cause because-of which-very the
μὲν ἄνθρωπος πολιοῦται μόνος, τῶν δ' ἄλλων ἵππος
indeed human grows-gray alone of-the and others horse
μόνον ἐπιδήλως γηράσκων λευκαίνεται τὰς τρίχας. Ἡ
alone evidently aging whitens the hairs The
τε γὰρ πολιότης ἀσθένειά τίς ἐστι τοῦ ὑγροῦ τοῦ ἐν
both for grayness weakness some is of-the moisture of-the in
τῷ ἐγκεφάλῳ καὶ ἀπεψία καὶ ἡ γλαυκότης· τὸ γὰρ
the brain and non-concoction and the blueness the for
λίαν λεπτὸν ἢ λίαν παχὺ τὴν αὐτὴν ἔχει δύναμιν τὸ
too thin or too thick the same has power the-one
μὲν τῷ ὀλίγῳ τὸ δὲ τῷ πολλῷ ὑγρῷ. Ὅταν οὖν
indeed by-the little the-other and by-the much moist When then
μὴ δύνηται ἀπαρτίσαι ἡ φύσις ὁμοίως ἢ πέψασα
not can to-finish-off the nature likewise either having-concocted

τὸ ἐν ἀμφοτέροις ὑγρὸν ἢ μὴ πέψασα, ἀλλὰ τὸ μὲν
the in both moist or not having-concocted but the-one indeed
τὸ δὲ μή, τότε συμβαίνει γίνεσθαι ἑτερογλαύκους.
the-other and not then it-happens to-become odd-eyed
Περὶ δὲ τοῦ τὰ μὲν ὀξυωπὰ εἶναι τῶν ζῴων τὰ δὲ
About and the the-ones indeed sharp-sighted to-be of-the animals the-others and
μή, δύο τρόποι τῆς αἰτίας εἰσίν. Διχῶς γὰρ λέγεται τὸ ὀξὺ
not two ways of-the cause are In-two-ways for is-said the sharp
σχεδόν, καὶ περὶ τὸ ἀκούειν καὶ τὸ ὀσφραίνεσθαι ὁμοίως τοῦτ'
nearly also about the to-hear and the to-smell likewise this
ἔχει. Λέγεται γὰρ ὀξὺ ὁρᾶν ἓν μὲν τὸ πόρρωθεν δύνασθαι
it-is Is-said for sharp to-see one indeed the from-afar to-be-able
ὁρᾶν, ἓν δὲ τὸ τὰς διαφορὰς ὅτι μάλιστα διαισθάνεσθαι
to-see one and the the differences as most to-distinguish
τῶν ὁρωμένων. Ταῦτα δ' οὐχ ἅμα συμβαίνει τοῖς αὐτοῖς.
of-the being-seen These and not at-once happen to-the same
Ὁ γὰρ αὐτὸς ἐπηλυγισάμενος τὴν χεῖρα ἢ δι' αὐλοῦ
The for same having-shaded the hand or through tube
βλέπων τὰς μὲν διαφορὰς οὐθὲν μᾶλλον οὐδ' ἧττον κρίνει
looking the indeed differences nothing more nor less judges
τῶν χρωμάτων, ὄψεται δὲ πορρώτερον. Οἱ γοῦν ἐκ
of-the colors he-will-see but farther Those at-any-rate from
τῶν ὀρυγμάτων καὶ φρεάτων ἐνίοτε ἀστέρας ὁρῶσιν. Ὥστ'
the pits and wells sometimes stars see So-that
εἴ τι τῶν ζῴων ἔχει μὲν προβολὴν τοῦ ὄμματος πολλήν,
if some of-the animals has indeed projection of-the eye much
τὸ δ' ἐν τῇ κόρῃ ὑγρὸν μὴ καθαρὸν μηδὲ σύμμετρον τῇ
the but in the pupil moist not pure nor proportionate to-the
κινήσει τῇ θύραθεν, μηδὲ τὸ ἐπιπολῆς δέρμα λεπτόν, τοῦτο
motion the from-outside nor the on-the-surface skin thin this
περὶ μὲν τὰς διαφορὰς οὐκ ἀκριβώσει τῶν χρωμάτων,
about indeed the differences not will-be-exact of-the colors

πόρρωθεν δ' ἔσται ὁρατικόν, ὥσπερ εἰ καὶ ἐγγύθεν, μᾶλλον
from-afar but will-be able-to-see just-as if also from-near more
τῶν τὸ μὲν ὑγρὸν καθαρὸν ἐχόντων καὶ τὸ σκέπασμα
than-those the indeed moist pure having and the covering
αὐτοῦ, μὴ ἐχόντων δ' ἐπισκύνιον πρὸ τῶν ὀμμάτων μηθέν.
of-it not having but brow before the eyes at-all
Τοῦ μὲν γὰρ οὕτως ὀξὺ ὁρᾶν ὥστε διαισθάνεσθαι τὰς
Of-the indeed for so sharp to-see so-that to-distinguish the
διαφοράς, ἐν αὐτῷ τῷ ὄμματί ἐστιν ἡ αἰτία· ὥσπερ γὰρ
differences in itself the eye the cause just-as for
ἐν ἱματίῳ καθαρῷ καὶ αἱ μικραὶ κηλῖδες ἔνδηλοι γίνονται,
in cloak clean even the small stains plain become
οὕτως καὶ ἐν τῇ καθαρᾷ ὄψει καὶ αἱ μικραὶ κινήσεις δῆλαι
so also in the pure sight even the small motions clear
καὶ ποιοῦσιν αἴσθησιν. Τοῦ δὲ τὰ πόρρωθεν ὁρᾶν καὶ τὴν
and make perception Of-the and the from-afar to-see and the
ἀπὸ τῶν πόρρωθεν ὁρατῶν ἀφικνεῖσθαι κίνησιν ἡ θέσις·
from the from-afar visibles to-arrive motion the position
αἰτία τῶν ὀφθαλμῶν· τὰ μὲν γὰρ ἐξόφθαλμα οὐκ εὐωπὰ
cause of-the eyes the indeed for prominent-eyed not well-seeing
πόρρωθεν, τὰ δ' ἐντὸς ἔχοντα τὰ ὄμματα ἐν κοίλῳ
from-afar the but inside having the eyes in hollow
κείμενα ὁρατικὰ τῶν πόρρωθεν διὰ τὸ τὴν κίνησιν
lying able-to-see of-the from-afar because-of the the motion
μὴ σκεδάννυσθαι εἰς ἀχανὲς ἀλλ' εὐθυπορεῖν. Οὐθὲν
not to-be-scattered into the-gaping-open but to-go-straight Nothing
γὰρ διαφέρει τὸ λέγειν ὁρᾶν, ὥσπερ τινές φασι, τῷ τὴν
for it-differs the to-say to-see just-as some say by-the the
ὄψιν ἐξιέναι (ἂν γὰρ μὴ ᾖ τι πρὸ τῶν ὀμμάτων,
sight to-go-out if for not be something before the eyes
διασκεδαννυμένην ἀνάγκη ἐλάττω προσπίπτειν τοῖς
being-scattered necessary less to-fall-on the

ὁρωμένοις καὶ ἧττον τὰ πόρρωθεν ὁρᾶν), ἢ τὸ τῇ ἀπὸ
being-seen and less the from-afar to-see or the by-the from
τῶν ὁρωμένων κινήσει ὁρᾶν. Ὁμοίως γὰρ ἀνάγκη καὶ τὴν
the being-seen motion to-see Likewise for necessary also the
ὄψιν τῇ κινήσει ὁρᾶν. Μάλιστα μὲν οὖν ἑωρᾶτο ἂν τὰ
sight by-the motion to-see Most indeed then would-be-seen — the
πόρρωθεν, εἰ ἀπὸ τῆς ὄψεως εὐθὺς συνεχὴς ἦν πρὸς τὸ
from-afar if from the sight straight continuous were-there to the
ὁρώμενον οἷον αὐλός· οὐ γὰρ ἂν διελύετο ἡ κίνησις ἡ
being-seen such-as tube not for — would-be-dissolved the motion the
ἀπὸ τῶν ὁρατῶν· εἰ δὲ μή, ὅσῳπερ ἂν ἐπὶ πλέον ἀπέχῃ,
from the visibles if but not by-as-much-as — to more it-be-distant
τοσούτῳ ἀκριβέστερον τὰ πόρρωθεν ὁρᾶν ἀνάγκη. Καὶ
so-much more-exactly the from-afar to-see necessary And
τῆς μὲν τῶν ὀμμάτων διαφορᾶς ἔστωσαν αὗται αἱ αἰτίαι.
of-the indeed of-the eyes difference let-be these the causes

II · HEARING AND SMELL

Hearing and smell are exact in the same two ways: by a pure organ and membrane, which judges differences, and by long passages before the organ, which carry sound and scent from afar, as in long-nosed Laconian hounds and long-eared animals. The ear's passage ends near the breath, so the heard can be spoken back, and yawning and exhaling dull hearing. Man has the poorest far sense but the finest discrimination, having the purest, thinnest-skinned organ for his size; the seal has only ducts for ears, since it lives in water.

Τὸν αὐτὸν δὲ τρόπον ἔχει καὶ περὶ τὴν ἀκοὴν καὶ τὴν
The same and way it-is also about the hearing and the
ὄσφρησιν· ἓν μὲν γάρ ἐστι τοῦ ἀκριβῶς ἀκούειν καὶ
smell one indeed for is of-the exactly to-hear and

ὀσφραίνεσθαι τὸ τὰς διαφορὰς τῶν ὑποκειμένων αἰσθητῶν
to-smell the the differences of-the underlying perceptibles
ὅτι μάλιστα αἰσθάνεσθαι πάσας, ἓν δὲ τὸ πόρρωθεν καὶ
as most to-perceive all one and the from-afar both
ἀκούειν καὶ ὀσφραίνεσθαι. Τοῦ μὲν οὖν τὰς διαφορὰς κρίνειν
to-hear and to-smell Of-the indeed then the differences to-judge
καλῶς τὸ αἰσθητήριον αἴτιον, ὥσπερ ἐπὶ τῆς ὄψεως, ἂν
well the sense-organ cause just-as in-the-case-of the sight if
ᾖ καθαρὸν αὐτό τε καὶ ἡ περὶ αὐτὸ μῆνιγξ. Οἱ γὰρ πόροι
be pure it both and the about it membrane The for ducts
τῶν αἰσθητηρίων πάντων, ὥσπερ εἴρηται ἐν τοῖς περὶ
of-the sense-organs all just-as has-been-said in the about
αἰσθήσεως, τείνουσι πρὸς τὴν καρδίαν, τοῖς δὲ μὴ ἔχουσι
perception extend to the heart for-those but not having
καρδίαν πρὸς τὸ ἀνάλογον. Ὁ μὲν οὖν τῆς ἀκοῆς, ἐπεί
heart to the analogous The indeed then of-the hearing since
ἐστι τὸ αἰσθητήριον ἀέρος, ᾗ τὸ πνεῦμα τὸ σύμφυτον
is the sense-organ of-air in-which the breath the connate
ποιεῖται ἐνίοις μὲν τὴν σφύξιν τοῖς δὲ τὴν ἀναπνοὴν καὶ
makes in-some indeed the pulsation in-others and the respiration and
εἰσπνοήν, ταύτῃ περαίνει· διὸ καὶ ἡ μάθησις γίνεται
inhalation there it-terminates wherefore also the learning comes-about
τῶν λεγομένων ὥστ᾽ ἀντιφθέγγεσθαι τὸ ἀκουσθέν· οἷα
of-the said-things so-that to-utter-back the heard of-what-sort
γὰρ ἡ κίνησις εἰσῆλθε διὰ τοῦ αἰσθητηρίου, τοιαύτη
for the motion entered through the sense-organ such
πάλιν, οἷον ἀπὸ χαρακτῆρος τοῦ αὐτοῦ καὶ ἑνός, διὰ τῆς
again as-if from stamp the same and one through the
φωνῆς γίνεται ἡ κίνησις, ὥσθ᾽ ὃ ἤκουσε, τοῦτ᾽ εἰπεῖν.
voice comes-about the motion so-that what he-heard this to-say

Καὶ χασμώμενοι καὶ ἐκπνέοντες ἧττον ἀκούουσιν ἢ
And yawning and breathing-out less they-hear than
εἰσπνέοντες διὰ τὸ ἐπὶ τῷ πνευματικῷ μορίῳ τὴν
breathing-in because-of the at the breathing part the
ἀρχὴν τοῦ αἰσθητηρίου εἶναι τοῦ τῆς ἀκοῆς, καὶ σείεσθαι
principle of-the sense-organ to-be the of-the hearing and to-be-shaken
καὶ κινεῖσθαι ἅμα κινοῦντος τοῦ ὀργάνου τὸ πνεῦμα·
and to-be-moved together moving the instrument the breath
κινεῖται γὰρ κινοῦν τὸ ὄργανον. Καὶ ἐν ταῖς ὑγραῖς
it-is-moved for moving the instrument And in the moist
ὥραις καὶ κράσεσι συμβαίνει τὸ αὐτὸ πάθος, καὶ τὰ ὦτα
seasons and blends happens the same affection and the ears
πληροῦσθαι δοκεῖ πνεύματος διὰ τὸ γειτνιᾶν τῇ ἀρχῇ
to-be-filled seem with-breath because-of the to-neighbor the principle
τοῦ πνευματικοῦ τόπου. Ἡ μὲν οὖν περὶ τὰς διαφορὰς
of-the breathing place The indeed then about the differences
ἀκρίβεια τῆς κρίσεως καὶ τῶν ψόφων καὶ τῶν ὀσμῶν ἐν τῷ
exactness of-the judging both of-the sounds and of-the smells in the
τὸ αἰσθητήριον καθαρὸν εἶναι καὶ τὸν ὑμένα τὸν ἐπιπολῆς
the sense-organ pure to-be and the membrane the on-the-surface
ἐστίν· πᾶσαι γὰρ αἱ κινήσεις διάδηλοι, καθάπερ ἐπὶ
is all for the motions distinct just-as in-the-case-of
τῆς ὄψεως, καὶ ἐπὶ τῶν τοιούτων συμβαίνουσιν. Καὶ
the sight also in-the-case-of the such happen Also
τὸ πόρρωθεν δὲ αἰσθάνεσθαι, τὰ δὲ μὴ αἰσθάνεσθαι,
the from-afar and to-perceive the-others and not to-perceive
ὁμοίως συμβαίνει ὥσπερ ἐπὶ τῆς ὄψεως. Τὰ γὰρ
likewise happens just-as in-the-case-of the sight The for
ἔχοντα πρὸ τῶν αἰσθητηρίων ἐπὶ πολὺ οἷον ὀχετοὺς
having before the sense-organs for far such-as channels
διὰ τῶν μορίων, ταῦτα πόρρωθεν αἰσθητικά ἐστιν.
through the parts these from-afar perceptive are

Διὸ ὅσων οἱ μυκτῆρες μακροί, οἷον τῶν Λακωνικῶν
Wherefore of-as-many-as the nostrils long such-as of-the Laconian
κυνιδίων, ὀσφραντικά· ἄνω γὰρ ὄντος τοῦ αἰσθητηρίου
little-dogs keen-scented above for being the sense-organ
πόρρωθεν αἱ κινήσεις οὐ διασπῶνται ἀλλ' εὐθυποροῦσιν,
from-afar the motions not are-scattered but go-straight
ὥσπερ τοῖς ἐπηλυγιζομένοις πρὸ τῶν ὀμμάτων. Ὁμοίως
just-as for-those shading before the eyes Likewise
δὲ καὶ ὅσοις τὰ ὦτα μακρὰ καὶ ἀπογεγεισσωμένα
and also for-as-many-as the ears long and projecting-like-eaves
πόρρωθεν, οἷα ἔχουσιν ἔνια τῶν τετραπόδων, καὶ ἔσω
from-afar such-as have some of-the quadrupeds and inside
τὴν ἑλίκην μακράν· καὶ γὰρ ταῦτα ἐκ πολλοῦ λαμβάνοντα
the spiral long and for these from far taking
τὴν κίνησιν ἀποδίδωσι πρὸς τὸ αἰσθητήριον. Τὴν μὲν
the motion deliver to the sense-organ The indeed
οὖν πόρρωθεν ἀκρίβειαν τῶν αἰσθήσεων ἥκιστα ὡς εἰπεῖν
then from-afar exactness of-the senses least so to-say
ἄνθρωπος ἔχει ὡς κατὰ μέγεθος τῶν ζῴων, τὴν δὲ περὶ
human has as according-to size of-the animals the but about
τὰς διαφορὰς μάλιστα πάντων εὐαίσθητον. Αἴτιον δ' ὅτι
the differences most of-all keen-sensed Cause and that
τὸ αἰσθητήριον καθαρὸν καὶ ἥκιστα γεῶδες καὶ σωματῶδες,
the sense-organ pure and least earthy and corporeal
καὶ φύσει λεπτοδερμότατον τῶν ζῴων ὡς κατὰ μέγεθος
and by-nature thinnest-skinned of-the animals as according-to size
ἄνθρωπός ἐστιν. Εὐλόγως δ' ἀπείργασται ἡ φύσις καὶ
human is Reasonably and has-worked-out the nature also
τὰ περὶ τὴν φώκην· τετράπουν γὰρ ὂν καὶ ζῳοτόκον
the about the seal quadruped for being and live-bearing
οὐκ ἔχει ὦτα ἀλλὰ πόρους μόνον. Αἴτιον δ' ὅτι ἐν ὑγρῷ
not has ears but ducts only Cause and that in moist

αὐτῇ ὁ βίος· τὸ δὲ τῶν ὤτων μόριον πρόσκειται τοῖς
for-it the life the but of-the ears part is-attached to-the
πόροις πρὸς τὸ σώζειν τὴν τοῦ πόρρωθεν ἀέρος κίνησιν·
ducts for the to-preserve the of-the from-afar air motion
οὐθὲν οὖν χρήσιμόν ἐστιν αὐτῇ, ἀλλὰ καὶ τοὐναντίον
nothing then useful is for-it but also the-opposite
ἀπεργάζοιτ᾽ ἄν, δεχόμενα εἰς αὑτὰ ὑγροῦ πλῆθος. Καὶ
would-work — receiving into themselves of-moist quantity And
περὶ μὲν ὄψεως καὶ ἀκοῆς καὶ ὀσφρήσεως εἴρηται.
about indeed sight and hearing and smell it-has-been-said

III · HAIR

Hair differs in hardness, length, curl, quantity, and color, by kind and age. Thick, loose skin gives thick hair, abundant or oily moisture long hair; curly hair is dry and contracted, as among Ethiopians, straight hair moist, as among Scythians and Thracians. Cold hardens hair and skin, as deep-sea urchins grow hard spines. Baldness, like leaf-fall or molting, is a lack of hot moisture: no one goes bald before intercourse, which chills the brain, and only men, in front, over the brain; women, children, and eunuchs do not, and the bald never regrow, since a man changes with his ages, not with the seasons.

Τὰ δὲ τριχώματα διαφέρουσι καὶ πρὸς αὑτὰ τοῖς
The and hair-coats differ both toward themselves for-the
ἀνθρώποις κατὰ τὰς ἡλικίας καὶ πρὸς τὰ γένη τῶν
humans according-to the ages and toward the kinds of-the
ἄλλων ζῴων, ὅσαπερ ἔχει τρίχας αὐτῶν. Ἔχει δ᾽ ὅσαπερ
other animals as-many-as have hairs of-them Have and as-many-as
ἐντὸς αὑτῶν ζῳοτοκεῖ πάντα σχεδόν· καὶ γὰρ τὰ ἀκανθώδεις
inside themselves bear-live all nearly and for the spiny
ἔχοντα τῶν τοιούτων τριχῶν εἶδός τι ὑποληπτέον, οἷον
having of-the such hairs form some one-must-suppose such-as

τάς τε τῶν χερσαίων ἐχίνων καὶ εἴ τι ἄλλο τοιοῦτόν
the both of-the land hedgehogs and if any other such
ἐστι τῶν ζῳοτόκων. Εἰσὶ δὲ διαφοραὶ τῶν τριχῶν κατά
is of-the live-bearing Are and differences of-the hairs according-to
τε σκληρότητα καὶ μαλακότητα, καὶ κατὰ μῆκος καὶ
both hardness and softness and according-to length and
βραχύτητα, καὶ εὐθύτητα καὶ οὐλότητα, καὶ πλῆθος καὶ
shortness and straightness and curliness and quantity and
ὀλιγότητα, πρὸς δὲ τούτοις κατὰ τὰς χρόας, κατὰ
fewness besides and these according-to the colors according-to
λευκότητα καὶ μελανίαν καὶ τὰς μεταξὺ τούτων. Ἐνίας δὲ
whiteness and blackness and the between these Some and
τούτων τῶν διαφορῶν καὶ κατὰ τὰς ἡλικίας διαφέρουσι
of-these the differences also according-to the ages they-differ
νέα τε καὶ παλαιούμενα. Μάλιστα δὲ τοῦτ' ἐπίδηλον
young both and growing-old Most and this evident
ἐπὶ τῶν ἀνθρώπων· καὶ γὰρ δασύνεται μᾶλλον
in-the-case-of the humans and for they-grow-hairy more
πρεσβύτερα γιγνόμενα, καὶ φαλακροῦνται τῆς κεφαλῆς ἔνιοι
older becoming and grow-bald of-the head some
τὰ πρόσθεν. Καὶ παῖδες μὲν ὄντες οὐ γίγνονται φαλακροί,
the front And children indeed being not become bald
οὐδ' αἱ γυναῖκες· οἱ δ' ἄνδρες προϊούσης ἤδη τῆς ἡλικίας.
nor the women the but men advancing already the age
Καὶ πολιοῦνται δὲ τὰς κεφαλὰς γηράσκοντες οἱ ἄνθρωποι.
Also grow-gray and the heads aging the humans
Τῶν δ' ἄλλων ζῴων οὐθενὶ τοῦθ' ὡς εἰπεῖν γίνεται ἐπίδηλον,
Of-the and other animals to-none this so to-say comes-about evident
μάλιστα δ' ἵππῳ τῶν ἄλλων. Καὶ φαλακροῦνται μὲν οἱ
most but to-horse of-the others And grow-bald indeed the
ἄνθρωποι τὰ ἔμπροσθεν τῆς κεφαλῆς, πολιοὶ δὲ πρῶτον
humans the front of-the head gray and first

γίνονται τοὺς κροτάφους· φαλακροῦται δ' οὐθεὶς οὔτε τούτους
become the temples grows-bald but no-one either these
οὔτε τὰ ὄπισθεν τῆς κεφαλῆς. Ὅσα δὲ τῶν ζῴων μὴ ἔχει
or the back of-the head As-many-as and of-the animals not have
τρίχας ἀλλὰ τὸ ἀνάλογον αὐταῖς, οἷον ὄρνιθες μὲν πτερά,
hairs but the analogous to-them such-as birds indeed feathers
τὸ δὲ τῶν ἰχθύων γένος λεπίδας, καὶ τούτοις συμβαίνει τῶν
the but of-the fish kind scales also to-these happen of-the
τοιούτων παθημάτων ἔνια κατὰ τὸν αὐτὸν λόγον. Τίνος
such affections some according-to the same ratio Of-what
μὲν οὖν ἕνεκα τὸ τῶν τριχῶν ἡ φύσις ἐποίησε γένος
indeed then for-the-sake the of-the hairs the nature made kind
τοῖς ζῴοις, εἴρηται πρότερον ἐν ταῖς αἰτίαις ταῖς περὶ
for-the animals it-has-been-said before in the causes the about
τὰ μέρη τῶν ζῴων· τίνων δ' ὑπαρχόντων καὶ διὰ τίνας
the parts of-the animals what and being-present and because-of what
ἀνάγκας συμβαίνει τούτων ἕκαστον, δηλῶσαι τῆς μεθόδου
necessities happens of-these each to-show of-the inquiry
τῆς νῦν ἐστίν. Παχύτητος μὲν οὖν καὶ λεπτότητος αἴτιον
the present is Of-thickness indeed then and thinness cause
μάλιστα τὸ δέρμα· τοῖς μὲν γὰρ παχὺ τοῖς δὲ
most the skin for-the-ones indeed for thick for-the-others and
λεπτόν, καὶ τοῖς μὲν μανὸν τοῖς δὲ πυκνόν ἐστιν.
thin and for-the-ones indeed loose for-the-others and dense it-is
Ἔτι δὲ συναίτιον καὶ τῆς ἐνούσης ὑγρότητος ἡ διαφορά·
Further and joint-cause also of-the present-in moisture the difference
τοῖς μὲν γὰρ ὑπάρχει λιπαρὰ τοῖς δ' ὑδατώδης.
for-the-ones indeed for belongs oily for-the-others and watery
Ὅλως μὲν γὰρ ἡ τοῦ δέρματος φύσις ὑπόκειται γεώδης
Generally indeed for the of-the skin nature is-constituted earthy
ἐπιπολῆς γὰρ οὖσα ἐξατμίζοντος τοῦ ὑγροῦ στερεὰ γίνεται
on-the-surface for being evaporating the moist solid it-becomes

καὶ γεώδης, αἱ δὲ τρίχες καὶ τὸ ἀνάλογον αὐταῖς οὐκ ἐκ
and earthy the and hairs and the analogous to-them not from
τῆς σαρκὸς γίνονται ἀλλ᾽ ἐκ τοῦ δέρματος, ἐξατμίζοντος καὶ
the flesh come-to-be but from the skin evaporating and
ἀναθυμιωμένου ἐν αὐτοῖς τοῦ ὑγροῦ. Διὸ παχεῖαι μὲν ἐκ
exhaling in them the moist Wherefore thick indeed from
τοῦ παχέος, λεπταὶ δὲ ἐκ τοῦ λεπτοῦ δέρματος γίνονται.
the thick thin and from the thin skin they-become
Ἂν μὲν οὖν ᾖ τὸ δέρμα μανότερον καὶ παχύτερον, παχεῖαι
If indeed then be the skin looser and thicker thick
διά τε τὸ πλῆθος τοῦ γεώδους καὶ διὰ τὸ μέγεθος
because-of both the quantity of-the earthy and because-of the size
τῶν πόρων εἰσίν· ἂν δὲ πυκνότερον, λεπταὶ διὰ τὴν
of-the passages they-are if but denser thin because-of the
στενότητα τῶν πόρων. Ἔτι δ᾽ ἂν ᾖ ἡ ἰκμὰς ὑδατώδης,
narrowness of-the passages Further and if be the moisture watery
ταχὺ ἀναξηραινομένης οὐ λαμβάνουσι μέγεθος αἱ τρίχες,
quickly drying-up not take size the hairs
ἂν δὲ λιπαρά, τοὐναντίον· οὐ γὰρ εὐξήραντον τὸ λιπαρόν.
if but oily the-opposite not for easily-dried the oily
Διόπερ ὅλως μὲν τὰ παχυδερμότερα παχυτριχώτερα τῶν
Wherefore generally indeed the thicker-skinned thicker-haired of-the
ζῴων, οὐ μέντοι τὰ μάλιστα μᾶλλον, διὰ τὰς εἰρημένας
animals not however the most more because-of the said
αἰτίας, οἷον τὸ τῶν ὑῶν γένος πρὸς τὸ τῶν βοῶν
causes as the of-the pigs kind compared-with the of-the oxen
πέπονθε καὶ πρὸς ἐλέφαντα καὶ πολλὰ τῶν ἄλλων.
has-it and compared-with elephant and many of-the others
Διὰ τὴν αὐτὴν δ᾽ αἰτίαν καὶ αἱ ἐν τῇ κεφαλῇ τρίχες τοῖς
Because-of the same and cause also the in the head hairs for-the
ἀνθρώποις παχύταται· τοῦ γὰρ δέρματος τοῦτο παχύτατον
humans thickest of-the for skin this thickest

καὶ ἐν πλείστῃ ὑγρότητι, ἔτι δ' ἔχει μανότητα πολλήν.
and in most moisture further and it-has looseness much
Αἴτιον δὲ καὶ τοῦ μακρὰς ἢ βραχείας τὰς τρίχας εἶναι
Cause and also of-the long or short the hairs to-be
τὸ μὴ εὐξήραντον εἶναι τὸ ἐξατμίζον ὑγρόν. Τοῦ δὲ μὴ
the not easily-dried to-be the evaporating moist Of-the and not
εὐξήραντον εἶναι δύ' αἰτίαι, τό τε ποσὸν καὶ τὸ ποιόν· ἄν
easily-dried to-be two causes the both quantity and the quality if
τε γὰρ πολὺ ᾖ τὸ ὑγρόν, οὐκ εὐξήραντον, καὶ ἂν λιπαρόν.
both for much be the moist not easily-dried and if oily
Καὶ διὰ τοῦτο τοῖς ἀνθρώποις αἱ ἐκ τῆς κεφαλῆς
And because-of this for-the humans the from the head
τρίχες μακρόταται· ὁ γὰρ ἐγκέφαλος ὑγρὸς καὶ ψυχρὸς
hairs longest the for brain moist and cold
ὢν πολλὴν παρέχει δαψίλειαν τοῦ ὑγροῦ εὐθύτριχα δὲ καὶ
being much provides abundance of-the moist straight-haired and and
οὐλότριχα γίνεται διὰ τὴν ἐν ταῖς θριξὶν ἀναθυμίασιν.
curly-haired become because-of the in the hairs exhalation
Ἂν μὲν γὰρ ᾖ καπνώδης, θερμὴ οὖσα καὶ ξηρὰ οὖλην τὴν
If indeed for be smoky hot being and dry curly the
τρίχα ποιεῖ. Κάμπτεται γὰρ διὰ τὸ δύο φέρεσθαι φοράς·
hair it-makes It-is-bent for because-of the two to-be-carried motions
τὸ μὲν γὰρ γεῶδες κάτω, τὸ δὲ θερμὸν ἄνω φέρεται.
the indeed for earthy downward the but hot upward is-carried
Εὐκάμπτου δ' ὄντος δι' ἀσθένειαν στρέφεται· τοῦτο δ'
Easily-bent and being because-of weakness it-twists this and
ἐστὶν οὐλότης τριχός. Ἐνδέχεται μὲν οὖν οὕτω λαβεῖν τὴν
is curliness of-hair It-is-possible indeed then so to-take the
αἰτίαν, ἐνδέχεται δὲ καὶ διὰ τὸ ὀλίγον ἔχειν τὸ ὑγρόν,
cause it-is-possible and also because-of the little to-have the moist
πολὺ δὲ τὸ γεῶδες, ὑπὸ τοῦ περιέχοντος ξηραινομένας
much but the earthy by the surrounding being-dried

συσπᾶσθαι. Κάμπτεται γὰρ τὸ εὐθύ, ἐὰν ἐξατμίζηται,
to-be-drawn-together Is-bent for the straight if it-evaporate
καὶ συντρέχει ὥσπερ ἐπὶ τοῦ πυρὸς καομένη ἡ θρίξ,
and runs-together just-as on the fire being-burnt the hair
ὡς οὔσης τῆς οὐλότητος συσπάσεως δι᾽ ἔνδειαν ὑγροῦ
as being the curliness a-contraction because-of lack of-moist
ὑπὸ τῆς τοῦ περιέχοντος θερμότητος. Σημεῖον δ᾽ ὅτι καὶ
by the of-the surrounding heat Sign and that also
σκληρότεραι αἱ οὖλαι τρίχες τῶν εὐθειῶν εἰσίν· τὸ γὰρ
harder the curly hairs than-the straight are the for
ξηρὸν σκληρόν. Εὐθύτριχα δὲ ὅσα ὑγρότητ᾽ ἔχει πολλήν·
dry hard Straight-haired and as-many-as moisture have much
ῥέον γὰρ ἀλλ᾽ οὐ στάζον προέρχεται ἐν ταύταις τὸ ὑγρόν.
flowing for but not dripping goes-forward in these the moist
Καὶ διὰ τοῦτο οἱ μὲν ἐν τῷ Πόντῳ Σκύθαι καὶ Θρᾷκες
And because-of this the indeed in the Pontus Scythians and Thracians
εὐθύτριχες· καὶ γὰρ αὐτοὶ ὑγροὶ καὶ ὁ περιέχων αὐτοὺς
straight-haired and for themselves moist and the surrounding them
ἀὴρ ὑγρός· Αἰθίοπες δὲ καὶ οἱ ἐν τοῖς θερμοῖς οὐλότριχες·
air moist Ethiopians but and those in the hot curly-haired
ξηροὶ γὰρ οἱ ἐγκέφαλοι καὶ ὁ ἀὴρ ὁ περιέχων.
dry for the brains and the air the surrounding
Ἔστι δ᾽ ἔνια τῶν παχυδέρμων λεπτότριχα διὰ τὴν
There-are and some of-the thick-skinned thin-haired because-of the
εἰρημένην αἰτίαν πρότερον· ὅσῳ γὰρ ἂν λεπτότεροι
said cause before by-as-much-as for — thinner
οἱ πόροι ὦσιν, τοσούτῳ λεπτοτέρας ἀναγκαῖον γίνεσθαι
the passages be by-so-much thinner necessary to-become
τὰς τρίχας. Διὸ τὸ τῶν προβάτων γένος τοιαύτας ἔχει
the hairs Wherefore the of-the sheep kind such has
τὰς τρίχας· τὸ γὰρ ἔριον τριχῶν πλῆθός ἐστιν. Ἔστι δ᾽
the hairs the for wool of-hairs multitude is There-are and

ἔνια τῶν ζῴων ἁ μαλακὴν μὲν ἔχει τὴν τρίχα, ἧττον
some of-the animals which soft indeed have the hair less
δὲ λεπτήν, οἷον τὸ τῶν δασυπόδων πρὸς τὸ τῶν
but thin such-as the of-the hares compared-with the of-the
προβάτων πέπονθεν. Τῶν γὰρ τοιούτων ἐπιπολῆς ἡ θρὶξ
sheep has-it Of-the for such on-the-surface the hair
τοῦ δέρματος. Διὸ μῆκος οὐκ ἴσχει, ἀλλὰ συμβαίνει
of-the skin Wherefore length not it-has but it-happens
παραπλήσιον ὥσπερ τὰ ἀπὸ λίνων ξυόμενα· καὶ γὰρ
similar just-as the from linen scraped and for
ταῦτα μῆκος μὲν οὐθὲν ἴσχει, μαλακὰ δ' ἐστὶ καὶ οὐ
these length indeed none have soft but are and not
δέχεται πλοκήν. Τὰ δ' ἐν τοῖς ψυχροῖς πρόβατα τοὐναντίον
admit plaiting The but in the cold sheep the-opposite
πέπονθε τοῖς ἀνθρώποις· οἱ μὲν γὰρ Σκύθαι μαλακότριχες,
have-it to-the humans the indeed for Scythians soft-haired
τὰ δὲ πρόβατα τὰ Σαυροματικὰ σκληρότριχα. Τούτου
the but sheep the Sauromatian hard-haired Of-this
δ' αἴτιον ταὐτὸ καὶ ἐπὶ τῶν ἀγρίων πάντων. Ἡ
and cause the-same also in-the-case-of the wild all The
γὰρ ψυχρότης σκληρύνει διὰ τὸ ξηραίνειν πηγνύουσα·
for coldness hardens because-of the to-dry solidifying
ἐκθλιβομένου γὰρ τοῦ θερμοῦ συνεξατμίζει τὸ ὑγρόν, καὶ
being-squeezed-out for the hot evaporates-with the moist and
γίνονται καὶ αἱ τρίχες καὶ τὸ δέρμα γεῶδες καὶ σκληρόν.
become both the hairs and the skin earthy and hard
Αἴτιον δὲ τοῖς μὲν ἀγρίοις ἡ θυραυλία, τοῖς δ' ὁ
Cause and for-the indeed wild the living-outdoors for-the-others and the
τόπος τοιοῦτος ὤν. Σημεῖον δὲ καὶ τὸ ἐπὶ τῶν ποντίων
place such being Sign and also the in-the-case-of the sea
ἐχίνων συμβαῖνον, οἷς χρῶνται πρὸς τὰς στραγγουρίας.
urchins happening which they-use for the stranguries

Καὶ γὰρ οὗτοι διὰ τὸ ἐν ψυχρᾷ εἶναι τῇ θαλάττῃ διὰ
And for these because-of the in cold to-be the sea because-of
τὸ βάθος (καθ' ἑξήκοντα γὰρ καὶ ἔτι πλειόνων γίγνονται
the depth at sixty for and still more they-come-to-be
ὀργυιῶν), αὐτοὶ μὲν μικροί, τὰς δὲ ἀκάνθας μεγάλας
fathoms themselves indeed small the but spines large
ἔχουσι καὶ σκληράς, μεγάλας μὲν διὰ τὸ ἐνταῦθα τὴν
have and hard large indeed because-of the there the
τοῦ σώματος τετράφθαι αὔξησιν (ὀλιγόθερμοι γὰρ ὄντες
of-the body to-have-been-turned growth of-little-heat for being
καὶ οὐ πέττοντες τὴν τροφὴν πολὺ περίττωμα ἔχουσιν,
and not concocting the nourishment much residue they-have
αἱ δ' ἄκανθαι καὶ αἱ τρίχες καὶ τὰ τοιαῦτα γίνονται
the and spines and the hairs and the such come-to-be
ἐκ περιττώματος), σκληρὰς δὲ καὶ λελιθωμένας διὰ
from residue hard and and petrified because-of
τὴν ψυχρότητα καὶ τὸν πάγον. Τὸν αὐτὸν δὲ τρόπον
the coldness and the frost The same and way
καὶ τἆλλα τὰ φυόμενα σκληρότερα συμβαίνει γίνεσθαι
also the-other the growing harder happen to-become
καὶ γεωδέστερα καὶ λιθωδέστερα τὰ ἐν τοῖς πρὸς βορρᾶν
and more-earthy and stonier the in the toward north
τῶν πρὸς νότον καὶ τὰ προσήνεμα τῶν ἐν κοίλοις·
than-the toward south and the exposed-to-the-wind than-the in hollows
ψύχεται γὰρ πάντα μᾶλλον, καὶ ἐξατμίζει τὸ ὑγρόν.
they-are-chilled for all more and evaporates the moist
Σκληρύνει μὲν οὖν καὶ τὸ θερμὸν καὶ τὸ ψυχρόν·
Hardens indeed then both the hot and the cold
ἐξατμίζεσθαι γὰρ ὑπ' ἀμφοτέρων συμβαίνει τὸ ὑγρόν, ὑπὸ
to-be-evaporated for by both happens the moist by
μὲν τοῦ θερμοῦ καθ' αὑτό, ὑπὸ δὲ τοῦ ψυχροῦ κατὰ
indeed the hot by itself by but the cold by

συμβεβηκός (μετὰ τοῦ θερμοῦ γὰρ συνεξέρχεται· οὐθὲν
accident with the hot for it-goes-out-with no
γὰρ ὑγρὸν ἄνευ θερμοῦ). Ἀλλὰ τὸ μὲν ψυχρὸν οὐ μόνον
for moist without hot But the indeed cold not only
σκληρύνει ἀλλὰ καὶ πυκνοῖ, τὸ δὲ θερμὸν μανότερον ποιεῖ
hardens but also condenses the but hot looser makes
διὰ τὴν αὐτὴν δ' αἰτίαν καὶ πρεσβυτέρων γιγνομένων
because-of the same and cause also older becoming
τοῖς μὲν τρίχας ἔχουσι σκληρότεραι γίγνονται αἱ
for-the-ones indeed hairs having harder become the
τρίχες, τοῖς δὲ πτερωτοῖς καὶ λεπιδωτοῖς τὰ πτερὰ καὶ
hairs for-the but feathered and scaled the feathers and
αἱ λεπίδες. Τὰ γὰρ δέρματα γίνεται σκληρότερα καὶ
the scales The for skins become harder and
παχύτερα πρεσβυτέρων γιγνομένων· ξηραίνεται γάρ, καὶ τὸ
thicker older becoming it-is-dried for and the
γῆράς ἐστι κατὰ τοὔνομα γεηρὸν διὰ τὸ ἀπολείπειν
old-age is according-to the-name earthy because-of the to-fail
τὸ θερμὸν καὶ μετ' αὐτοῦ τὸ ὑγρόν. Φαλακροῦνται δ'
the hot and with it the moist Grow-bald and
ἐπιδήλως οἱ ἄνθρωποι μάλιστα τῶν ζῴων. Ἔστι δέ τι
evidently the humans most of-the animals Is and some
καθόλου τὸ τοιοῦτον πάθος· καὶ γὰρ τῶν φυτῶν τὰ
universal the such affection and for of-the plants the-ones
μὲν ἀείφυλλα τὰ δὲ φυλλοβολεῖ, καὶ τῶν ὀρνίθων
indeed evergreen the-others and shed-leaves and of-the birds
οἱ φωλεύοντες ἀποβάλλουσι τὰ πτερά.
the hibernating cast-off the feathers
Τοιοῦτον δέ τι πάθος καὶ ἡ φαλακρότης ἐστὶν ἐπὶ
Such and some affection also the baldness is in-the-case-of
τῶν ἀνθρώπων, ὅσοις συμβαίνει φαλακροῦσθαι· κατὰ
the humans to-as-many-as it-happens to-grow-bald by

μέρος μὲν γὰρ ἀπορρεῖ καὶ τὰ φύλλα τοῖς φυτοῖς πᾶσι
part indeed for fall-off both the leaves for-the plants all
καὶ τὰ πτερὰ καὶ αἱ τρίχες τοῖς ἔχουσιν, ὅταν δ' ἀθρόον
and the feathers and the hairs for-the having when but all-at-once
γένηται τὸ πάθος, λαμβάνει τὰς εἰρημένας ἐπωνυμίας·
come-about the affection it-takes the said names
φαλακροῦσθαί τε γὰρ λέγεται καὶ φυλλορρεῖν. Αἴτιον δὲ
to-grow-bald both for is-said and to-shed-leaves Cause and
τοῦ πάθους ἔνδεια ὑγρότητος θερμῆς, τοιοῦτον δὲ μάλιστα
of-the affection lack of-moisture hot such and most
τῶν ὑγρῶν τὸ λιπαρόν· διὸ καὶ τῶν φυτῶν τὰ λιπαρὰ
of-the moist-things the oily wherefore also of-the plants the oily
ἀείφυλλα μᾶλλον. Ἀλλὰ περὶ μὲν τούτων ἐν ἄλλοις
evergreen more But about indeed these in other-works
τὸ αἴτιον λεκτέον· καὶ γὰρ ἄλλα συναίτια τοῦ τοιούτου
the cause must-be-said and for other joint-causes of-the such
πάθους αὐτοῖς. Γίνεται δὲ τοῖς μὲν φυτοῖς ἐν τῷ
affection to-them Comes-about and for-the indeed plants in the
χειμῶνι τὸ πάθος (αὕτη γὰρ ἡ μεταβολὴ κυριωτέρα τῆς
winter the affection this for the change more-sovereign than-the
ἡλικίας), καὶ τοῖς φωλεύουσι δὲ τῶν ζώων (καὶ γὰρ ταῦτα
age and for-the hibernating and of-the animals and for these
ἧττον τῶν ἀνθρώπων ὑγρὰ καὶ θερμὰ τὴν φύσιν ἐστίν)·
less than-the humans moist and hot in-the nature are
οἱ δ' ἄνθρωποι ταῖς ἡλικίαις χειμῶνα καὶ θέρος ἄγουσιν.
the but humans by-the ages winter and summer pass
Διὸ πρὶν ἀφροδισιάζειν οὐ γίνεται φαλακρὸς οὐδείς· τότε
Wherefore before to-have-intercourse not becomes bald anyone then
δὲ τοῖς τοιούτοις τὴν φύσιν μᾶλλον. Φύσει γάρ ἐστιν ὁ
but to-the such in-the nature more By-nature for is the
ἐγκέφαλος ψυχρότατον τοῦ σώματος, ὁ δ' ἀφροδισιασμὸς
brain coldest of-the body the but intercourse

καταψύχει· καθαρᾶς γὰρ καὶ φυσικῆς θερμότητος ἀπόκρισίς
chills of-pure for and natural heat secretion
ἐστιν. Εὐλόγως οὖν ὁ ἐγκέφαλος αἰσθάνεται πρῶτον·
it-is Reasonably then the brain perceives first
τὰ γὰρ ἀσθενῆ καὶ φαύλως ἔχοντα μικρᾶς αἰτίας καὶ
the for weak and poorly being of-small cause and
ῥοπῆς ἐστίν. Ὥστ' ἄν τις ἀναλογίσηται ὅτι αὐτός τε
inclination are So-that if someone should-reckon that itself both
ὀλιγόθερμος ὁ ἐγκέφαλος, ἔτι δ' ἀναγκαῖον τὸ πέριξ
of-little-heat the brain further and necessary the around
δέρμα τοιοῦτον εἶναι μᾶλλον, καὶ τούτου τὴν τῶν τριχῶν
skin such to-be more and of-this the of-the hairs
φύσιν, ὅσῳ πλεῖστον ἀφέστηκεν, εὐλόγως ἂν δόξειε
nature by-as-much-as most it-stands-away reasonably — it-would-seem
τοῖς σπερματικοῖς περὶ ταύτην τὴν ἡλικίαν συμβαίνειν
to-the seminal about this the age to-happen
φαλακροῦσθαι. Διὰ τὴν αὐτὴν δ' αἰτίαν καὶ τῆς
to-grow-bald Because-of the same and cause also of-the
κεφαλῆς τὸ πρόσθιον μόνον γίνονται φαλακροὶ καὶ τῶν
head the front only become bald and of-the
ζῴων οἱ ἄνθρωποι μόνοι, τὸ μὲν πρόσθιον, ὅτι ἐνταῦθα
animals the humans alone the indeed front because there
ὁ ἐγκέφαλος, τῶν δὲ ζῴων μόνον, ὅτι πολὺ πλεῖστον
the brain of-the but animals alone because much most
ἔχει ἐγκέφαλον καὶ μάλιστα ὑγρὸν ἄνθρωπος. Καὶ αἱ
has brain and most moist human And the
γυναῖκες οὐ φαλακροῦνται· παραπλησία γὰρ ἡ φύσις τῇ
women not grow-bald similar for the nature to-the
τῶν παιδίων· ἄγονα γὰρ σπερματικῆς ἐκκρίσεως ἀμφότερα.
of-the children barren for of-seminal secretion both

Καὶ εὐνοῦχος οὐ γίνεται φαλακρὸς διὰ τὸ εἰς τὸ θῆλυ
And eunuch not becomes bald because-of the into the female
μεταβάλλειν. Καὶ τὰς ὑστερογενεῖς τρίχας ἢ οὐ φύουσιν
to-change And the later-born hairs either not they-grow
ἢ ἀποβάλλουσιν, ἂν τύχωσιν ἔχοντες, οἱ εὐνοῦχοι, πλὴν τῆς
or they-cast-off if they-happen having the eunuchs except the
ἤβης· καὶ γὰρ αἱ γυναῖκες τὰς μὲν οὐκ ἔχουσι, τὰς δ'
pubes and for the women the-ones indeed not have the-others but
ἐπὶ τῇ ἤβῃ φύουσιν. Ἡ δὲ πήρωσις αὕτη ἐκ τοῦ ἄρρενος
on the pubes grow The and maiming this from the male
εἰς τὸ θῆλυ μεταβολή ἐστιν. Τοῦ δὲ τὰ μὲν φωλεύοντα
into the female change is Of-the and the-ones indeed hibernating
πάλιν δασύνεσθαι καὶ τὰ φυλλοβολήσαντα πάλιν φύειν
again to-grow-hairy and the having-shed-leaves again to-grow
φύλλα, τοῖς δὲ φαλακροῖς μὴ ἀναφύεσθαι πάλιν, αἴτιον ὅτι
leaves for-the but bald not to-grow-back again cause that
τοῖς μὲν αἱ ὧραι τροπαί εἰσι τοῦ σώματος μᾶλλον, ὥστ'
for-the-ones indeed the seasons turnings are of-the body more so-that
ἐπεὶ μεταβάλλουσιν αὗται, μεταβάλλει καὶ τὸ φύειν καὶ τὸ
since change these changes also the to-grow and the
ἀποβάλλειν τοὺς μὲν τὰ πτερὰ καὶ τὰς τρίχας, τὰ δὲ
to-cast-off the-ones indeed the feathers and the hairs the-others and
φύλλα τὰ φυτά. Τοῖς δ' ἀνθρώποις κατὰ τὴν ἡλικίαν
leaves the plants For-the but humans according-to the age
γίνεται χειμὼν καὶ θέρος καὶ ἔαρ καὶ μετόπωρον, ὥστ'
comes-about winter and summer and spring and autumn so-that
ἐπεὶ αἱ ἡλικίαι οὐ μεταβάλλουσιν, οὐδὲ τὰ πάθη τὰ διὰ
since the ages not change nor the affections the because-of
ταύτας μεταβάλλει, καίπερ τῆς αἰτίας ὁμοίας οὔσης. Καὶ
these change although the cause like being And
περὶ μὲν τἆλλα πάθη τὰ τῶν τριχῶν σχεδὸν εἴρηται.
about indeed the-other affections the of-the hairs nearly it-has-been-said

In other animals the skin's nature causes the hair's colors; in man it causes none but the white hair of disease, leprosy, not the gray of age. Grayness of age is weakness and lack of heat: the nourishment the hair cannot concoct putrefies, like the mold, which is the putrefaction of earthy vapor, so the comic poets rightly call gray hairs the mold and hoarfrost of age. People gray in sickness and darken again on recovery; disease is acquired old age and old age a natural disease. The temples gray first, lying between the dry back of the head and the moist crown.

Τῶν δὲ χρωμάτων αἴτιον τοῖς μὲν ἄλλοις ζῴοις, καὶ τοῦ
Of-the and colors cause for-the indeed other animals both of-the
μονόχροα εἶναι καὶ τοῦ ποικίλα, ἡ τοῦ δέρματος φύσις·
one-colored to-be and of-the variegated the of-the skin nature
τοῖς δ' ἀνθρώποις οὐδὲν πλὴν τῶν πολιῶν, οὐ τῶν διὰ
for-the but humans nothing except of-the gray not of-the because-of
γῆρας ἀλλὰ τῶν διὰ νόσον· ἐν γὰρ τῇ καλουμένῃ λεύκῃ
old-age but of-the because-of disease in for the so-called leprosy
λευκαὶ γίνονται αἱ τρίχες. Ἐὰν δ' αἱ τρίχες ὦσι λευκαί,
white become the hairs If but the hairs be white
οὐκ ἀκολουθεῖ τῷ δέρματι ἡ λευκότης. Αἴτιον δ' ὅτι αἱ
not follows the skin the whiteness Cause and that the
τρίχες ἐκ τοῦ δέρματος φύονται· ἐκ νενοσηκότος οὖν
hairs from the skin grow from diseased then
καὶ λευκοῦ τοῦ δέρματος καὶ ἡ θρὶξ συννοσεῖ, νόσος δὲ
and white the skin also the hair is-diseased-with disease and
τριχὸς πολιότης ἐστίν, ἡ δὲ δι' ἡλικίαν τῶν τριχῶν
of-hair grayness is the but because-of age of-the hairs
πολιότης γίνεται δι' ἀσθένειαν καὶ ἔνδειαν θερμότητος.
grayness comes-about because-of weakness and lack of-heat
Καὶ γὰρ ἡλικία πᾶσα ῥέπει ἀποκλίνοντος τοῦ σώματος,
And for age all inclines declining the body

καὶ ἐν τῷ γήρᾳ, ἐπὶ ψύξιν· τὸ γὰρ γῆρας ψυχρὸν καὶ
and in the old-age toward chilling the for old-age cold and
ξηρόν ἐστιν. Δεῖ δὲ νοῆσαι τὴν εἰς ἕκαστον μόριον
dry is One-must and to-understand the to each part
ἀφικνουμένην τροφὴν ὅτι πέττει μὲν ἡ οἰκεία θερμότης,
arriving nourishment that concocts indeed the own heat
ἀδυνατούσης δὲ φθείρεται καὶ πήρωσις γίνεται ἢ νόσος.
being-incapable but it-is-destroyed and maiming comes-about or disease
Ἀκριβέστερον δὲ περὶ τῆς τοιαύτης αἰτίας ὕστερον λεκτέον
More-exactly and about the such cause later must-be-said
ἐν τοῖς περὶ αὐξήσεως καὶ τροφῆς. Ὅσοις οὖν τῶν
in the about growth and nourishment For-as-many-as then of-the
ἀνθρώπων ὀλιγόθερμός ἐστιν ἡ τῶν τριχῶν φύσις καὶ
humans of-little-heat is the of-the hairs nature and
πλείων ἡ εἰσιοῦσα ὑγρότης ἐστί, τῆς οἰκείας θερμότητος
more the entering moisture is the own heat
ἀδυνατούσης πέττειν σήπεται ὑπὸ τῆς ἐν τῷ περιέχοντι
being-incapable to-concoct it-putrefies by the in the surrounding
θερμότητος. Γίνεται δὲ σῆψις ὑπὸ θερμότητος μὲν πᾶσα,
heat Comes-about and putrefaction by heat indeed all
οὐ τῆς συμφύτου δέ, ὥσπερ εἴρηται ἐν ἑτέροις. Ἔστι
not the connate but just-as has-been-said in other-works Is
δ' ἡ σῆψις καὶ ὕδατος καὶ γῆς καὶ τῶν σωματικῶν
and the putrefaction both of-water and of-earth and of-the bodily
πάντων τῶν τοιούτων, διὸ καὶ τῆς γεώδους ἀτμίδος,
all the such wherefore also of-the earthy vapor
οἷον ὁ λεγόμενος εὐρώς· καὶ γὰρ ὁ εὐρώς ἐστι σαπρότης
such-as the so-called mold and for the mold is rottenness
γεώδους ἀτμίδος. Ὥστε καὶ ἡ ἐν ταῖς θριξὶ τοιαύτη οὖσα
of-earthy vapor So-that also the in the hairs such being
τροφὴ οὐ πεττομένη σήπεται, καὶ γίνεται ἡ καλουμένη
nourishment not being-concocted putrefies and becomes the so-called

πολιά. Λευκὴ δέ, ὅτι καὶ ὁ εὐρὼς μόνον τῶν σαπρῶν ὡς
grayness White and because also the mold alone of-the rotten so
εἰπεῖν λευκόν ἐστιν. Αἴτιον δὲ τούτου ὅτι πολὺν ἔχει ἀέρα·
to-say white is Cause and of-this that much it-has air
πᾶσα γὰρ ἡ γεώδης ἀτμὶς ἀέρος ἔχει δύναμιν παχέος.
all for the earthy vapor of-air has power of-thick
Ὥσπερ γὰρ ἀντεστραμμένον τῇ πάχνῃ ὁ εὐρώς ἐστιν·
Just-as for converse to-the hoarfrost the mold is
ἂν μὲν γὰρ παγῇ ἡ ἀνιοῦσα ἀτμίς, πάχνη γίνεται, ἐὰν
if indeed for be-frozen the rising vapor hoarfrost becomes if
δὲ σαπῇ, εὐρώς. Διὸ καὶ ἐπιπολῆς ἐστὶν ἄμφω· ἡ γὰρ
but it-putrefy mold Wherefore also on-the-surface are both the for
ἀτμὶς ἐπιπολῆς. Καὶ εὖ δὴ οἱ ποιηταὶ ἐν ταῖς κωμῳδίαις
vapor on-the-surface And well indeed the poets in the comedies
μεταφέρουσι σκώπτοντες, τὰς πολιὰς καλοῦντες γήρως
use-metaphor mocking the gray-hairs calling of-old-age
εὐρῶτα καὶ πάχνην. Τὸ μὲν γὰρ τῷ γένει τὸ δὲ τῷ
mold and hoarfrost The indeed for in-the kind the-other and in-the
εἴδει ταὐτόν ἐστιν, ἡ μὲν πάχνη τῷ γένει (ἀτμὶς γὰρ
species the-same is the indeed hoarfrost in-the kind vapor for
ἄμφω), ὁ δὲ εὐρὼς τῷ εἴδει (σῆψις γὰρ ἄμφω). Σημεῖον
both the but mold in-the species putrefaction for both Sign
δ' ὅτι τοιοῦτόν ἐστιν· καὶ γὰρ ἐκ νόσων πολλοῖς πολιαὶ
and that such it-is and for from diseases in-many gray-hairs
ἀνέφυσαν, ὕστερον δ' ὑγιασθεῖσι μέλαιναι ἀντὶ τούτων.
grew-up later but having-become-healthy black instead-of these
Αἴτιον δ' ὅτι ἐν τῇ ἀρρωστίᾳ, ὥσπερ καὶ τὸ ἄλλο σῶμα
Cause and that in the sickness just-as also the other body
ἐν ἐνδείᾳ φυσικῆς θερμότητός ἐστιν, οὕτω καὶ τῶν ἄλλων
in lack of-natural heat is so also of-the other
μορίων καὶ τὰ πάνυ μικρὰ μετέχει τῆς ἀρρωστίας ταύτης.
parts even the very small partake of-the sickness this

Περίττωμα δὲ πολὺ ἐγγίνεται ἐν τοῖς σώμασι καὶ τοῖς
Residue and much comes-to-be-in in the bodies and the
μορίοις· διόπερ ἡ ἐν ταῖς σαρξὶν ἀπεψία ποιεῖ τὰς πολιάς.
parts wherefore the in the fleshes non-concoction makes the gray-hairs
Ὑγιάναντες δὲ καὶ ἰσχύσαντες πάλιν μεταβάλλουσι,
Having-become-healthy and also having-grown-strong again they-change
καὶ γίνονται ὥσπερ ἐκ γερόντων νέοι· διὸ καὶ τὰ πάθη
and become just-as from old-men young wherefore also the affections
συμμεταβάλλουσιν. Ὀρθῶς δ' ἔχει καὶ λέγειν τὴν μὲν
change-with Rightly and it-is also to-say the indeed
νόσον γῆρας ἐπίκτητον, τὸ δὲ γῆρας νόσον φυσικήν· ποιοῦσι
disease old-age acquired the but old-age disease natural make
γοῦν νόσοι τινὲς ταὐτὰ ἅπερ καὶ τὸ γῆρας. Τοὺς δὲ
at-any-rate diseases some the-same-things which also the old-age The and
κροτάφους πολιοῦνται πρῶτον. Τὰ μὲν γὰρ ὄπισθεν κενὰ
temples they-grow-gray first The indeed for back empty
ὑγρότητός ἐστι διὰ τὸ μὴ ἔχειν ἐγκέφαλον, τὸ δὲ βρέγμα
of-moisture are because-of the not to-have brain the but bregma
πολλὴν ἔχει ὑγρότητα· τὸ δὲ πολὺ οὐκ εὔσηπτον. Αἱ δ' ἐν
much has moisture the but much not easily-putrefied The and in
τοῖς κροτάφοις τρίχες οὔθ' οὕτως ὀλίγον ἔχουσιν ὑγρὸν ὥστε
the temples hairs neither so little have moist so-that
πέττειν, οὔτε πολὺ ὥστε μὴ σήπεσθαι· μέσος γὰρ ὢν ὁ
to-concoct nor much so-that not to-putrefy middle for being the
τόπος ἀμφοτέρων ἐκτὸς ἀμφοτέρων τῶν παθῶν ἐστίν. Περὶ
place of-both outside both the affections is About
μὲν οὖν τῆς τῶν ἀνθρώπων πολιότητος εἴρηται τὸ αἴτιον.
indeed then the of-the humans grayness it-has-been-said the cause

Other animals do not visibly gray, having a smaller and drier brain, except the horse, whose skull bone is thinnest for its size, as Homer knew when he named the spot where the hairs first grow on the skull as most mortal. Red hair grays sooner, being weaker. Cranes are said to darken with age. Grayness is a putrefaction, not a withering: covered hair grays faster, since the winds prevent putrefaction, and some hair is gray from birth, while nothing withered grows. In other animals hair color follows the skin, but human skin is too thin to affect it.

Τοῖς δ' ἄλλοις ζῴοις τοῦ μὴ γίνεσθαι διὰ τὴν ἡλικίαν
For-the and other animals of-the not to-come-about because-of the age
ταύτην τὴν μεταβολὴν ἐπιδήλως τὸ αὐτὸ αἴτιον ὅπερ
this the change evidently the same cause which-very
εἴρηται καὶ ἐπὶ τῆς φαλακρότητος· ὀλίγον γὰρ ἔχουσι
has-been-said also in-the-case-of the baldness little for they-have
καὶ ἧττον ὑγρὸν τὸν ἐγκέφαλον, ὥστε μὴ ἐξαδυνατεῖν
and less moist the brain so-that not to-become-incapable
τὸ θερμὸν πρὸς τὴν πέψιν. Τοῖς δ' ἵπποις ἐπισημαίνει
the hot for the concoction For-the but horses it-shows-signs
μάλιστα ὧν ἴσμεν ζῴων, ὅτι λεπτότατον τὸ ὀστοῦν ὡς
most of-which we-know animals because thinnest the bone as
κατὰ μέγεθος ἔχουσι περὶ τὸν ἐγκέφαλον τῶν ἄλλων.
according-to size they-have about the brain than-the others
Τεκμήριον δ' ὅτι καίριος ἡ πληγὴ ἡ εἰς τὸν τόπον
Proof and that mortal the blow the into the place
τοῦτον γίνεται αὐτοῖς· διὸ καὶ Ὅμηρος οὕτως ἐποίησεν
this becomes for-them wherefore also Homer so composed

ἵνα τε πρῶται τρίχες ἵππων
where both first hairs of-horses
κρανίῳ ἐμπεφύασι, μάλιστα δὲ καίριόν ἐστιν.
on-the-skull have-grown most and mortal it-is

Ῥᾳδίως οὖν ἐπιρρεούσης τῆς ὑγρότητος διὰ τὴν
Easily then flowing-on the moisture because-of the
λεπτότητα τοῦ ὀστοῦ, τῆς δὲ θερμότητος ἐλλειπούσης διὰ
thinness of-the bone the and heat failing because-of
τὴν ἡλικίαν, ἐπιπολιοῦνται αἱ τρίχες αὗται. Καὶ αἱ πυρραὶ
the age grow-gray the hairs these Also the red
δὲ θᾶττον πολιοῦνται τρίχες τῶν μελαινῶν· ἔστι γὰρ καὶ ἡ
and faster grow-gray hairs than-the black is for also the
πυρρότης ὥσπερ ἀρρωστία τριχός, τὰ δ' ἀσθενῆ γηράσκει
redness just-as sickness of-hair the and weak grow-old
πάντα θᾶττον. Μελαντέρας δὲ γίνεσθαι γηρασκούσας
all faster Blacker and to-become aging
λέγεται τὰς γεράνους. Αἴτιον δ' ἂν εἴη τοῦ πάθους τὸ
is-said the cranes Cause but — would-be of-the affection the
φύσει λευκοτέραν αὐτῶν εἶναι τὴν τῶν πτερῶν φύσιν, πλέον
by-nature whiter of-them to-be the of-the feathers nature more
τε γηρασκόντων εἶναι τὸ ὑγρὸν ἐν τοῖς πτεροῖς ἢ ὥστε
and aging to-be the moist in the feathers than so-that
εὐσηπτότερον εἶναι. Ὅτι δὲ γίγνεται ἡ πολιὰ σήψει τινί,
more-easily-putrefied to-be That and comes-about the grayness by-putrefaction some
καὶ ὅτι οὐκ ἔστιν, ὥσπερ οἴονταί τινες, αὔανσις, σημεῖον τοῦ
and that not is just-as think some withering sign of-the
προτέρου ῥηθέντος τὸ τὰς σκεπαζομένας τρίχας πίλοις
former said the the being-covered hairs with-felt-caps
ἢ καλύμμασι πολιοῦσθαι θᾶττον (τὰ γὰρ πνεύματα κωλύει
or coverings to-grow-gray faster the for winds prevent

τὴν σῆψιν, ἡ δὲ σκέπη ἄπνοιαν ποιεῖ), καὶ τὸ βοηθεῖν
the putrefaction the but covering windlessness makes and the to-help
τὴν ἄλειψιν τὴν τοῦ ὕδατος καὶ τοῦ ἐλαίου μιγνυμένων.
the anointing the of-the water and of-the oil being-mixed
Τὸ μὲν γὰρ ὕδωρ ψύχει, τὸ δ' ἔλαιον μιγνύμενον κωλύει
The indeed for water chills the but oil being-mixed prevents
ξηραίνεσθαι ταχέως· τὸ γὰρ ὕδωρ εὐξήραντον. Ὅτι δ' οὐκ
to-be-dried quickly the for water easily-dried That and not
ἔστιν αὔανσις, οὐδ' ὥσπερ ἡ πόα αὐαινομένη λευκαίνεται,
is withering nor just-as the grass withering is-whitened
οὕτω καὶ ἡ θρίξ, σημεῖον ὅτι φύονται εὐθέως ἔνιοι πολιοί·
so also the hair sign that grow at-once some gray
αὖον δ' οὐθὲν φύεται. Λευκαίνονται δὲ καὶ ἐπ' ἄκρου
withered but nothing grows Are-whitened and also at tip
πολλαί· ἐν γὰρ τοῖς ἐσχάτοις καὶ λεπτοτάτοις ἐλαχίστη
many in for the extreme and thinnest least
θερμότης ἐγγίνεται. Τοῖς δ' ἄλλοις ζῴοις ὅσοις γίνονται
heat comes-to-be-in For-the and other animals in-as-many-as become
λευκαὶ αἱ τρίχες, φύσει ἀλλ' οὐ πάθει συμβαίνει γίνεσθαι
white the hairs by-nature but not by-affection it-happens to-come-about
τοῦτο. Αἴτιον δὲ τῶν χρωμάτων τὸ δέρμα τοῖς ἄλλοις·
this Cause and of-the colors the skin for-the others
τῶν μὲν γὰρ λευκῶν λευκὸν τὸ δέρμα, τῶν δὲ μελάνων
of-the indeed for white white the skin of-the but black
μέλαν, τῶν δὲ ποικίλων καὶ γιγνομένων ἐκ συμμίξεως
black of-the but variegated and coming-to-be from mixture
τῇ μὲν λευκὸν τῇ δὲ μέλαν φαίνεται ὅν. Ἐπὶ
in-one-place indeed white in-another but black appears being In-the-case-of
δὲ τῶν ἀνθρώπων οὐθὲν αἴτιον τὸ δέρμα· καὶ γὰρ οἱ
but the humans nothing cause the skin and for the
λευκοὶ σφόδρα μελαίνας ἔχουσιν. Αἴτιον δ' ὅτι λεπτότατον
white very black have Cause and that thinnest

πάντων δέρμα ἄνθρωπος ἔχει ὡς κατὰ μέγεθος, διόπερ
of-all skin human has as according-to size wherefore
οὐθὲν ἰσχύει πρὸς τὴν τῶν τριχῶν μεταβολήν, ἀλλὰ
nothing prevails toward the of-the hairs change but
διὰ τὴν ἀσθένειαν τὸ δέρμα καὶ μεταβάλλει αὐτὸ τὴν
because-of the weakness the skin also changes itself the
χρόαν, καὶ γίνεται ὑπὸ ἡλίων καὶ πνευμάτων μελάντερον·
color and becomes by suns and winds blacker
αἱ δὲ τρίχες οὐθὲν συμμεταβάλλουσιν. Ἐν δὲ τοῖς ἄλλοις
the but hairs nothing change-with In but the others
τὸ δέρμα χώρας ἔχει δύναμιν διὰ τὸ πάχος· διὸ
the skin of-soil has power because-of the thickness wherefore
αἱ μὲν τρίχες κατὰ τὰ δέρματα μεταβάλλουσι, τὰ δὲ
the indeed hairs according-to the skins change the but
δέρματα οὐθὲν κατὰ τὰ πνεύματα καὶ τὸν ἥλιον.
skins nothing according-to the winds and the sun

VI · COLORS OF ANIMALS

Some kinds are one-colored, like lions; some many-colored but each animal whole-colored, like oxen; some variegated by kind, like the leopard, or by individual. The whole-colored change color more easily than the one-colored, which change only by an affection. Hot waters whiten hair and cold blacken it, by the air showing through. The underparts are whiter, and tongues are variegated in variegated animals. Some change color with the seasons, and the omnivorous are more variegated, their varied food causing varied residues.

Τῶν δὲ ζῴων τὰ μέν ἐστι μονόχροα (λέγω δὲ μονόχροα
Of-the and animals the-ones indeed are one-colored I-mean and one-colored
ὧν τὸ γένος ὅλον ἓν χρῶμα ἔχει, οἷον λέοντες πυρροὶ
of-which the kind whole one color has such-as lions tawny

πάντες· καὶ τοῦτο καὶ ἐπ᾽ ὀρνίθων καὶ ἐπ᾽
all and this also in-the-case-of birds and in-the-case-of
ἰχθύων ἐστὶ καὶ τῶν ἄλλων ζῴων ὁμοίως), τὰ δὲ
fish is and of-the other animals likewise the-others and
πολύχροα μέν, ὁλόχροα δέ (λέγω δὲ ὧν τὸ σῶμα ὅλον
many-colored indeed whole-colored but I-mean and of-which the body whole
τὴν αὐτὴν ἔχει χρόαν, οἷον βοῦς ἐστὶν ὅλος λευκὸς καὶ
the same has color such-as ox is whole white and
ὅλος μέλας), τὰ δὲ ποικίλα. Τοῦτο δὲ διχῶς, τὰ
whole black the-others and variegated This and in-two-ways the-ones
μὲν τῷ γένει, ὥσπερ πάρδαλις καὶ ταώς, καὶ τῶν ἰχθύων
indeed by-the kind just-as leopard and peacock and of-the fish
ἔνιοι, οἷον αἱ καλούμεναι θρᾶτται· τῶν δὲ τὸ μὲν
some such-as the so-called thrattae of-the-others and the indeed
γένος ἅπαν οὐ ποικίλον, γίνονται δὲ ποικίλοι, οἷον βόες
kind whole not variegated become but variegated such-as oxen
καὶ αἶγες, καὶ ἐν τοῖς ὄρνισιν, οἷον αἱ περιστεραί· καὶ
and goats and in the birds such-as the pigeons and
ἄλλα δὲ γένη τὸ αὐτὸ πάσχει τῶν ὀρνίθων, μεταβάλλει δὲ
other and kinds the same undergo of-the birds change and
τὰ ὁλόχροα πολλῷ μᾶλλον τῶν μονοχρόων, καὶ εἰς τὴν
the whole-colored much more than-the one-colored both into the
ἀλλήλων χρόαν τὴν ἁπλῆν, οἷον ἐκ λευκῶν μέλανα καὶ
of-one-another color the simple such-as from white black and
ἐκ μελάνων λευκά, καὶ μεμιγμένα ἐξ ἀμφοτέρων, διὰ
from black white and mixed from both because-of
τὸ ὅλῳ τῷ γένει ὑπάρχειν ἐν τῇ φύσει τὸ μὴ μίαν ἔχειν
the to-whole the kind to-belong in the nature the not one to-have
χρόαν· εὐκίνητον γὰρ ὑπάρχει ἐπ᾽ ἀμφότερα τὸ γένος,
color easily-moved for belongs in both-directions the kind
ὥστε καὶ εἰς ἄλληλα μεταβάλλειν καὶ ποικίλλεσθαι μᾶλλον.
so-that both into one-another to-change and to-be-variegated more

Τὰ δὲ μονόχροα τοὐναντίον· οὐ γὰρ μεταβάλλει, ἂν μὴ
The but one-colored the-opposite not for they-change if not
διὰ πάθος, καὶ τοῦτο σπάνιον· ἤδη γὰρ ὤπται καὶ
because-of affection and this rare already for have-been-seen both
πέρδιξ λευκὴ καὶ κόραξ καὶ στρουθὸς καὶ ἄρκτος. Συμβαίνει
partridge white and raven and sparrow and bear Happen
δὲ ταῦτα, ὅταν ἐν τῇ γενέσει διαστραφῇ· εὔφθαρτον γὰρ καὶ
and these when in the generation it-be-distorted easily-destroyed for and
εὐκίνητον τὸ μικρόν, τὸ δὲ γιγνόμενον τοιοῦτον· ἐν μικρῷ
easily-moved the small the but coming-to-be such in small
γὰρ ἡ ἀρχὴ τοῖς γιγνομένοις. Μάλιστα δὲ μεταβάλλουσι
for the principle for-the coming-to-be Most and change
καὶ τὰ φύσει μονόχροα μὲν ὄντα, τῷ γένει δὲ πολύχροα,
also the by-nature one-colored indeed being in-the kind but many-colored
διὰ τὰ ὕδατα· τὰ μὲν γὰρ θερμὰ λευκὴν ποιεῖ τὴν τρίχα,
because-of the waters the indeed for hot white make the hair
τὰ δὲ ψυχρὰ μέλαιναν, ὥσπερ καὶ ἐπὶ τῶν φυτῶν.
the but cold black just-as also in-the-case-of the plants
Αἴτιον δ' ὅτι τὰ θερμὰ πνεύματος πλέον ἔχει ἢ ὕδατος,
Cause and that the hot of-breath more have than of-water
ὁ δ' ἀὴρ διαφαινόμενος λευκότητα ποιεῖ, καθάπερ καὶ τὸν
the and air showing-through whiteness makes just-as also the
ἀφρόν. Διαφέρει μὲν οὖν, ὥσπερ καὶ τὰ δέρματα τὰ διὰ
foam Differ indeed then just-as also the skins the because-of
πάθος λευκὰ τῶν διὰ τὴν φύσιν, οὕτω καὶ ἐν ταῖς
affection white from-the because-of the nature so also in the
θριξὶν ἥ τε διὰ νόσον ἢ καὶ ἡλικίαν καὶ ἡ διὰ φύσιν
hairs the both because-of disease or also age and the because-of nature
λευκότης τῶν τριχῶν τῷ τὸ αἴτιον ἕτερον εἶναι· τὰς μὲν
whiteness of-the hairs by-the the cause different to-be the-ones indeed
γὰρ ἡ φυσικὴ θερμότης ποιεῖ λευκάς, τὰς δ' ἡ ἀλλοτρία.
for the natural heat makes white the-others but the foreign

Τὸ δὲ λευκὸν ὁ ἀτμιδώδης ἀὴρ παρέχεται ἐγκατακλειόμενος
The and white the vaporous air provides being-shut-in
ἐν πᾶσιν, διὸ καὶ ὅσα μὴ μονόχροά ἐστι, τὰ ὑπὸ τὴν
in all wherefore also as-many-as not one-colored are the under the
γαστέρα πάντα λευκότερά ἐστιν. Καὶ γὰρ θερμότερα καὶ
belly all whiter are And for hotter and
ἡδυκρεώτερα πάντα τὰ λευκὰ ὡς εἰπεῖν ἐστὶ διὰ τὴν αὐτὴν
sweeter-fleshed all the white so to-say are because-of the same
αἰτίαν· ἡ μὲν γὰρ πέψις γλυκέα ποιεῖ, τὴν δὲ πέψιν τὸ
cause the indeed for concoction sweet makes the and concoction the
θερμόν. Ἡ δ' αὐτὴ αἰτία καὶ τῶν μονοχρόων μέν, μελάνων
hot The and same cause also of-the one-colored indeed black
δ' ἢ λευκῶν· θερμότης γὰρ καὶ ψυχρότης αἰτία τῆς φύσεως
but or white heat for and coldness cause of-the nature
τοῦ δέρματος καὶ τῶν τριχῶν· ἔχει γὰρ ἕκαστον τῶν μορίων
of-the skin and of-the hairs has for each of-the parts
θερμότητα οἰκείαν, ἔτι δ' αἱ γλῶτται διαφέρουσι τῶν
heat own further and the tongues differ of-the
ἁπλῶν τε καὶ ποικίλων καὶ τῶν ἁπλῶν μὲν διαφερόντων δέ,
simple both and variegated and of-the simple indeed differing but
οἷον λευκῶν καὶ μελάνων. Αἴτιον δὲ τὸ εἰρημένον πρότερον,
such-as white and black Cause and the said before
ὅτι τὰ δέρματα ποικίλα τῶν ποικίλων, καὶ τῶν λευκοτρίχων
that the skins variegated of-the variegated and of-the white-haired
καὶ τῶν μελανοτρίχων τῶν μὲν λευκὰ τῶν δὲ
and of-the black-haired of-the-ones indeed white of-the-others and
μέλανα. Τὴν δὲ γλῶτταν δεῖ ὑπολαβεῖν ὥσπερ ἓν μόριον
black The and tongue one-must to-suppose just-as one part
τῶν ἐξωτερικῶν εἶναι, μὴ ὅτι ἐν τῷ στόματι σκεπάζεται,
of-the external to-be not because in the mouth it-is-covered

ἀλλ᾽ οἷον χεῖρα ἢ πόδα· ὥστ᾽ ἐπεὶ τῶν ποικίλων τὸ δέρμα
but like hand or foot so-that since of-the variegated the skin
οὐ μονόχρων, καὶ τοῦ ἐπὶ τῇ γλώττῃ δέρματος τοῦτ᾽ αἴτιον.
not one-colored also of-the on the tongue skin this cause
Μεταβάλλουσι δὲ τὰ χρώματα καὶ τῶν ὀρνίθων τινὲς
Change and the colors also of-the birds some
καὶ τῶν τετραπόδων τῶν ἀγρίων ἔνια κατὰ τὰς ὥρας.
and of-the quadrupeds the wild some according-to the seasons
Αἴτιον δ᾽ ὅτι ὥσπερ οἱ ἄνθρωποι κατὰ τὴν ἡλικίαν
Cause and that just-as the humans according-to the age
μεταβάλλουσι, τοῦτ᾽ ἐκείνοις συμβαίνει κατὰ τὰς ὥρας·
change this to-those happens according-to the seasons
μείζων γὰρ διαφορὰ αὕτη τῆς κατὰ τὴν ἡλικίαν τροπῆς.
greater for difference this than-the according-to the age turning
Εἰσὶ δὲ καὶ τὰ παμφαγώτερα ποικιλώτερα ὡς ἐπὶ τὸ
Are and also the more-omnivorous more-variegated as for the
πλῆθος εἰπεῖν εὐλόγως, οἷον αἱ μέλιτται μονόχροα μᾶλλον
most-part to-say reasonably such-as the bees one-colored more
ἢ αἱ ἀνθρῆναι καὶ σφῆκες· εἰ γὰρ αἱ τροφαὶ αἴτιαι τῆς
than the hornets and wasps if for the nourishments causes of-the
μεταβολῆς, εὐλόγως αἱ ποικίλαι τροφαὶ παντοδαπωτέρας
change reasonably the varied nourishments more-various
ποιοῦσι τὰς κινήσεις καὶ τὰ περιττώματα τῆς τροφῆς, ἐξ
make the motions and the residues of-the nourishment from
ὧν καὶ τρίχες καὶ πτίλα καὶ δέρματα γίνεται. Καὶ περὶ
which also hairs and feathers and skins come-to-be And about
μὲν χρωμάτων καὶ τριχῶν διωρίσθω τὸν τρόπον τοῦτον.
indeed colors and hairs let-it-be-determined the way this

Voices differ in pitch, loudness, and smoothness. Deep is not loud: loudness is the quantity of air moved, depth its slowness relative to the mover's strength; so the young and females, too weak to move much air, are high-voiced, while calves and cows, with weak organs moving much air, are deep. The strength lies in the sinews and in the heart, which in bulls is taut and even bony; castration slackens it as removing the weights slackens the loom's warp, so the castrated take a female voice, as the voice also breaks at puberty. Warm breath deepens the voice, and a rough or soft windpipe makes it rough or flexible.

Περὶ δὲ φωνῆς, ὅτι τὰ μὲν βαρύφωνα τῶν ζῴων ἐστί,
About and voice that the-ones indeed deep-voiced of-the animals are
τὰ δ' ὀξύφωνα, τὰ δ' εὔτονα καὶ πρὸς ἀμφοτέρας
the-others and high-voiced the-others and well-pitched and toward both
ἔχοντα τὰς ὑπερβολὰς συμμέτρως, ἔτι δὲ τὰ μὲν
being the extremes proportionately further and the-ones indeed
μεγαλόφωνα τὰ δὲ μικρόφωνα, καὶ λειότητι καὶ
loud-voiced the-others and small-voiced and by-smoothness and
τραχύτητι καὶ εὐκαμψίᾳ καὶ ἀκαμψίᾳ διαφέροντα ἀλλήλων,
roughness and flexibility and inflexibility differing from-one-another
ἐπισκεπτέον διὰ τίνας αἰτίας ὑπάρχει τούτων ἕκαστον.
it-must-be-examined because-of what causes belongs of-these each
Περὶ μὲν οὖν ὀξύτητος καὶ βαρύτητος τὴν αὐτὴν αἰτίαν
About indeed then highness and deepness the same cause
οἰητέον εἶναι ἥνπερ ἐπὶ τῆς μεταβολῆς ἣν
one-must-think to-be which-very in-the-case-of the change which
μεταβάλλει νέα ὄντα καὶ πρεσβύτερα. Τὰ μὲν γὰρ ἄλλα
they-change young being and older The indeed for other
πάντα νεώτερα ὄντα ὀξύτερον φθέγγεται, τῶν δὲ βοῶν
all younger being higher utter of-the but oxen
οἱ μόσχοι βαρύτερον. Τὸ δ' αὐτὸ συμβαίνει καὶ ἐπὶ
the calves deeper The and same happens also in-the-case-of

τῶν ἀρρένων καὶ θηλειῶν· ἐν μὲν γὰρ τοῖς ἄλλοις γένεσι
the males and females in indeed for the other kinds
τὸ θῆλυ ὀξύτερον φθέγγεται τοῦ ἄρρενος (μάλιστα δ'
the female higher utters than-the male most and
ἐπίδηλον ἐπὶ τῶν ἀνθρώπων τοῦτο· μάλιστα γὰρ
evident in-the-case-of the humans this most for
τούτοις ταύτην τὴν δύναμιν ἀποδέδωκεν ἡ φύσις διὰ
to-these this the power has-given the nature because-of
τὸ λόγῳ χρῆσθαι μόνους τῶν ζῴων, τοῦ δὲ λόγου ὕλην
the speech to-use alone of-the animals of-the and speech matter
εἶναι τὴν φωνήν), ἐπὶ δὲ τῶν βοῶν τοὐναντίον·
to-be the voice in-the-case-of but the oxen the-opposite
βαρύτερον γὰρ αἱ θήλειαι φθέγγονται τῶν ταύρων.
deeper for the females utter than-the bulls
Τίνος μὲν οὖν ἕνεκα φωνὴν ἔχει τὰ ζῷα, καὶ τί ἐστι
Of-what indeed then for-the-sake voice have the animals and what is
φωνὴ καὶ ὅλως ὁ ψόφος, τὰ μὲν ἐν τοῖς περὶ αἰσθήσεως
voice and generally the sound the-ones indeed in the about perception
εἴρηται, τὰ δ' ἐν τοῖς περὶ ψυχῆς. Ἐπεὶ δὲ βαρὺ
it-has-been-said the-others and in the about soul Since and deep
μέν ἐστιν ἐν τῷ βραδεῖαν εἶναι τὴν κίνησιν, ὀξὺ δ' ἐν
indeed is in the slow to-be the motion high and in
τῷ ταχεῖαν, τοῦ δὲ βραδέως ἢ ταχέως πότερον τὸ κινοῦν
the quick of-the and slowly or quickly whether the moving
αἴτιον ἢ τὸ κινούμενον, ἔχει τινὰ ἀπορίαν. Φασὶ γάρ τινες
cause or the being-moved has some puzzle Say for some
τὸ μὲν πολὺ βραδέως κινεῖσθαι, τὸ δ' ὀλίγον ταχέως, καὶ
the indeed much slowly to-be-moved the but little quickly and
ταύτην αἰτίαν εἶναι τοῦ τὰ μὲν βαρύφωνα εἶναι τὰ
this cause to-be of-the the-ones indeed deep-voiced to-be the-others
δ' ὀξύφωνα, λέγοντες μέχρι τινὸς καλῶς, ὅλως δ' οὐ
and high-voiced saying up-to some-point well generally but not

καλῶς. Τῷ μὲν γὰρ γένει ὀρθῶς ἔοικε λέγεσθαι τὸ βαρὺ ἐν
well By-the indeed for kind rightly seems to-be-said the deep in
μεγέθει τινὶ εἶναι τοῦ κινουμένου. Εἰ γὰρ τοῦτο, καὶ μικρὸν
size some to-be of-the being-moved If for this both small
καὶ βαρὺ φθέγξασθαι οὐ ῥᾴδιον, ὁμοίως δὲ οὐδὲ βαρὺ καὶ
and deep to-utter not easy likewise and nor deep and
ὀξύ. Καὶ δοκεῖ γενναιοτέρας εἶναι φύσεως ἡ βαρυφωνία,
high And seems of-nobler to-be nature the deep-voicedness
καὶ ἐν τοῖς μέλεσι τὸ βαρὺ τῶν συντόνων βέλτιον· τὸ
and in the songs the deep than-the tense better the
γὰρ βέλτιον ἐν ὑπεροχῇ, ἡ δὲ βαρύτης ὑπεροχή τις.
for better in excess the and deepness excess some
Ἀλλ' ἐπειδή ἐστιν ἕτερον τὸ βαρὺ καὶ ὀξὺ ἐν φωνῇ
But since is other the deep and high in voice
μεγαλοφωνίας καὶ μικροφωνίας (ἔστι γὰρ καὶ ὀξύφωνα
than-loudness and smallness-of-voice there-are for also high-voiced
μεγαλόφωνα, καὶ μικρόφωνα βαρύφωνα ὡσαύτως), ὁμοίως
loud-voiced and small-voiced deep-voiced likewise likewise
δὲ καὶ κατὰ τὸν μέσον τόνον τούτων· περὶ ὧν τίνι
and also according-to the middle pitch of-these about which by-what
ἄν τις ἄλλῳ διορίσειεν (λέγω δὲ μεγαλοφωνίαν καὶ
— someone other would-distinguish I-mean and loudness and
μικροφωνίαν) ἢ πλήθει καὶ ὀλιγότητι τοῦ κινουμένου; Εἰ
smallness-of-voice than by-quantity and fewness of-the being-moved If
οὖν κατὰ τὸν λεγόμενον ἔσται διορισμὸν τὸ ὀξὺ καὶ βαρύ,
then according-to the said will-be distinction the high and deep
συμβήσεται τὰ αὐτὰ εἶναι βαρύφωνα καὶ μεγαλόφωνα καὶ
it-will-happen the same to-be deep-voiced and loud-voiced and
ὀξύφωνα καὶ μικρόφωνα. Τοῦτο δὲ ψεῦδος. Αἴτιον δ' ὅτι
high-voiced and small-voiced This and false Cause and that
τὸ μέγα καὶ τὸ μικρὸν καὶ τὸ πολὺ καὶ τὸ ὀλίγον τὰ
the great and the small and the much and the little the-ones

μὲν ἁπλῶς λέγεται, τὰ δὲ πρὸς ἄλληλα. Μεγαλόφωνα
indeed simply are-said the-others and relative-to one-another Loud-voiced
μὲν οὖν ἐστὶν ἐν τῷ πολὺ ἁπλῶς εἶναι τὸ κινούμενον,
indeed then are in the much simply to-be the being-moved
μικρόφωνα δὲ τῷ ὀλίγον, βαρύφωνα δὲ καὶ ὀξύφωνα ἐν
small-voiced and in-the little deep-voiced and and high-voiced in
τῷ πρὸς ἄλληλα ταύτην ἔχειν τὴν διαφοράν. Ἐὰν μὲν γὰρ
the relative-to one-another this to-have the difference If indeed for
ὑπερέχῃ τὸ κινούμενον τῆς τοῦ κινοῦντος ἰσχύος, ἀνάγκη
exceed the being-moved the of-the moving strength necessary
βραδέως φέρεσθαι τὸ φερόμενον, ἂν δ' ὑπερέχηται, ταχέως.
slowly to-be-carried the being-carried if but it-be-exceeded quickly
Τὸ δ' ἰσχῦον διὰ τὴν ἰσχὺν ὁτὲ μὲν πολὺ κινοῦν
The and strong because-of the strength at-times indeed much moving
βραδεῖαν ποιεῖ τὴν κίνησιν, ὁτὲ δὲ διὰ τὸ κρατεῖν
slow makes the motion at-times and because-of the to-prevail
ταχεῖαν. Κατὰ τὸν αὐτὸν δὲ λόγον καὶ τῶν κινούντων τὰ
quick According-to the same and ratio also of-the moving the
ἀσθενῆ τὰ μὲν πλείω κινοῦντα τῆς δυνάμεως βραδεῖαν
weak the-ones indeed more moving than-the power slow
ποιεῖ τὴν κίνησιν, τὰ δὲ δι' ἀσθένειαν ὀλίγον
make the motion the-others and because-of weakness little
κινοῦντα ταχεῖαν. Αἱ μὲν οὖν αἰτίαι τῶν ἐναντιώσεων
moving quick The indeed then causes of-the contrarieties
αὗται, τοῦ μήτε πάντα τὰ νέα ὀξύφωνα εἶναι μήτε
these of-the neither all the young high-voiced to-be nor
βαρύφωνα, μήτε τὰ πρεσβύτερα, μήτε τὰ ἄρρενα καὶ
deep-voiced nor the older nor the males and
θήλεα, πρὸς δὲ τούτοις καὶ τοῦ τοὺς κάμνοντας ὀξὺ
females in-addition and to-these also of-the the sick high
φθέγγεσθαι καὶ τοὺς εὖ τὸ σῶμα ἔχοντας, ἔτι δὲ
to-utter and the well the body having further and

καὶ γέροντας γινομένους μᾶλλον ὀξυφωνοτέρους γίνεσθαι,
also old becoming more higher-voiced to-become
τῆς ἡλικίας ἐναντίας οὔσης τῇ τῶν νέων. Τὰ μὲν οὖν
the age opposite being to-the of-the young The indeed then
πλεῖστα νεώτερα ὄντα καὶ θήλεα δι' ἀδυναμίαν ὀλίγον
most younger being and female because-of incapacity little
κινοῦντα ἀέρα ὀξύφωνά ἐστιν· ταχὺ γὰρ ὁ ὀλίγος φέρεται,
moving air high-voiced are quickly for the little is-carried
τὸ δὲ ταχὺ ὀξὺ ἐν φωνῇ. Οἱ δὲ μόσχοι καὶ αἱ βόες αἱ
the but quick high in voice The and calves and the cows the
θήλειαι, οἱ μὲν διὰ τὴν ἡλικίαν, αἱ δὲ διὰ τὴν
female the indeed because-of the age the-others and because-of the
φύσιν τῆς θηλύτητος, οὐκ ἰσχυρὸν ἔχουσι τὸ μόριον ᾧ
nature of-the femaleness not strong have the part with-which
κινοῦσι, πολὺ δὲ κινοῦντα βαρύφθογγά ἐστιν· βαρὺ γὰρ τὸ
they-move much but moving deep-voiced are deep for the
βραδέως φερόμενον, ὁ δὲ πολὺς ἀὴρ φέρεται βραδέως.
slowly carried the and much air is-carried slowly
Πολὺν δὲ κινοῦσι ταῦτα, τὰ δ' ἄλλ' ὀλίγον, διὰ τὸ τὸ
Much and move these the but others little because-of the the
ἀγγεῖον δι' οὗ πρῶτον φέρεται τὸ πνεῦμα, τούτοις μὲν
vessel through which first is-carried the breath for-these indeed
διάστημ' ἔχειν μέγα καὶ πολὺν ἀναγκάζεσθαι ἀέρα κινεῖν,
interval to-have great and much to-be-compelled air to-move
τοῖς δ' ἄλλοις εὐταμίευτον εἶναι. Προϊούσης δὲ τῆς ἡλικίας
for-the but others easily-regulated to-be Advancing and the age
ἰσχύει μᾶλλον τοῦτο τὸ μόριον τὸ κινοῦν ἐν ἑκάστοις,
is-strong more this the part the moving in each
ὥστε μεταβάλλουσιν εἰς τοὐναντίον, καὶ τὰ μὲν ὀξύφωνα
so-that they-change into the-opposite and the indeed high-voiced
βαρυφωνότερα γίνεται αὐτὰ αὑτῶν, τὰ δὲ βαρύφωνα
deeper-voiced become themselves than-themselves the but deep-voiced

ὀξυφωνότερα· διόπερ οἱ ταῦροι ὀξυφωνότεροι τῶν μόσχων
higher-voiced wherefore the bulls higher-voiced than-the calves
καὶ τῶν θηλειῶν βοῶν. Ἔστι μὲν οὖν πᾶσιν ἡ ἰσχὺς
and the female cows Is indeed then in-all the strength
ἐν τοῖς νεύροις, διὸ καὶ τὰ ἀκμάζοντα ἰσχύει μᾶλλον.
in the sinews wherefore also the in-their-prime are-strong more
Ἄναρθρα γὰρ τὰ νέα μᾶλλον καὶ ἄνευρα. Ἔτι δὲ τοῖς
Unjointed for the young more and sinewless Further and in-the
μὲν νέοις οὔπω ἐπιτέταται, τοῖς δὲ γηράσκουσιν ἤδη
indeed young not-yet it-is-tightened in-the but aging already
ἀνίεται ἡ συντονία· διὸ ἄμφω ἀσθενῆ καὶ ἀδύνατα
it-is-slackened the tension wherefore both weak and incapable
πρὸς τὴν κίνησιν. Μάλιστα δ' οἱ ταῦροι νευρώδεις, καὶ ἡ
toward the motion Most and the bulls sinewy and the
καρδία· διόπερ σύντονον ἔχουσι τοῦτο τὸ μόριον ᾧ
heart wherefore taut they-have this the part with-which
κινοῦσι τὸ πνεῦμα, ὥσπερ χορδὴν τεταμένην νευρίνην.
they-move the breath just-as string stretched of-sinew
Δηλοῖ δὲ τοιαύτη τὴν φύσιν οὖσα ἡ καρδία τῶν βοῶν
Shows and such in-the nature being the heart of-the oxen
τῷ καὶ ὀστοῦν ἐγγίνεσθαι ἐν ἐνίαις αὐτῶν· τὰ δ' ὀστᾶ
by-the also bone to-come-to-be-in in some of-them the and bones
ζητεῖ τὴν τοῦ νεύρου φύσιν. Ἐκτεμνόμενα δὲ πάντα εἰς
seek the of-the sinew nature Being-castrated and all into
τὸ θῆλυ μεταβάλλει, καὶ διὰ τὸ ἀνίεσθαι τὴν ἰσχὺν
the female change and because-of the to-be-slackened the strength
τὴν νευρώδη ἐν τῇ ἀρχῇ ὁμοίαν ἀφίησι φωνὴν τοῖς
the sinewy in the principle like they-emit voice to-the
θήλεσιν. Ἡ δ' ἄνεσις παραπλησία γίνεται ὥσπερ ἂν εἴ
females The and slackening similar comes-about just-as — if
τις χορδὴν κατατείνας σύντονον ποιήσειε τῷ ἐξάψαι τι
someone string having-stretched taut should-make by-the to-hang some

βάρος, οἷον δὴ ποιοῦσιν αἱ τοὺς ἱστοὺς ὑφαίνουσαι· καὶ
weight such-as indeed make the the looms weaving and
γὰρ αὗται τὸν στήμονα κατατείνουσι προσάπτουσαι τὰς
for these the warp stretch attaching the
καλουμένας λαιάς. Οὕτω γὰρ καὶ ἡ τῶν ὄρχεων φύσις
so-called loom-weights So for also the of-the testes nature
προσήρτηται πρὸς τοὺς σπερματικοὺς πόρους, οὗτοι δ' ἐκ
is-attached to the seminal ducts these and from
τῆς φλεβός, ἧς ἡ ἀρχὴ ἐκ τῆς καρδίας πρὸς αὐτῷ τῷ
the vein of-which the principle from the heart at itself the
κινοῦντι τὴν φωνήν. Διὸ καὶ τῶν σπερματικῶν πόρων
moving the voice Wherefore also the seminal ducts
μεταβαλλόντων πρὸς τὴν ἡλικίαν, ἐν ᾗ ἤδη δύνανται
changing toward the age in which already they-can
τὸ σπέρμα ἐκκρίνειν, συμμεταβάλλει καὶ τοῦτο τὸ μόριον.
the seed to-secrete changes-with also this the part
Τούτου δὲ μεταβάλλοντος καὶ ἡ φωνὴ μεταβάλλει, μᾶλλον
This and changing also the voice changes more
μὲν τοῖς ἄρρεσιν, συμβαίνει δὲ ταὐτὸ καὶ ἐπὶ τῶν
indeed in-the males happens and the-same also in-the-case-of the
θηλειῶν, ἀλλ' ἀδηλότερον, καὶ γίνεται ὃ καλοῦσί τινες
females but less-plainly and comes-about what call some
τραγίζειν, ὅταν ἀνώμαλος ᾖ ἡ φωνή. Μετὰ δὲ ταῦτα
to-bleat-like-a-goat when uneven be the voice After and these
καθίσταται εἰς τὴν τῆς ἐπιούσης ἡλικίας βαρύτητα ἢ
it-settles into the of-the coming age deepness or
ὀξυφωνίαν. Ἀφαιρουμένων δὲ τῶν ὄρχεων ἀνίεται ἡ τάσις
high-voicedness Being-removed and the testes is-slackened the tension
τῶν πόρων, ὥσπερ ἀπὸ τῆς χορδῆς καὶ τοῦ στήμονος
of-the ducts just-as from the string and the warp
ἀφαιρουμένου τοῦ βάρους. Τούτου δ' ἀνιεμένου καὶ ἡ
being-removed the weight This and being-slackened also the

ἀρχὴ ἡ κινοῦσα τὴν φωνὴν ἐκλύεται κατὰ τὸν αὐτὸν
principle the moving the voice is-loosened according-to the same
λόγον. Διὰ μὲν οὖν ταύτην τὴν αἰτίαν τὰ ἐκτεμνόμενα
ratio Because-of indeed then this the cause the being-castrated
μεταβάλλει εἰς τὸ θῆλυ τήν τε φωνὴν καὶ τὴν ἄλλην
change into the female the both voice and the other
μορφήν, διὰ τὸ συμβαίνειν ἀνίεσθαι τὴν ἀρχὴν ἐξ ἧς
shape because-of the to-happen to-be-slackened the principle from which
ὑπάρχει τῷ σώματι ἡ συντονία, ἀλλ᾽ οὐχ ὥσπερ τινὲς
belongs to-the body the tension but not just-as some
ὑπολαμβάνουσιν αὐτοὺς τοὺς ὄρχεις εἶναι σύναμμα πολλῶν
suppose themselves the testes to-be junction of-many
ἀρχῶν· ἀλλὰ μικραὶ μεταστάσεις μεγάλων αἰτίαι γίνονται,
principles but small displacements of-great causes become
οὐ δι᾽ αὑτάς, ἀλλ᾽ ὅταν συμβαίνῃ ἀρχὴν συμμεταβάλλειν.
not because-of themselves but when it-happen principle to-change-with
Αἱ γὰρ ἀρχαὶ μεγέθει οὖσαι μικραὶ τῇ δυνάμει μεγάλαι
The for principles in-size being small in-the power great
εἰσίν· τοῦτο γάρ ἐστι τὸ ἀρχὴν εἶναι, τὸ αὐτὴν μὲν
are this for is the principle to-be the itself indeed
αἰτίαν εἶναι πολλῶν, ταύτης δ᾽ ἄλλο ἄνωθεν μηθέν. Τοῦ
cause to-be of-many of-this but other above nothing Of-the
δὲ φύσει τὰ μὲν τοιαῦτα συνίστασθαι τῶν ζῴων ὥστε
and by-nature the-ones indeed such to-be-constituted of-the animals so-that
βαρύφωνα εἶναι, τὰ δ᾽ ὀξύφωνα, συμβάλλεται καὶ ἡ
deep-voiced to-be the-others and high-voiced contributes also the
θερμότης τοῦ τόπου καὶ ἡ ψυχρότης. Τὸ μὲν γὰρ θερμὸν
heat of-the place and the coldness The indeed for hot
πνεῦμα διὰ παχύτητα ποιεῖ βαρυφωνίαν, τὸ δὲ ψυχρὸν
breath because-of thickness makes deep-voicedness the but cold
διὰ λεπτότητα τοὐναντίον. Δῆλον δὲ τοῦτο καὶ ἐπὶ
because-of thinness the-opposite Clear and this also in-the-case-of

τῶν αὐλῶν· οἱ γὰρ θερμοτέρῳ τῷ πνεύματι χρώμενοι, καὶ
the pipes those for with-hotter the breath using and
τοιοῦτον προϊέμενοι οἷον οἱ αἰάζοντες, βαρύτερον αὐλοῦσιν.
such emitting as those wailing deeper pipe
Τῆς δὲ τραχυφωνίας αἴτιον, καὶ τοῦ λείαν εἶναι τὴν φωνήν,
Of-the and rough-voicedness cause and of-the smooth to-be the voice
καὶ πάσης τῆς τοιαύτης ἀνωμαλίας, τὸ τὸ μόριον καὶ τὸ
and of-all the such unevenness the the part and the
ὄργανον δι' οὗ φέρεται ἡ φωνὴ ἢ τραχὺ ἢ λεῖον εἶναι
instrument through which is-carried the voice either rough or smooth to-be
ἢ ὅλως ὁμαλὸν ἢ ἀνώμαλον. Δῆλον δ' ὅταν ὑγρότης τις
or generally even or uneven Clear and when moisture some
ὑπάρχῃ περὶ τὴν ἀρτηρίαν ἢ τραχύτης γένηται ὑπό τινος
be-present about the windpipe or roughness come-about by some
πάθους· τότε γὰρ καὶ ἡ φωνὴ γίνεται ἀνώμαλος. Τῆς δ'
affection then for also the voice becomes uneven Of-the and
εὐκαμψίας, ἂν μαλακὸν ἢ σκληρὸν ᾖ τὸ ὄργανον. Τὸ μὲν
flexibility if soft or hard be the instrument The indeed
γὰρ μαλακὸν δύναται ταμιεύεσθαι καὶ παντοδαπὸν γίνεσθαι,
for soft can to-be-regulated and of-every-kind to-become
τὸ δὲ σκληρὸν οὐ δύναται. Καὶ τὸ μὲν μαλακὸν καὶ μικρὸν
the but hard not can And the indeed soft both small
δύναται καὶ μέγα φθέγγεσθαι, διὸ καὶ ὀξὺ καὶ βαρύ·
can and great to-utter wherefore also high and deep
ταμιεύεται γὰρ ῥᾳδίως τοῦ πνεύματος, καὶ αὐτὸ γινόμενον
it-regulates for easily the breath and itself becoming
ῥᾳδίως μέγα καὶ μικρόν· ἡ δὲ σκληρότης ἀταμίευτον. Περὶ
easily great and small the but hardness unregulable About
μὲν οὖν φωνῆς ὅσα μὴ πρότερον ἐν τοῖς περὶ αἰσθήσεως
indeed then voice as-many-as not before in the about perception
διώρισται καὶ ἐν τοῖς περὶ ψυχῆς, τοσαῦτ' εἰρήσθω.
has-been-determined and in the about soul so-much let-it-be-said

The front teeth come before the molars, and they fall out and grow again while the molars do not. Democritus says they fall because they grow too early, from suckling, but the pig suckles and keeps them, as do some saw-toothed ones. The front teeth come first because their work, cutting, precedes grinding and they are smaller; they fall because they blunt and must be replaced, and because their roots sit in thin bone, while the molars go on growing, the last about the twentieth year and in some only in old age. Democritus, neglecting the final cause, reduces all to necessity; the causes are both, like a surgeon's knife used for health.

Περὶ δὲ ὀδόντων, ὅτι μὲν οὐχ ἑνὸς χάριν, οὐδὲ πάντα
About and teeth that indeed not of-one for-the-sake nor all
τοῦ αὐτοῦ ἕνεκεν τὰ ζῷα ἔχουσιν, ἀλλὰ τὰ μὲν
of-the same for-the-sake the animals have but the-ones indeed
διὰ τὴν τροφήν, τὰ δὲ καὶ πρὸς ἀλκὴν καὶ πρὸς
because-of the nourishment the-others and also for defense and for
τὸν ἐν τῇ φωνῇ λόγον, εἴρηται πρότερον· διότι δ' οἱ
the in the voice speech it-has-been-said before why and the
μὲν πρόσθιοι γίνονται πρότερον οἱ δὲ γόμφιοι ὕστερον,
indeed front come-to-be earlier the but molars later
καὶ οὗτοι μὲν οὐκ ἐκπίπτουσιν, ἐκεῖνοι δ' ἐκπίπτουσι
and these indeed not fall-out those but fall-out
καὶ φύονται πάλιν, τοῖς περὶ γενέσεως λόγοις τὴν αἰτίαν
and grow again to-the about generation discourses the cause
συγγενῆ δεῖ νομίζειν. Εἴρηκε μὲν οὖν περὶ αὐτῶν
akin one-must to-think Has-spoken indeed then about them
καὶ Δημόκριτος, οὐ καλῶς δ' εἴρηκεν. Οὐ γὰρ ἐπὶ
also Democritus not well but he-has-spoken Not for in-the-case-of
πάντων σκεψάμενος καθόλου λέγει τὴν αἰτίαν. Φησὶ γὰρ
all having-examined universally he-tells the cause He-says for
ἐκπίπτειν μὲν διὰ τὸ πρὸ ὥρας γίνεσθαι τοῖς ζῴοις·
to-fall-out indeed because-of the before season to-come-about to-the animals

ἀκμαζόντων γὰρ ὡς εἰπεῖν φύεσθαι κατά γε φύσιν.
being-in-their-prime for so to-say to-grow according-to at-least nature
Τοῦ δὲ πρὸ ὥρας γίνεσθαι τὸ θηλάζειν αἰτιᾶται. Καίτοι
Of-the and before season to-come-about the to-suck he-blames And-yet
θηλάζει γε καὶ ὗς, οὐκ ἐκβάλλει δὲ τοὺς ὀδόντας· ἔτι
sucks at-least also pig not casts-off but the teeth further
δὲ τὰ καρχαρόδοντα θηλάζει μὲν πάντα, οὐκ ἐκβάλλει
and the saw-toothed suck indeed all not cast-off
δ' ἔνια αὐτῶν πλὴν τοὺς κυνόδοντας, οἷον οἱ λέοντες.
but some of-them except the canines such-as the lions
Τοῦτο μὲν οὖν ἥμαρτε καθόλου λέγων, οὐ σκεψάμενος τὸ
This indeed then he-erred universally speaking not having-examined the
συμβαῖνον ἐπὶ πάντων, δεῖ δὲ τοῦτο ποιεῖν· ἀνάγκη
happening in-the-case-of all one-must and this to-do necessary
γὰρ τὸν λέγοντα καθόλου τι λέγειν περὶ πάντων. Ἐπεὶ
for the speaking universally something to-speak about all Since
δὲ τὴν φύσιν ὑποτιθέμεθα, ἐξ ὧν ὁρῶμεν ὑποτιθέμενοι,
and the nature we-assume from what we-see assuming
οὔτ' ἐλλείπουσαν οὔτε μάταιον οὐθὲν ποιοῦσαν τῶν
neither falling-short nor vain anything making of-the
ἐνδεχομένων περὶ ἕκαστον, ἀνάγκη δὲ τοῖς μέλλουσι
possible about each necessary and for-those going-to
λαμβάνειν τροφὴν μετὰ τὴν τοῦ γάλακτος ἀπόλαυσιν ἔχειν
to-take nourishment after the of-the milk enjoyment to-have
ὄργανα πρὸς τὴν ἐργασίαν τῆς τροφῆς· εἰ οὖν συνέβαινεν,
instruments toward the working of-the nourishment if then it-happened
ὡς ἐκεῖνος λέγει, πρὸς ἥβην, ἐνέλειπεν ἂν ἡ φύσις τῶν
as that-one says toward puberty would-fall-short — the nature of-the
ἐνδεχομένων αὐτῇ τι ποιεῖν, καὶ τὸ τῆς φύσεως ἔργον
possible for-it something to-do and the of-the nature work
ἐγίγνετ' ἂν παρὰ φύσιν. Τὸ γὰρ βίᾳ παρὰ φύσιν, βίᾳ
would-come-about — against nature The for by-force against nature by-force

δέ φησι συμβαίνειν τὴν γένεσιν τῶν ὀδόντων. Ὅτι μὲν
and he-says to-happen the generation of-the teeth That indeed
οὖν τοῦτ᾽ οὐκ ἀληθές, φανερὸν ἐκ τούτων καὶ τοιούτων
then this not true plain from these and such
ἄλλων. Γίνονται δὲ πρότερον οὗτοι τῶν πλατέων πρῶτον
others Come-to-be and earlier these than-the broad first
μὲν ὅτι καὶ τὸ ἔργον τὸ τούτων πρότερον (πρότερον γάρ
indeed because also the work the of-these earlier earlier for
ἐστι τοῦ λεᾶναι τὸ διελεῖν, εἰσὶ δ᾽ ἐκεῖνοι μὲν ἐπὶ τῷ
is than-the to-grind the to-divide are and those indeed for the
λεαίνειν, οὗτοι δ᾽ ἐπὶ τῷ διαιρεῖν), ἔπειθ᾽ ὅτι τὸ ἔλαττον,
grinding these and for the dividing then because the smaller
κἂν ἅμα ὁρμηθῇ, θᾶττον γίνεσθαι πέφυκε τοῦ μείζονος.
even-if together it-start faster to-come-to-be is-natural than-the greater
Εἰσὶ δ᾽ ἐλάττους οὗτοι τῷ μεγέθει τῶν γομφίων, καὶ τὸ
Are and smaller these in-the size than-the molars and the
ὀστοῦν τῆς σιαγόνος ἐκεῖ μὲν πλατὺ εἶναι, πρὸς δὲ τῷ
bone of-the jaw there indeed broad to-be at but the
στόματι στενόν. Ἐκ μὲν οὖν τοῦ μείζονος πλείω ἀναγκαῖον
mouth narrow From indeed then the greater more necessary
ἐπιρρεῖν τροφήν, ἐκ δὲ τοῦ ἐλάττονος στενωτέραν. Τὸ δὲ
to-flow-on nourishment from and the smaller narrower The and
θηλάζειν αὐτὸ μὲν οὐθὲν συμβάλλεται, ἡ δὲ τοῦ γάλακτος
to-suck itself indeed nothing contributes the but of-the milk
θερμότης ποιεῖ θᾶττον βλαστάνειν τοὺς ὀδόντας. Σημεῖον
heat makes faster to-sprout the teeth Sign
δ᾽ ὅτι καὶ αὐτῶν τῶν θηλαζόντων τὰ θερμοτέρῳ γάλακτι
and that also themselves of-the sucking-ones the hotter milk
χρώμενα τῶν παιδίων ὀδοντοφυεῖ θᾶττον· αὐξητικὸν
using of-the children teethe faster promotive-of-growth
γὰρ τὸ θερμόν. Ἐκπίπτουσι δὲ γενόμενοι τοῦ μὲν
for the hot Fall-out and having-come-to-be of-the indeed

βελτίονος χάριν, ὅτι ταχὺ ἀμβλύνεται τὸ ὀξύ· δεῖ οὖν
better for-the-sake because quickly is-blunted the sharp it-must then
ἑτέρους διαδέχεσθαι πρὸς τὸ ἔργον. Τῶν δὲ πλατέων οὐκ
others to-succeed for the work Of-the but broad not
ἔστιν ἀμβλύτης, ἀλλὰ τῷ χρόνῳ τριβόμενοι λεαίνονται
is bluntness but by-the time being-rubbed they-are-smoothed
μόνον. Ἐξ ἀνάγκης δ' ἐκπίπτουσιν, ὅτι τῶν μὲν
only From necessity and they-fall-out because of-the-ones indeed
ἐν πλατείᾳ τῇ σιαγόνι καὶ ἰσχυρῷ ὀστῷ αἱ ῥίζαι εἰσί,
in broad the jaw and strong bone the roots are
τῶν δὲ προσθίων ἐν λεπτῷ, διὸ ἀσθενεῖς καὶ εὐκίνητοι.
of-the but front in thin wherefore weak and easily-moved
Φύονται δὲ πάλιν, ὅτι ἐν φυομένῳ ἔτι τῷ ὀστῷ ἡ
They-grow and again because in growing still the bone the
ἐκβολὴ γίνεται καὶ ἔτι ὥρας οὔσης γίνεσθαι ὀδόντας.
shedding comes-about and still season being to-come-to-be teeth
Τούτου δὲ σημεῖον ὅτι καὶ οἱ πλατεῖς φύονται πολὺν
Of-this and sign that also the broad grow much
χρόνον· οἱ γὰρ τελευταῖοι ἀνατέλλουσι περὶ τὰ εἴκοσιν
time the for last rise-up about the twenty
ἔτη, ἐνίοις δ' ἤδη καὶ γηράσκουσι γεγένηται οἱ ἔσχατοι
years in-some and already even aging have-come-to-be the last
παντελῶς διὰ τὸ πολλὴν εἶναι τροφὴν ἐν τῇ εὐρυχωρίᾳ
completely because-of the much to-be nourishment in the roominess
τοῦ ὀστοῦ. Τὸ δὲ πρόσθιον διὰ τὴν λεπτότητα ταχὺ
of-the bone The but front because-of the thinness quickly
λαμβάνει τέλος, καὶ οὐ γίνεται περίττωμα ἐν αὐτῷ,
takes end and not comes-about residue in it
ἀλλ' εἰς τὴν αὔξησιν ἀναλίσκεται ἡ τροφὴ τὴν οἰκείαν.
but into the growth is-used-up the nourishment the own
Δημόκριτος δὲ τὸ οὗ ἕνεκα ἀφεὶς λέγειν, πάντα
Democritus and the of-which for-the-sake having-omitted to-tell all

ἀνάγει εἰς ἀνάγκην οἷς χρῆται ἡ φύσις, οὖσι μὲν
refers to necessity which uses the nature being indeed
τοιούτοις, οὐ μὴν ἀλλ' ἕνεκά τινος οὖσι, καὶ τοῦ
such not truly but for-the-sake of-something being and of-the
περὶ ἕκαστον βελτίονος χάριν. Ὥστε γίνεσθαι μὲν οὐθὲν
about each better for-the-sake So-that to-come-to-be indeed nothing
κωλύει οὕτω καὶ ἐκπίπτειν, ἀλλ' οὐ διὰ ταῦτα, ἀλλὰ
prevents so also to-fall-out but not because-of these but
διὰ τὸ τέλος· ταῦτα δ' ὡς κινοῦντα καὶ ὄργανα καὶ ὡς
because-of the end these but as moving and instruments and as
ὕλη αἴτια, ἐπεὶ καὶ τὸ τῷ πνεύματι ἐργάζεσθαι τὰ πολλὰ
matter causes since also the by-the breath to-work the many-things
εἰκὸς ὡς ὀργάνῳ· οἷον γὰρ ἔνια πολύχρηστά ἐστι τῶν
likely as by-instrument as for some much-used are of-the
περὶ τὰς τέχνας, ὥσπερ ἐν τῇ χαλκευτικῇ ἡ σφύρα καὶ ὁ
about the arts just-as in the smithing the hammer and the
ἄκμων, οὕτως καὶ τὸ πνεῦμα ἐν τοῖς φύσει συνεστῶσιν.
anvil so also the breath in the by-nature constituted
Ὅμοιον δ' ἔοικε τὸ λέγειν τὰ αἴτια ἐξ ἀνάγκης κἂν εἴ
Like and seems the to-tell the causes from necessity even if
τις διὰ τὸ μαχαίριον οἴοιτο τὸ ὕδωρ ἐξεληλυθέναι
someone because-of the knife should-think the water to-have-come-out
μόνον τοῖς ὑδρωπιῶσιν, ἀλλ' οὐ διὰ τὸ ὑγιαίνειν οὗ
only for-the dropsical but not because-of the to-be-healthy of-which
ἕνεκα τὸ μαχαίριον ἔτεμεν. Περὶ μὲν οὖν ὀδόντων, διότι
for-the-sake the knife cut About indeed then teeth why
οἱ μὲν ἐκπίπτουσι καὶ γίνονται πάλιν, οἱ δ' οὔ, καὶ
the-ones indeed fall-out and come-to-be again the-others but not and
ὅλως διὰ τίν' αἰτίαν γίνονται, εἴρηται. Εἴρηται δὲ
generally because-of what cause they-come-to-be it-has-been-said It-has-been-said and
καὶ περὶ τῶν ἄλλων τῶν κατὰ τὰ μόρια παθημάτων,
also about the other the according-to the parts affections

ὅσα	γίνεσθαι	συμβαίνει	μὴ	ἕνεκά	του	ἀλλ᾽	ἐξ
as-many-as	*to-come-to-be*	*happens*	*not*	*for-the-sake*	*of-something*	*but*	*from*

ἀνάγκης	καὶ	διὰ	τὴν	αἰτίαν	τὴν	κινητικήν.
necessity	*and*	*because-of*	*the*	*cause*	*the*	*moving*