

142a-c Herophilius [says] that one kind of motion is perceptible by reason, the other by the senses.

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143a Aëtius Doxographus, *Placita* 4.22.3 (*DG*, pp. 413-14)

143b Ps.-Plutarchus, *Placita* 4.22 (*Moralia* 903F-904B, vol. v.2.1 (Teubner), pp. 130-1 Mau)

'Ηρόφιλος δινόμεις ἀπολέπει περὶ τὰ σώματα τὰς κυνηγικὰς ἐν νεύραις, ἐν ἀρτηρίαις, ἐν μυσὶ· τὸν οὖν πνεύμαντα νομίζει μόνον ὄργανον διαστολῆς τε καὶ συστολῆς φυσικῶς. [Εἴτα δὲ καὶ τάλλα.] ἐνέργειαν μὲν <οὖν> εἶναι τοῦ πνεύμαντος τὴν ἔξιθεν

5 τοῦ πνεύματος ὅλην. ὑπὸ δὲ τῆς πληρώσεως τῆς θύραθεν γινομένης ἐφέκεται παρακεμψων δὲ διὰ τὴν διευτέρων ὅρεων ἐφ αὐτὸν ὁ θώραξ τὸ πνέμα μετοχεύει, πληραθεὶς δὲ καὶ μηκέτι ἐφέκεται δινόμειος πάλιν εἰς τὸν πνεύμαντα τὸ περιττὸν ὁντιμεταρρεῖ, δι’ οὗ πρὸς τὰ ἕκτος τὰ τῆς ἀποκρισεως γίνεται, τῶν συμπτικῶν μερῶν διντιπασχόντων ἀλλήλοις. ὅτε μὲν γάρ διαστολή, <ὅτε δὲ συστολή>, > γίνεται πνεύμαντος, ταῖς

10 ἀλλήλαις διπλασιαὶ διέψευσι πληρώσεως τε καὶ κενώσεως γινομένης, ὡς πέσσαρες μὲν γίνεσθαι κυνήσεις περὶ τὸν πνεύμαντα, τὴν μὲν πρώτην καθ’ ἣν ἔξιθεν ἀρέτη δέκεται, τὴν δὲ διευτέρων

15 καθ’ ἣν τουθ’ στρεψάται θύραθεν ἑντος αἵτου πρὸς τὸν θώρακα μεταφερεῖ, τὴν δὲ τρίτην καθ’ ἣν τὸ ἄπο τοῦ θώρακος συστελλόμενον αὔθις εἴς αὐτὸν ἐκδέκεται, τὴν δὲ τετάρτην καθ’ ἣν τὸ ἔξι ὑποστροφῆς ἐν αὐτῷ γινόμενον θύρασες ἔξερῆται. τούτων δὲ τῶν κινήσεων δύο μὲν εἶναι διαστολῆς, τὴν τ’ ἔξιθεν τὴν τ’ ἄπο

20 τοῦ θώρακος δύο δὲ συστολές, τὴν μὲν ὅταν αὐτὸς εἰς τὸν ἕκτος δέρει πενεματικὸν ἔλικται, τὴν δὲ συστολής, τὴν δὲ ὅταν αὐτὸς ὁ θώραξ δέρει

ἀποκριντῇ δύο γίνονται περὶ τὸν θώρακα διαστολή διπλῶν δινταποδιδιδόν.

² μόνον codd.: πρῶτον *Diels* 3-4 εἴτα δὲ καὶ διλα. *E*: εἴτα δὴ τὰ διλα

B: *del. Diels* δὲ... πνεύμονες *om. M* 4 οὖν *suffl. Diels sc.*

Galen. 6 ἐφέκεται codd.: <ἐπειδὸν μηκέτι> ἐφέκεται, *vel* παραστα-

οντι. *Mau Galeno (ΤΙ 43) collato, fuit recte* 6 παρακεμψων .. ὅρεων

del. Mau ut glossema 6 περικείμενος *om. Mau* 7 ἐπ’ αὐτὸν *MP*

7 μετοχεύειν *MT* 9 ὀντελετερῆ *omi. Bernardakis* 11 δῆτε δὲ
συστολή *add. Diels* 11 πνεύματος *B* 13 μὲν *del. Reiske*

¹⁵ ἐπτὸς] ἐπτὸς *omi. Bernardakis* 16 μετοχεύειν *M*: μετερῆ

Bernardakis 17 τὸν αὐτὸν *B* δην καὶ τὸ *Π* 18 γερόπον

MB 20 δὲ *om. M* 21 ὑπ’ αὐτὸν *BTI*: δην αὐτὸς *M*: *corr. Diels*

21 ἐπτὸς] κόλπον *Π* 23 ταῦτο *MB*: αὐτὸς *AE: corr. Diels*

3 Respiration

143a-b Herophilus admits motor capacities for bodies in the nerves, arteries, and muscles. He thinks that the lung alone has a natural tendency to dilate and contract. The drawing in of pneuma from outside, he says, is accordingly the activity of the lung, and it draws it

in through the repletion which occurs without. Next, on account of a second [natural] tendency, the thorax diverts the pneuma to itself, and when it is filled and no longer capable of drawing it in, it lets the excess flow back again into the lung, through which the exhalation of what is excreted occurs. The parts of the body are thus affected in turn. For now dilation, then contraction of the lung occurs, since filling up and emptying occur through reciprocal exchange, so that four motions in fact occur in the lung: the first is the one by which it receives air from outside; the second by which the pneuma which it has received from outside changes its flow internally toward the thorax; the third by which it receives again into itself the contracted pneuma from the thorax; the fourth by which it evacuates to the outside that which is in it after rounding the turn. Of these motions of the lung, he says, two are dilations – the one from outside and the one from the thorax – while two are contractions, namely one when the thorax draws the pneumatic substance to itself, the other when the lung itself excretes pneuma into the external air. Only two motions, you see, occur in the thorax: dilation when it draws pneuma from the lung, contraction when it delivers it back again to the lung.

143c Ps.-Galenus, *De historia philosopha* 103 (*DG*, p. 639)

'Ηρόφιλος δὲ δίνακιν ἀπολέπει περὶ τὰ σώματα κυνηγικὴν ἐν νεύραις καὶ ἐν ἀρτηρίαις καὶ μυσὶ· τὸν οὖν πνεύμαντα νομίζει προσορέγεσθαι διαστολῆς τε καὶ συστολῆς φυσικὴν ἐνέργειαν μὲν οὖν εἶναι τοῦ πνεύμαντος τὴν ἔξιθεν τοῦ πνεύματος ὅλην, 5 μέτρο δὲ τῆς πληρώσεως τῆς ἔξιθεν γινομένης ἐφέλκεσθαι μὴ δινόμειον, εἰς τὸν θώρακα τὸ περιττὸν διαπέμψαι, τὸν δὲ τὸν ἔξιθεν ἀρέτη διπλαθεῖν.

- 1 δύναμιν οὐκ. *B* ὀποδείπεπτον *A* 2 γεῦν *B* 3 προσοργεύεθαι *A*:
 προσοργεύεθαι *B* 3 in φυσικὴν latere φυσικὸς οὐκ. *Diel.* 4 οὖν εἴη
Diel. συνέντι *AB* 5 διπλὸν *B* γυνόμενον *AB* 7 ποστ μπωθεῖν
 κυήσεις αὔξει ad ὄγρα τούτη πρόχιν ἀνταποδιδῷ (*T143a-b.13-24*)

143c Herophilus admits a motor capacity for bodies in the nerves, arteries, and muscles. He accordingly thinks the lung has an additional tendency to dilate and contract. The natural activity of the lung, he says, is, then, the drawing in of pneuma from the outside; but when a repletion from outside occurs and the lung is not able to draw in [more pneuma], it sends on the excess into the thorax, and it expels it into the external air.

4 Vascular physiology; pulse-lore ('On Pulses')

- 144 Galenus (ex Aristoxeno?), *De pulsuum differentiis* 4.6 (viii, p. 733K)

τοῖς δὲ περὶ τὸν Ἡρόφιλον ὀρέσκει τὸς ἀρτηρίας συνεχεῖς οὖσας τῇ καρδίᾳ διὰ τῶν χιτῶνων ἐπιτρέψουσαν ἔχειν τὴν παρα- αὐτοῖς δύναμιν, ἢ χρώμενα παραπλήσιως αὐτῇ τῇ καρδίᾳ διστελλόμενα μὲν ἔλκουσι πανταχόθεν, διθενὲν δὲ δύναματα, τὸ καὶ διὰ τοῦτο φαίνεθαι καθ' ἓντα χρόνον ἀμα πάσας αὐτοῖς διστελλομένας τε καὶ συστελλομένας, τὴν κατῆν προθεσμίαν τῇ καρδίᾳ τὸν κινήσεων ἀμφοτέρων φιλαπτούσας.

144 Herophilus and his followers hold the opinion that the arteries are continuous with the heart and that they have a faculty that flows to them through their coats. Using this faculty they dilate in a manner similar to the heart itself and draw, from everywhere they can, that which will fill their dilation; but when they contract, they expel it. For this reason all of the arteries are observed to dilate at one and the same time and to contract [simultaneously], preserving for the heart the same fixed time for both motions.

145a Consequently, whenever [Erasistratus and his followers] are at a loss to explain how – if the arteries are filled with blood – pneuma will be carried from the heart to the entire body, it is not difficult to solve their problem by saying that the pneuma is not ‘sent’ but ‘drawn’, and not from the heart alone but from everywhere, as Herophilus thought, and before him Praxagoras, Phyloitus, Dione, Pistonius, Hippocrates, and countless others. All the aforementioned men agree, however – and it has been demonstrated elsewhere by me – that the heart is something like a source of the faculty which dilates the arteries.

6 φιλοτίκῳ LV Aldus: Φιλοτίκῳ Kühn, Furley/Wilkie: corr. Wellmann post quem Albrecht (cf. Diller, 1941: 1020) 9 τε om. V Aldus

- 145b Galenus, *De sententiis*, ed. V. Nutton (CMG, in preparation)

Et sicut non refert apud medicum in medicando egritudines utrum anima sit mortalis aut immortalis, ita etiam non refert utrum anima sit incorporea prout vult aut sit corporeaa prout vult, cum iudicavit quod substantia anime sit spiritus, et non manifestavit, prout manifestavit Erasistratus, utrum spiritus anime contineatur in corporibus animalium in concavitatibus vel expandatur per omnia membra radicalia vel dividatur in minutis partibus prout voluit Herophilus, dicens quod sit in unaquaque parte partium membra radicalis, ita quod nulla pars

145a Galenus, *An in arteriis natura sanguis continetur* 8 (pp. 18-19

Albrecht; 176-8 Furley/Wilkie)

³ Herophilus *com. Nutton*: Eleniophilus et similia coll.

154 Galenus, *De pulsuum usu* 4 (v, pp. 163-4K; pp. 208-10 Furley/Wilkie)

Furley/Wikie

ପ୍ରକାଶ କିମ୍ବା ଗୋଟିଏକା କିମ୍ବା ଅଧିକ ପରିମା ପାଇଁ ଯେତେବେଳେ କିମ୍ବା ଅଧିକ ପରିମା ପାଇଁ ଯେତେବେଳେ

ταύτης δε τῆς διατίξεως καὶ συνθέτου τῶν ἀριτρῶν κινήσεως, οἷς δὴ καὶ σφυγμὸν διαπιέζομεν· ἐν γενεῖσα μὲν ή καρδίᾳ, καθόπερ καὶ ἡμῖν ἐν ἔρεσις καὶ μεριός διλοις πρὸ τῆμάν διπορθεῖκται, οὐ μην καθ' ὃν Ἐρασίστρατος ὑπελέκμιθεν τρόπου, ἀλλ' ὡς Ἡρόφιλός τε καὶ Ἐπιποκράτης καὶ σχεδὸν οἱ δοκιμώτατοι πάντες τῶν παθαῖδων ιατρῶν τε καὶ φιλοσόφων.

³ πρὸς ἡμῖν S: πρὸς ἡμῖν Ald: corr. Kühn (ante nos *Linaci interpretatio*)

154 This double, compound motion of the arteries, to which, of course, we also give the name 'pulse' (*sphygmos*), is governed by the heart, as has been demonstrated both by me in my other works and by countless others before me — I do not mean the way in which Erasistratus assumed that it happens, but the way Herophilus as well as Hippocrates and almost all very reputable ancient physicians and philosophers assumed it happens [sc. the *dynamis* in the body of the heart, by which it expands and contracts, flows out through the arterial coats to all the arteries, expanding and contracting them].

155 Galenus (ex Aristoxeno?), *De pulsuum differentiis* 4.2 (viii, pp. 702–3K)

Ἔτι δὲ μετέκειναν οὐληταὶ διαφορὰς ἔχει παλαιότερού περὶ τῶν ἀρτηριῶν ἐγένετο, τινῶν μὲν γήγενειναν αὔτας ἐξ ἑστατῶν σφράγειν, τύμφων ἐκούσας οὐοίως τῇ καρδίᾳ τῆς ποιεῖται σύναυμιν, ὃν ἔστι καὶ οἱ Πραξειδιγόρες, ἐνίων δὲ σφράγειν μὲν αὐτοῦ τοῦ χιτῶνος αὐτῶν διαστελλομένου τε καὶ συστελλομένου, καθάπερ τὴν καρδίαν, τὴν δύναμιν δὲ οὐκ ἐκουσαῖν τύμφων τῇ τοῦτο δραστιν, διὰλα παρὰ καρδίας λαμβανομένων. τῆς γηράτης ἔχεται καὶ Ἡρόφιλος. Ἐρεστοπάτρῳ δὲ οὐδὲν ερεψον δρέσκει. . .

5 post auctōū interpretat Kühn 7 καρδίας *ABL*: καρδίαν *vulg.*

155 A still bigger difference arose among physicians of ancient times concerning the arteries. Some, among them also Praxagoras, thought that the arteries pulsate by themselves, possessing – like the heart – an innate faculty of such a kind. Others, by contrast, thought that while they pulsate because the arterial coat itself dilates as well as contracts,

156 Galenus (ex Aristoxeno?), *De pulsuum differentiis* 4.10 (viii.
n. 744K)

P. 14412

τῷ δὲ οὐ πόδι ζωτικῆς καὶ ψυχής δινάμεως γίνεσθαι τὸν σφυγμὸν ὑπὸ Χρυσέρμου λελεγμένῳ προσέθηκεν ὁ Ἡρακλεῖνος τὸ πλειστὸν μακριόντος, ἐπειδὴ καὶ ἀλλα τινὰ συντελεῖν εἰς τὴν τῶν σφυγμῶν γένεσιν ὁ Ἡρόφιλος αὐτὸς φησι καὶ πάντες οἱ ἀπὸ αὐτοῦ κατηθέντες Ἡροφίλειοι. (*Vid. infra HE.2a; Cr. I-2; Caput*
5 *x.A.)*

156 To what was said by Chrysosermus, namely that the pulse arises through the agency of a vital and psychic faculty, Heracides added 'which is dominant', since Herophilus and all those who are called 'Herophileans' after him say that other things, too, contribute to the generation of the pulses. (*See Chapters x.A, xxx.A, xxv.A infra.*)

157 Galenus (ex Aristoxeno?), *De pulsuum differentiis* 4.10 (viii, pp. 747-8K)

ολλάσ τὰ μὲν τουμέντα πρὸς τοὺς ἄλλους ἐπέρων αἰρέσεων ἀμφισθή-
ται καὶ τούτῳ καὶ τοῖς ὅλοις. Ἡροφίλειοι, αὐτῷ δὲ τῷ
‘Ἡροφίλῳ φαίνοται’ ἀνδισφερόμενος ἐν τῷ τὸν σφυγμὸν ἐνέργειαν
μὲν εἶναι νομίζειν ἀρτηριῶν καὶ καρδιᾶς, μέρη δὲ αὐτῷ πειθεῖσθαι
τὴν διαστολὴν τε καὶ συστολὴν καὶ ποτε καὶ τὸν ἡρεμίαν, ἔχειν
γάρ ἀκριβῆς ἁπαγα τοῖς ‘Ἡροφίλου δόγμασιν’, οἱ συστολὴ μὲν
ἐνέργεια τῶν ἀρτηριῶν ἔστιν, οἱ διαστολὴ δὲ εἰς τὴν οἰκεῖαν τε καὶ
φυσικὴν κατάστασιν τοῦ σώματος αὐτῶν ἐπανιδιός. βιούμετα
γάρ, δῶσαρ ἔπι τῶν τεθνεώτων ὄρθρα διεστάς ὁ Χιτὼν τῆς
ἀρτηρίας, οὕτω κάπι τῶν γεννητῶν δοσιν ἐφ' ἑωρᾶ διεστάναι.
τούτους. Ἀπληπαρέσσου διδάσκωντας.

¹⁵⁷ Both he [Aristoxenus; *Chapter xxv*] and the other Herophileans argue about such points [pulse definitions] against adherents of other

just like the heart, it is not because they possess an innate faculty by means of which they do this, but rather because they receive [this faculty] from the heart. To this judgment Herophilus, too, adhered.