

## THE CAREER OF ERASISTRATUS OF CEOS

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(Adunanza del 26 giugno 1969)

SUNTO. — L'Autore discute l'opinione corrente degli storici della medicina greca secondo la quale il grande medico di età ellenistica Erasistrato di Keos avrebbe insegnato ed esercitato ad Alessandria nel III sec. a. C. Egli dimostra che le scarse fonti letterarie ci fanno propendere piuttosto per l'idea che Antiochia sull'Oronte sia stata il centro della sua attività, e che là ancora in epoca posteriore abbiano avuto sede i suoi seguaci. L'ipotesi di una sua attività in Alessandria è conseguenza di una arbitraria interpretazione di passi di Galeno e di altre fonti antiche. Entro l'ambito del suo tema egli discute altri problemi connessi con la storia medica del III secolo, specialmente le carriere dei Crisippi, la nota famiglia enidia di medici del IV e degli inizi del III secolo a. C., un membro della quale fu il maestro di Erasistrato.

The purpose of this paper is to re-examine an old problem which at one time gave rise to many ingenious combinations and conjectures, but which has remained undisturbed for many years, and since the view commonly accepted at present, that Erasistratus was active as a teacher of medicine in Alexandria, seems to be repeated without independent investigation, and is, if not demonstrably wrong, at least unjustified by the evidence, a new investigation, even though it brings no new evidence to bear on the problem, may be of value. Moreover the career of Erasistratus has an interest beyond the merely biographical, because if his main, or only, place of activity was, as has been claimed, and, I believe, rightly claimed, Antioch in Syria, it also provides us with one point of focus for the intellectual activity of the Seleucid capital, in the same way that the career of Euphorion does in the field of literature, and, later, the Epicurean philosophers do for philosophical studies; and such focal points are singularly few in the

cultural history of Antioch. A recent, and wholly fanciful, attempt to bestow an Alexandrian background on Euphorion serves as a warning of the ease with which the capital of Egypt can be made to usurp an overall monopoly of culture in the Hellenistic age <sup>(1)</sup>.

The reader of modern general histories of ancient medicine, and of the relevant articles in encyclopaedias, finds that Erasistratus is almost invariably described as an Alexandrian, and that he and Herophilus are regarded as the twin glories of Alexandrian medicine in the third century B.C.; and that consequently the theories and achievements associated with both names are set to the credit of their Alexandrian background <sup>(2)</sup>. Opinion has not, however, always been of one accord on this point. Well over a century ago W. A. Greenhill, the deeply learned and sympathetic student of Greek medicine (1814-1894), whose contributions to Greek medical history retain most of their value to-day, attributed some at least of Erasistratus' active life to Antioch <sup>(3)</sup>, and in 1891, the most authoritative historian of Hellenistic literature, Susemihl, wrote that there was nothing to connect Erasi-

<sup>(1)</sup> I refer to P. TREVES' *Euforione e la storia ellenistica* (Milan, Naples, 1955); cf. *Gnomon*, 28, 1956, pp. 578-586.

<sup>(2)</sup> See e.g. SARTON, *History of Science*, II, Hellenistic Science and Culture in the last three cents. B. C. (Cambr. Mass, 1959), pp. 129 ff., *passim*; EDELSTEIN, *Oxford Class. Dict.* s. v. Erasistratus; 'physician lived in Alexandria together with and after Herophilus'; F. K(UDLIEN), *Lexikon d. Alten Welt*, s. v.; 'In der Anatomie machte er — wie Herophilus bes. begünstigt durch die unbegrenzte Möglichkeiten zum Sezieren in Alexandria — wichtigste Entdeckungen...'; REHM-VOGEL, GERCKE-NORDEN, *Einleitung*, II, 2<sup>a</sup> (1933), p. 58: 'Die Medizin erreicht in dieser Zeit ihre höchste Stufe, und zwar in Alexandria, wo die beiden bedeutendsten Ärzte wirkten, Herophilus unter Ptolemaios I, der — wohl etwas jüngere — vielseitig ausgebildete Erasistratos unter Ptolemaios II'. Singer eventually (SINGER and UNDERHILL, *History of Medicine*<sup>2</sup>, 1962, p. 49) forgot that Erasistratus was from Ceos, and described him as of Chios; the same error occurs also in L. G. WILSON's article, *Bull. Hist. Med.* 33, 1959, pp. 293 ff., 'Erasistratus, Galen and the *Pneuma*', p. 297, 'Erasistratus of Chios, the younger contemporary of Herophilus at Alexandria'. In GAL. xiv, 683, the MSS have *Xios*, but this is naturally emended.

<sup>(3)</sup> See SMITH's *Dict. Class. Biogr.* (1849), s. v., pp. 42-3: Erasistratus 'lived for some time at the court of Seleucus Nicator... (43) Very little more is known of the personal history of Erasistratus; he lived for some time at Alexandria, which was at that time beginning to be a celebrated medical school...'. For GREENHILL see *DNB*, Supp. I (1922), s. v.

sistratus with Alexandria (<sup>4</sup>). The same view was maintained by Beloch in both the first and second editions of his Greek History (<sup>5</sup>). Why, then, has the opposite view largely prevailed?

As so often in the study of Greek medical history, the accepted view is largely due to Max Wellmann, whose remarkable erudition often successfully baffled criticism, and whose tendency to change his views very considerably, at times without reference to his earlier ones, can cause confusion. Wellmann, in 1900, argued that Erasistratus' supposed connection with Antioch and the Seleucids was chronologically impossible, and that, like Herophilus, he practiced and taught in Alexandria (<sup>6</sup>). He subsequently revised his views, both in his article on Erasistratus in *RE* in 1907 (<sup>7</sup>), and again in 1930 (<sup>8</sup>). His first article convinced Susemihl that his own arguments on this particular point were wrong (<sup>9</sup>), and he thereupon adopted the view of Wellmann. At a later date J. F. Dobson, in his valuable analysis of the main fragments of Erasistratus (1927), also followed Wellmann: 'Tradition points to the conclusion that he was living and working in Alexandria at about the same time as Herophilus, of whom perhaps he was a slightly younger contemporary' (<sup>10</sup>). During all these years only Beloch seems to have retained an independent position, and to have emphasised the Seleucid connections of Erasistratus. This brief survey of the history of the controversy shows that the contradictions in the ancient evidence are not easily to be reconciled, and the first task must be to set out that evidence.

(<sup>4</sup>) See *Gesch. gr. Lit. Hellen. Zeit*, i, p. 800, note 129: 'Dass E. aber vielmehr in Alexandria (neben Herophilos) gewirkt habe, schreibt völlig willkürlich immer ein Historiker der Medizin dem anderen nach... Der einzige Rosenbaum a.a.O [art. Erasistratos in Ersch and Gruber] hat der Muth und die wissenschaftliche Gewissenhaftigkeit gehabt zu bemerken, dass auch nicht die Spur eines Zeugnisses dafür vorhanden ist, und innere Gründe, welche diesen Mangel ersetzen könnten, sind bisher von niemandem beigebracht; man scheint einfach von dem unrichtigen Glauben ausgegangen zu sein, als wäre notwendig jeder bedeutende Mann in der damaligen Zeit nach Alexandria gezogen'. The rest of his long note develops the argument that E. was active in Antioch.

(<sup>5</sup>) *GG*, iii, 2 (1904), pp. 473 ff. esp. p. 474; *ibid.*<sup>2</sup>, iv, 2 (1927), pp. 564-5.

(<sup>6</sup>) *Hermes*, 35, 1900, pp. 371 ff., esp. pp. 379-382.

(<sup>7</sup>) *RE*, s. v. Erasistratos (2), cols. 333-350.

(<sup>8</sup>) *Hermes*, 65, 1930, pp. 322 ff., esp. pp. 327-8.

(<sup>9</sup>) *Rh. Mus.* 56, 1901, pp. 313-318.

(<sup>10</sup>) *Proc. Roy. Soc. Med.* 20 (4), 1927, pp. 825 ff.

The only continuous source available for the life of Erasistratus is the biographical entry in the *Suda-Lexicon*, which it is necessary to have in mind to follow the various reconstructions proposed for his life.

T1. Ἐρασίστρατος Ἰουλίτης, ἀπ' Ἰουλίδος πόλεως Κέου τῆς νήσου. χρηματίζει οὖν Κήτιος, υἱὸς Κορητοξένης, τῆς Μηδίου τοῦ ἰατροῦ ἀδελφῆς, καὶ Κλεομβρότου· οὗτος Ἀντίοχον τὸν βασιλέα νοσοῦντα ὑπὸ τοῦ τῆς μητρονίης Στρατονίης πόθου ἴασατο, εὐρών τὸ πάθος ἐκ τοῦ σχεῖν τὴν χεῖρα ἐπὶ τὴν καρδίαν αὐτοῦ καὶ τὸν παλμὸν συνεικάσαι. ὁσάκις γὰρ ἔβλεπεν ὁ Ἀντίοχος τὴν μητρονίαν αὐτοῦ τυχὸν διερχομένην, ἐπάλλετο τὴν καρδίαν μάλιστα τῷ ταύτης ἔρωτι. τέθαιπται δὲ πρὸς τῷ ὄρει τῆι Μυκάλῃ κατανικρὸν Σάμου. ἔγραψε ἰατρικὰ βιβλία θ'.

This we may translate as follows: 'Erasistratus, the Iuliete, from Iulis on the island of Ceos. He therefore passed under the title of Ceon. He was the son of Cretoxene, sister of the physician Medias, and Cleombrotus. He (i.e. Erasistratus; see below) cured Antiochus the king, who was sick through desire for his step-mother, Stratonice, discovering the sickness by laying his hand on the king's heart and estimating the pulse. For as often as Antiochus saw his stepmother casually passing by, his heart leaped, precisely because of love for her. He is buried by the mountain of Mycale, opposite Samos. He wrote nine medical books'.

Of this outline the story regarding Antiochus presents a chronological difficulty considered below, and the statement that he was buried on Mt. Mycale seems to be an error caused by homonymity <sup>(11)</sup>.

Erasistratus himself, as reported by Diogenes Laertius, provides another biographical item.

T2. Diogenes in his list of various Chrysippi (vii, 186) says: γέγονε δὲ καὶ ἄλλος Χρύσιππος, Κνίδιος ἰατρός, παρ' οὗ φησὶν Ἐρασίστρατος εἰς τὰ μάλιστα ὠφελησθαι. καὶ ἕτερος υἱὸς τοῦτον, ἰατρός Πτολεμαίου, ὃς διαβληθεὶς περιήχθη καὶ μαστιγούμενος ἐκολάσθη. ἄλλος μαθητὴς Ἐρασιστράτου καὶ τις Γεωργικὰ γεγραφώς.

<sup>(11)</sup> See BELOCH, *loc. cit.*, who called attention to the fact that Ps. SCYLAX, 98, already referred to a site named Ἐρασιστράτιος in the Samian Peraea: Ἄναια, Πανιώνιον, Ἐρασιστράτιος, Χαροδροῦς, Φωκαία, Ἀκαδαμίς, Μυκάλῃ ἐν τῆι Σαμίῳν χώραι ταῦτά ἐστιν. MÜLLER, *ad loc.*, thought that the name might be derived from some ancestor of Erasistratus, who is called a Samian by Julian, *Misop.* 347 (cf. SUSEMHL, i, *loc. cit.*) in recounting the story of Antiochus' love for Stratonice: ἐνθάδε μέγας ἄθλιος ἰατρῶι προσιέθη τῷ Σαμίῳι τὴν νόσον, ἧτις ποτε ἐστιν, ἐξευρεῖν.

'And there was another Chrysippus, a Cnidian doctor, from whom Erasistratus says he derived the greatest profit. And there was another, the son of this one, a physician of Ptolemy, who, having been informed against, was carried about as a prisoner, and was punished by flogging. And another was a pupil of Erasistratus, and yet another wrote a book on agriculture'.

Cf. also Gal. xi, 171: ἐνταῦθα μὲν γε φορητικῶς ἰκανῶς ἐπαινῶν (sc. ὁ Ἐρρασίστρατος) τὸν διδάσκαλον Χρῦσιππον, ὡς ἐξευρόντα βοήθημα μηδενὶ τῶν ἔμπροσθεν ἐγνωσμένον, κ. τ. λ.

T3. Plin. *NH*, xxix, 5, adds a further detail: horum (the early practitioners of medicine) placita Chrysippus ingenti garrulitate mutavit plurimumque et ex Chrysippo discipulus eius Erasistratus Aristotelis filia genitus. hic Antiocho rege sanato c talentis donatus est a rege Ptolemaeo filio eius, ut incipiamus et praemia artis ostendere.

'Changes in their doctrines were made, in a flood of verbiage, by Chrysippus, and a great many changes were also made in the doctrines of Chrysippus by his pupil Erasistratus, the son of Aristotle's daughter. Erasistratus cured King Antiochus and received a hundred talents on that account from his son Ptolemy, to begin my descriptions of the prizes accruing from the profession'.

The relationship of Erasistratus with the various persons, all physicians, named Chrysippus, is one of the major problems connected with his life, and it will be of assistance if I add here the various passages relevant to them.

T4. Diog. Laert. in his *Life of Eudoxus* (viii, 87-90; Lasserre, *Die Frag. des Eudoxos*, Berlin, 1966, T7), says (§ 89): τούτου διήκουσε Χρῦσιππος ὁ Ἐρινέω Κνίδιος τὰ τε περὶ θεῶν καὶ κόσμον καὶ τῶν μετεωρολογουμένων, τὰ δὲ ἰατρικὰ παρὰ Φιλιστίωνος τοῦ Σικελιώτου. Κατέλιπε δὲ καὶ ὑπομνήματα κάλλιστα. τούτου γέγονε παῖς Ἀρισταγόρας, οὗ Χρῦσιππος Ἀεθλίον μαθητής, οὗ τὰ θεραπεύματα φέρεται ὄρατικά, τῶν φυσικῶν θεωρημάτων [τῶν] ἐπὶ τὴν δianoian αὐτοῦ πεσόγτων.

'Chrysippus, the son of Erineus, the Cnidian, learnt from Eudoxus about the Gods and the Universe and the heavenly bodies, and from Philistion the Sicilian regarding medicine. And he also left many excellent commentaries. His son was Aristagoras, who had a son Chrysippus, the pupil of Aethlius, whose ophthalmic remedies are known, natural speculations having occupied his attention'.

T5. In the same *Life* (§ 87; Lasserre, *ibid.*) we are told that Eudoxus when a young man journeyed to Egypt with Chrysippus, the

physician, having an introduction to Nectanebos II: *δύο δὴ μῆνας διατρίψαντα οἴκαδ' ἐπανελθεῖν καὶ πρὸς τῶν φίλων ἐρρασιθέντα εἰς Αἴγυπτον ἀπάραι μετὰ Χρυσίππου τοῦ ἰατροῦ, συστατικὰς φέροντα παρ' Ἀγησιλάου πρὸς Νεκτάναβιν.*

' [It is recorded by Sotion that] after remaining (in Athens) two months he returned home, and with funds provided by his friends sailed to Egypt with Chrysippus the physician, bearing introductory letters from Agesilaus to Nectanebos'.

T6. Schol. Theocr. xvii, 128 (p. 324, Wendel, whose text I print), describes the alleged conspiracy of Arsinoe I and her associates against Philadelphus in the early years of his reign thus: *Πτολεμαῖοι τῶι Φιλαδέλφῳ συνώικει πρότερον Ἀρσινόη ἢ Λυσιμάχου, ἀφ' ἧς καὶ τοὺς παῖδας ἐγέννησε, Πτολεμαῖον καὶ Λυσιμάχον καὶ Βερενίκην. ἐπιβουλευούσαν δὲ ταύτην εὐρών καὶ σὺν αὐτῇ Ἀμύνταν καὶ Χρυσίππον τὸν Ῥόδιον (?) ἰατρον, τοίνους μὲν ἀνεῖλεν, αὐτὴν δὲ ἐξέπεμψεν εἰς Κόπτον τῆς Θεβαίδος καὶ τὴν οἰκείαν ἀδελφὴν Ἀρσινόην ἔγημε καὶ εἰσεποιήσατο αὐτῇ τὰς ἐκ τῆς προτέρας Ἀρσινόης γεννηθέντας αὐτῶι παῖδας· αὕτη γὰρ ἡ Φιλαδέλφος ἄτεκνος ἀπέθανεν.*

' Arsinoe, the daughter of Lysimachus, was the first wife of Ptolemy Philadelphus, and was the mother of his children, Ptolemy, Lysimachus and Berenice. But having discovered her in a conspiracy against him, along with Amyntas and Chrysippus the Rhodian, a physician, he killed her accomplices, and sent her away to Coptos in the Thebaid, and married his uterine sister Arsinoe, and gave her by adoption the children borne to him by the previous Arsinoe; for she who was named Philadelphus died without issue'.

The main chronological problem presented by the evidence regarding Erasistratus lies in the impossibility of reconciling (a) the data about the Chrysippi, (b) the data about about Antiochus I and (c) the absolute dates given for the 'floruit' of Erasistratus by Eusebius. These three sets of data are in varying degrees relevant to the question whether or not Erasistratus was active in Alexandria.

Eusebius and Jerome report the *floruit* under 01.130,3 (Euseb.) and 4 (Jer): Erasistratus medicus agnoscitur<sup>(12)</sup>. This date, 258/7, if it represents his acme, would make Erasistratus a slightly younger

(<sup>12</sup>) So Jerome (p. 131, HELM); Euseb. Armen. is rendered (KARST, p. 200) as 'Erasistratos war als berühmter Arzt gekannt'. For Syncellus' version see below note 49.

contemporary of Herophilus, who was active in the reign of Ptolemy Soter, but was apparently still alive in the seventies of the third century <sup>(13)</sup>.

First and foremost we must recognize that if the acme of 258/7 is correct, then the story of the cure of Antiochus I, which, told in its most circumstantial form, is dated to 293 B.C., can hardly stand. Erasistratus appears in that story as court-physician of Seleucus I, and he can hardly have held that post nearly forty years before his recognized acme. The story can only be accommodated to the Eusebian date on the assumption that it does not refer to him at all (but, e.g., to his father), or that the king is wrongly identified.

Furthermore, with regard to the third point, the links with the Chryssippi, if the Eusebian date is correct it must follow that Erasistratus was the pupil of one of the two doctors of that name who are 3 and 4 in the list below. To make this point clearer we may consider the Chryssippi as a separate unit.

The years of activity of the various Chryssippi with whom we are concerned fall between the extreme limits of the youth of Eudoxus and the second marriage of Philadelphus, in all approximately one hundred years, during which they evidently played a leading role in Cnidian medicine. Diog. Laert. in his Life of Eudoxus quotes Apollodorus as his authority for placing the 'acme' of Eudoxus in the 103rd. Olympiad (368-364 B.C.), and states that he died at the age of fifty-two. On that very trustworthy evidence we might put his birth at ca. 400 B.C. and his death at ca. 348 B.C. <sup>(14)</sup>. On the other hand Pliny states that Eudoxus took the death of Plato as a terminal point of reckoning in his calculation of the date of Zoroaster <sup>(15)</sup>, and if this comes from

<sup>(13)</sup> For Herophilus' dates see FRASER, *Ptolemaic Alexandria* (forthcoming) p. 348, with notes.

<sup>(14)</sup> LASSERRE, *op. cit.*, pp. 137-8, gives a survey of the various attempts to fix Eudoxus' chronology; cf. next note.

<sup>(15)</sup> *NH*, xxx, 3 (F 342 LASSERRE): *Eudoxus, qui inter sapientiae sectas clarissimam utilissimamque eam (sc. magicam) intellegi voluit, Zoroastren hunc sex milibus annorum ante Platonis mortem fuisse prodidit; sic et Aristoteles* (fr. 34, ROSE). LASSERRE (pp. 138, 254) regards this statement as of cardinal importance for the determination of Eudoxus' chronology, but I find JAEGER's argument, *Aristotle*<sup>2</sup>, p. 136, note 2, that this is simply a way of saying '6,000 years before Plato' (cf. *Schol. Plat. Alcib. I*, 122 A, Ζωροάστρου ἀρχαιότερος ἑξακισχίλιος ἔτεσιν εἶναι λέγεται Πλάτωνος), persuasive, though Lasserre points to difficulties in it.

a reliable source we must set his death after 347. Certainty is not possible, and in any case the difference between Apollodorus' date and those implied by Pliny might be very slight. The aberrant dates offered by Eusebius, according to which his acme fell either in 423/2 or in 391/0, are too early for serious consideration (<sup>16</sup>).

The date of the birth of Chrysippus, the son of Erineus, cannot be calculated independently of the statement (T4) that he heard the lectures of Eudoxus. One would like to identify him with the Chrysippus who travelled with Eudoxus to Egypt in the reign of Nectanebo (reigned 380-363), since he too is described as a doctor (T5); but since Eudoxus was a young man when he made the journey, and had not yet begun lecturing, this is not very probable. Again, it is not impossible that the pupil of Eudoxus, the son of Erineus, was the teacher of Erasistratus, but if he was, then he is hardly likely to be the same Chrysippus who travelled to Egypt with Eudoxus. It is more likely that he is his son. Finally, the conspirator, described, erroneously perhaps, in one text (T6), as a Rhodian (<sup>17</sup>), was the son of this teacher of Erasistratus (T2), and thus the contemporary of the latter. The following list provides a possible scheme of identification and distinction:

- |                          |   |                     |
|--------------------------|---|---------------------|
| ca. 400 B.C. . . . .     | Birth of Eudoxus  |                     |
| 1. ca. 380 . . . . .     | Chrysippus visited Egypt with Eudoxus   | } perhaps identical |
| 2. ca. 360-250 . . . . . | Chrysippus, son of Erineus, pupil of Eudoxus  |                     |
| 3. ca. 320 . . . . .     | Chrysippus (I), the teacher of Erasistratus   |                     |
| 4. ca. 300-275 . . . . . | Chrysippus (II), his son, the accomplice of Arsinoe, and contemporary of Erasistratus |                     |
| 5. ca. 250-225 . . . . . | Chrysippus, the pupil of Erasistratus (T2)  |                     |
| 6.                       | Chrysippus, the son of Aethlius (T4), cannot be identified with either 3 or 4.        |                     |

(<sup>16</sup>) (a), OL89,2 (423/2): Euseb. Armen.: Eudoxios der Knidier war gekannt; Jerome, p. 115: *Eudoxus Cnidius clarus habetur*; Syncel. 257 C (OL88).

(b), OL97,1 (392/1); Jerome, *Eudoxus astrologus agnoscitur*; cf. LASSERRE, *op. cit.*, p. 137.

(<sup>17</sup>) For a possible explanation of *Ῥόδιος* here see FRASER, *op. cit.*, p. 347, with note 49. That the Chrysippi were all Cnidian citizens seems certain.



We have then two or three generations of Chrysippi, for which filiation is only attested between 3 and 4, but 2 and 3 may also have been father and son: see above. The absolute dates on the left are wholly approximate and serve only to indicate the generation-breaks.

Against this chronological framework we must set the various attempts of Wellmann and others to reconstruct Erasistratus' career, and consider in particular his supposed links with Alexandria.

The grounds for supposing that Erasistratus worked and taught in Alexandria were originally elaborated by Wellmann (1900, pp. 374 ff.) as follows:

1. The story of the diagnosis of Antiochus' love for Stratonice is not compatible with the Eusebian dates for the career of Erasistratus, and should therefore be associated with his father, the physician Cleombrotus (see T1, above).

2. Erasistratus was a pupil of 'Chrysippus I' (i.e. 3 in the above list), the father of the conspirator, at least one of whose pupils, Cleophantus, probably the brother of Erasistratus, started his own school in Alexandria<sup>(18)</sup>.

3. Erasistratus is said by Cael. Aurel. to have promised 'King Ptolemy' a plaster for his podagra<sup>(19)</sup>.

Leaving aside for the present the question of the authority of the dates given by Eusebius, on which rests the hypothesis noted under 1, it is clear that the arguments under 2 and 3 are of little weight. Though Wellmann's conjecture that *Κλεόφαντος ὁ Κλεομβρότου* (Rufus, 32, D-R) was the brother of Erasistratus is likely to be correct, and Cleophantus may have taught in Alexandria<sup>(20)</sup> it in no way follows that

<sup>(18)</sup> For Cleophantus see RUFUS, p. 32, D-R: *οὕτω δὲ καὶ εἵκαζε Κλεόφαντος ὁ Κλεομβρότου*; cf. WELLMANN, *Hermes*, 1900, *loc. cit.* and GOSSEN-KIND, *RE*, s. v. Kleophantos (2), col. 790.

<sup>(19)</sup> CAEL. AUREL., *M. Chr.* v, 2: *Erasistratus libro quo de podagra scripsit, prohibens tamen purgativa adhiberi quae catartica vocaverunt, malagma vero Ptolemaeo regi promittens, cuius scripturam non edidit, quamquam quidam sibi visum Erasistrati nominent medicamen.*

<sup>(20)</sup> That he did so is stated as a fact by WELLMANN and by GOSSEN-KIND, *loc. cit.*, but it is an inference from the fact that Mnemon of Side is stated by GAL. xvii, A, 603 (quoted, SUSEMIHL, i, p. 815, note 213; cf. *ibid.* ii, p. 681, add.) to have been of his *αἴθρσις: Παμφυλίου τὸ γένος ἐκ πόλεως Σίδης* (WELLMANN, *ap. SUSEMIHL*; *Ἰνδικῆς* MSS) *Κλεοφαντίου δὲ τὴν αἴθρσιν*. The other references to Cleophantus do not throw any light on this point. Mnemon himself was certainly

Erasistratus did the same. Another fellow-pupil of Erasistratus, Aristogenes, was court-doctor to Antigonus Gonatas <sup>(21)</sup>.

Again, the fact that Erasistratus promised 'King Ptolemy' a plaster for his gout does not necessarily mean that he was resident in Alexandria; compare the story of the Alexandrian physician, Zopyrus, who dispatched a potion to Mithridates of Pontus <sup>(22)</sup>. There was evidently no restriction on clientèle in this respect. Indeed, if Erasistratus had simply prescribed for Ptolemy in Alexandria the fact would hardly have gained currency; it clearly did so because of a correspondence between them. The statement of Plin., T3 above, that Erasistratus received a reward of 100 talents from 'Antiochus' son, King Ptolemy' is *prima facie* so completely false that no attempt to make sense it, either by some correction or by some explanation, carries conviction <sup>(23)</sup>.

active in Alexandria (see FRASER, *op. cit.*, pp. 325, 377-8), but since the word *αἰρεσις* does not imply any direct connection between the founder and the person described as belonging to it, this does not prove that Cleophantus was, and it is perfectly possible that, for example, he practiced in Antioch, as, it is argued, his brother did.

<sup>(21)</sup> See his SUDA-Life, s. v. (a) 'Αριστογένης Θάσιος and (b) 'Αριστογένης Κνίδιος; (a), at the end of his list of writings, *ἐπιτομήν φυσικῶν βοηθημάτων πρὸς Ἀντίγονον*; (b), 'Αριστογένης Κνίδιος, δοῦλος Χρυσίππου τοῦ φιλοσόφου, ἰατροῦσεν Ἀντιγόνῳ τῷ ἐπικληθέντι Γονατῷ; cf. WELLMANN, *RE*, s. v. Aristogenes (5). For Aristogenes as a fellow-pupil of Erasistratus see GAL. xi, 197: *καὶ τί θαυμαστόν Ἐρασιστράτον ἐπεσθαι τὰ πάντα Χρυσίππῳ τῷ Κνιδίῳ, προσηγορημένον ἀποστήναι τοῦ φλεβοτομεῖν ὥσπερ κάκεινος*; οὕτω δὲ καὶ Ἀριστογένης καὶ Μήδιος, οἱ ἄλλοι πάντες οἱ ἀπὸ τοῦ Χρυσίππου φαίνονται ποιοῦντες; *ibid.* 252: *ἠκολούθησεν δ' αὐτῷ καὶ οἱ μαθηταὶ Μήδιός τε καὶ Ἀριστογένης, ἔνδοξοι καὶ αὐτοὶ παρ' Ἑλλήσι γενόμενοι. τούτων δ' ἐπὶ μᾶλλον ὁ Ἐρασιστράτος*. It is clear from these passages, especially the second, that Aristogenes must be regarded as a direct pupil of Chrysippus, and not as merely belonging to his *αἰρεσις*. Cf. also the general expression, *ibid.* 151, *ὅτι μὴδ' αὐτοῖς τοῖς συμφοιτηταῖς μὲν τοῦ Ἐρασιστράτου, μαθηταῖς δὲ Χρυσίππου τοῦ Κνιδίου* showing the equation between the 'fellow-students of Erasistratus' and the 'pupils' of Chrysippus (cf. also *ibid.* 152, ch. II, fin.).

<sup>(22)</sup> See GAL. xiv, 150 [*ἀντίδοτος Ζωπύριος*: *ποιεῖ πρὸς τὰ θανάσιμα τῶν φαρμάκων καὶ παντὸς ἐρπειτοῦ πληγῆν*] *ἐπὶ ταύτης τοιοῦτόν τι φέρεται ὅτι Ζώπυρος δι' ἐπιστολῆς προτρέπει τὸν Μιθριδάτην εἰς ἐπίκρισιν τῆς ἀντιδότου, μεταπεμφάμενος ἓνα τῶν κατακρίτων, τούτῳ θανάσιμον δίδόναι φάρμακον, καὶ τότε παραινεῖ ἐπιπίνειν τὴν ἀντίδοτον ἢ πρότερον δίδόναι τὴν ἀντίδοτον καὶ τότε τὸ θανάσιμον ἐπιπίνειν*. For Zopyrus see FRASER, *op. cit.* p. 362, with notes.

<sup>(23)</sup> Thus FUCHS, *Rh. Mus.* 52, 1897, pp. 377-390, regards the story as a distorted reflection of the supposed fact that Philadelphus subsequently invited Erasistratus to work in Alexandria. It is equally possible either that 'rege Ptole-

Infinitely more significant than these hypothetical arguments is the fact that no pupils of Erasistratus are known to have studied or worked in Alexandria<sup>(24)</sup>; on the other hand one of his pupils or followers, Apollophanes of Seleucia, is known to have been court-physician to Antiochus III, and as a native of Seleucia it is natural that he should have been trained in Antioch<sup>(25)</sup>.

In 1907 Wellmann restated his views in his article on Erasistratus in *RE*, with this variation, that he now regarded him as the pupil of Chrysippus II (4 in the above list), the conspirator, whom, following Susemihl, he identified with the pupil of Aethlius, mentioned in T4<sup>(26)</sup>. He also elaborated his *curriculum vitae* in some subsidiary

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maeo' has been erroneously added to the text by someone other than Pliny, or that it is a slip for 'Antiocho'. It is in any case clear that the words can have no evidential value.

<sup>(24)</sup> The point was emphasised by SUSEMIHL, i, *loc. cit.* KIND, *RE*, s. v. Straton (19), cols. 315-6, and GORTEMAN, *Chr. d'Ég.* 32, 1957, p. 317, claim Straton, who was undoubtedly a pupil of Erasistratus, as an 'Artz in Alexandria' (Kind), but GAL. xi, 196 f. indicates only that he was a pupil and intimate of Erasistratus: *ἵνα γὰρ ἕσας τοὺς ἄλλους Στρατόντος μνημονεύσω, διὰ παντός μὲν Ἐρασιστράτου συγγενομένου, γράψαντος δ' ἐπὶ τῆς οἰκίας αὐτοῦ καὶ διὰ τοῦτο λεγομένου δεδουλευκέναι τῶνδρῶν, κ.τ.λ.*, and this may have been in Antioch, or elsewhere. For the significance of *οἰκία* here see FRASER, *op. cit.* pp. 357-8. It is true that Straton's only known pupil was a Memphite, Apollonius, who would more naturally learn his profession in Alexandria than in Antioch, but this is not evidence for Straton's own place of training.

<sup>(25)</sup> For Apollophanes of Seleucia see, in addition to POLYB. v, 56 and 58, CAEL. AUR. *A.M.*, ii, 173: *Apollophanes Erasistrati sectator*; *ibid.* 175: *Apollophanes omnes inquit cardiacos febricitare secundum Erasistratum*. His ethnic is in POLYB. v, 58, 3: *Ἀπολλοφάνης, ὑπὲρ οὗ καὶ πρότερον εἶπαμεν, τὸ γένος ὦν Σελευκεύς, ἐπέτεμε πάσας τὰς προειρημένας*; cf. further WELLMANN, *RE*, s. v. Apollophanes (15), cols. 165-6.

<sup>(26)</sup> See SUSEMIHL, *Rh. Mus.* 56, 1901, pp. 313-318; WELLMANN, *RE*, s. v. Erasistratos, cols. 333 ff., and, especially for his change from Chrys. I to Chrys. II, col. 334. The identification with Chrysippus, the son of Aristogenes and pupil of Aethlius (*loc. cit.* T4, above), was proposed by Wellmann in his article of 1930. The identification of this Chrysippus turns also in the first place on the interpretation of the text of D. L. viii, 90 (T4), *τούτου διήκουσε Χρυσίππος ... πεσόντων*. WILAM. *Antig. Karyst.*, pp. 325-6, followed by SUSEMIHL and WELLMANN, *loc. cit.* regard the subject of *κατέλιπε δὲ καὶ ὑπομνήματα κάλλιστα* as Chrysippus, and the following *τούτου* as also referring to him; Aristagoras thus becomes the son of Chrysippus, the son of Erineus, and Chrysippus (II), the pupil of Aethlius, his grandson. It is, however, easier to understand Eudoxus as the subject of *κατέλιπε*, and also as the antecedent of *τούτου* (so HICKS, Loeb edn., LONG, *OCT*,

respects: he grew up in Antioch, after having been born on Ceos, and then studied in Athens, perhaps in the Peripatos; subsequently he studied medicine in Cos, where he became acquainted with Nicias, Theocritus' medical friend (27), and finally had his main training in Alexandria under Chrysippus II. He suggested that, occasional voyages apart, he made Alexandria the centre of his activities, and finally ended his days there, withdrawn from actual practice and devoting himself to anatomical research (28).

The picture presented in Wellmann's final article, which appeared in 1930, is again modified (29). Having learnt the rudiments of Chrysippian medicine (i.e. the doctrines of Chrysippus I, father of the conspirator) from Metrodorus in Antioch (see below), he went to Athens and heard the lectures of Theophrastus and Straton; he also

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who begins a new paragraph with *κατέλιπε*), though there may be an error of D. L. or his copyist. It has also to be pointed out that the various medical theories which WELLMANN, *ibid.* col. 335, claims for this Chrysippus, the fellow-conspirator of Arsinoe, which correspond at some points to those of Erasistratus, are not tied explicitly to this Chrysippus. The passages in question simply refer to 'Chrysippus' or 'Chrysippus the Chidian', and may be assigned with equal, indeed greater probability, to any of the other Chrysippi. I regard them as mainly the views of Chrysippus, the teacher of Erasistratus and father of the conspirator. We have no independent evidence to suggest that the conspirator was distinguished as a writer or teacher, unless we regard him, with Wilam., as the *grandson* (*νιωνός* for *νιός* in T2 above) of the teacher of Erasistratus, and the son of Aristagoras, and this seems to me unnecessary.

(27) For Nicias' link with Erasistratus see *Schol. Theocr. Id. xi, init. a* (p. 240), WENFEL: *προσδιαιλέγεται δὲ ὁ Θεόκριτος Νικίαι τῷ ἰατρῷ, Μιλησίῳ τὸ γένος, οὗ καὶ ποιημάτων φέρεται ... Ἐργασιε δὲ καὶ ἐπιγράμματα ὁ αὐτὸς γέγονε δὲ συμφοιτητῆς Ἐρασιστράτου τοῦ Ἰουλιήτου, ὡς φησι Διονύσιος ὁ Ἐφέσιος ἐν τῇ τῶν ἰατρῶν ἀναγραφῇ*; cf. also *ibid.* d). Since Nicias was a contemporary of Theocritus his acme must be placed ca. 270, which, Wellmann thought, was too late for Erasistratus if the story of his healing of Antiochus I in 293 is historical. But if E. was a young man when he cured Antiochus there is no difficulty in his having been a *συμφοιτητῆς* of Nicias.

(28) See col. 335: 'Im Alter gab E. seine praktische Tätigkeit auf und lebte in Alexandria einzig der Wissenschaft (GAL. v, 602)'. Galen's words are: *Ἐρασιστράτος ... δὲ πρῶτον ὡν ἤδη καὶ σχολὴν ἄγων μόνους τοῖς τῆς τέχνης θεωρήμασιν ἀκριβεστέρως ἐποιεῖτο τὰς ἀνατομίας*, but it is not clear that *τὰ τῆς τέχνης θεωρήματα* refers to practical dissection, let alone of humans; cf. FRASER, *op. cit.* note 76. There is no indication where he spent his last years, and BELOCH, *loc. cit.* preferred Antioch as the scene of these researches (cf. also SUSEMHL, i, p. 801).

(29) *Hermes*, 65, 1930, p. 327.

studied in Cnidus, along with Nicias. In later life, Wellmann claimed, we encounter him in Alexandria, three grounds in particular speaking for his activity there:

1. Galen says that the schools of Erasistratus and Herophilus both flourished after the death of Herophilus<sup>(30)</sup>, and that can only be in Alexandria, where Herophilus was certainly active.

2. The letter to a Ptolemy regarding the gout stamps him as a Ptolemaic court-doctor.

3. His researches into the structure of the nervous system, the heart and the brain, are only conceivable in a society which permitted dissection and vivisection, and that, so far as we know, holds true only of Alexandria.

With the second point we have already dealt, and the arguments need not be repeated. As for the first point, it is certainly noteworthy that Galen here couples the two physicians in terms of the death of Herophilus, but the *αἰρεσις* of Herophilus dominated subsequent Hellenistic medical studies and practice, both through the *Ἡροφίλειοι* and through the Empiricals, and the expression has no particular local significance.

Wellmann's last point is more weighty. There is no doubt that there are one or two aspects of physiology and of medical theory and practice that were characteristic of Alexandria, and if it could be shown that Erasistratus adopted the same theories and practices as are attested beyond dispute for Herophilus, it would be natural to assign him to Alexandria as well.

The foremost of these is certainly the practice of human anatomy, which Galen regarded as the greatest achievement of Ptolemaic Alexandria, and which is particularly associated with the name of Herophilus<sup>(31)</sup>. Erasistratus, it is urged, also practised human anatomy, or at least wrote a book on that subject<sup>(32)</sup>, and he is named by Celsus

<sup>(30)</sup> GAL. viii, 715: ἤκμασε γὰρ ἄμφω ταῦτα τὰ διδασκαλεῖα (of Herophilus and Erasistratus) μετὰ τὸν Ἡροφίλιον θάνατον.

<sup>(31)</sup> For a fuller discussion of this matter, with quotation of sources, see FRASER, *op. cit.* pp. 348-9.

<sup>(32)</sup> See GAL. iv, 718: οἱ γὰρ καὶ νῦν οὐκ αἰδοῦνται λέγοντες ὡς ἐκ τῶν πλησίον συναναστομώσεων ἢ μετάληψις ταῖς ἀρτηρίαις τοῦ αἵματος γίγνεται, μὴ μεμνημένοι μηδ' ὅτι τὰς ἐσχάτας αὐτὸς Ἐρασιστράτος εἰρηκε κενουθεῖται πρώτως, μηδ' ὅτι φαίνεται τοῦτ' ἐναργῶς, ἐφ' ᾧ αὐτὸς ἐκεῖνος ἔγραψεν ἀνατομῶν.

alongside Herophilus as practising human vivisection<sup>(33)</sup>. Since Herophilus undoubtedly practiced this in Alexandria, by reason of the co-operation of the royal authorities who provided criminals for the purpose, the probability is that Erasistratus worked in the same city and enjoyed the same facilities. The matter, however, is not so easily resolved. The tradition is not unanimous in including the name of Erasistratus (as it is in telling the story essentially of Herophilus). Tertullian<sup>(34)</sup>, reproducing the views of Soranus, a well-informed witness on this point, does not refer to Erasistratus apropos of human vivisection, but only, alongside Hippocrates, Asclepiades, Herophilus and Soranus himself, as having used the embryophract, an instrument which obviously was not confined to Alexandria<sup>(35)</sup>. However, Celsus is an authority of hardly less weight than Soranus himself, and it would perhaps be wrong to dismiss his inclusion as the result of a confusion, possible though that is, if there were no other grounds for doing so. (There seems no reason, in passing, why the Seleucid authorities should not have done the same as the Ptolemies in this respect. Galen tells us that at a later date both Attalus III and Mithridates the Great used to test out antidotes on condemned criminals<sup>(36)</sup>, and no doubt had an interest in human anatomy survived until their time, they would not have scrupled to submit such persons to vivisection). Of far more significance, however, than the mention of Erasistratus alongside Herophilus in this ambiguous context is the fact that Galen, who makes so many references to Herophilus' advances in human anatomy, does not once refer to Erasistratus either alone or with Herophilus in this

<sup>(33)</sup> *Proem.* 23-4: *longeque optime* (sc. *qui rationalem medicinam profitentur*, § 13, i.e. the Methodists) *fecisse Herophilum et Erasistratum, qui nocentes homines a regibus ex carcere acceptos vivos inciderint*, etc.; cf. the full quotation, FRASER, *ibid.* note 64.

<sup>(34)</sup> *De Anima*, 10: *Herophilus ille medicus aut lanis, qui sescentos exsecuit, ut naturam scrutaretur, qui hominem odiit, ut nosset, nescio an omnia interna eius liquido exploravit, ipsa morte mutante quae vixerant, et morte non simplici, sed ipsa inter artificia exsectionis errante.*

<sup>(35)</sup> *ibid.* 25, after describing the use of the embryophract (see the passage quoted in full, FRASER, *ibid.* note 60): *hoc et Hippocrates habuit et Asclepiades et Erasistratus et maiorum quoque prosector Herophilus et mitior ipse Soranus*, etc.

<sup>(36)</sup> GAL. xiv, 2: *ὁ γὰρ τοι Μιθριδάτης οὗτος, ὡσπερ καὶ ὁ καθ' ἡμᾶς Ἀιταλός, ἔσπευσεν ἐμπειρίαν ἔχειν ἀπάντων σχεδὸν τῶν ἀπλῶν φαρμάκων, ὅσα τοῖς ὀλεθροῖσι ἀντιτίθενται, πειράζων αὐτῶν τὰς δυνάμεις ἐπὶ πονηρῶν ἀνθρώπων, ὧν θάνατος κατέγνωστο.*

connection. Indeed, on the contrary, though he refers to a book on Anatomy by him, it seems clear that the subject was animal, and not human, anatomy, and in the field even of animal anatomy he states clearly that Erasistratus had not dissected living animals<sup>(37)</sup>. He tells us further that at the end of his life, when head of a medical school, he turned his attention to the study of the 'principles of the art' of dissection, but it is not clear to what extent even this refers to the vivisection of animals<sup>(38)</sup>.

Erasistratus' activity in the anatomical field remains obscure, but the evidence does not suggest that he practised human anatomy. Since, as Celsus and Galen already stressed, this subject developed in Alexandria, in the hands of Herophilus, there is no reason to associate Erasistratus with Alexandria on that ground. If he did make some progress in the practice of animal dissection, that suggests less advanced anatomical standards than existed in Alexandria.

Other links between Herophilus and Erasistratus have been seen in certain fundamental theories of the nervous system, but it is quite clear that, although both recognized the existence of both sensory and motor nerves, their understanding of the anatomy of the nervous system was quite different, and though it has been claimed that the views of Erasistratus reflect anatomical study and even vivisection, no less than do those of Herophilus<sup>(39)</sup>, there is nothing in his surviving observa-

<sup>(37)</sup> See the passage quoted above, note 32. In v, 604, Gal. says *εἰ δὲ κατὰ τῶν ζῴωντων ζῴων ἐπεποίητο τὴν πεῖσαν ἦν οὐχ ἅπαξ οὐδὲ δις ἀλλὰ πάντοτε πολλάκις ἐποιησάμεθα, βεβαίως ἂν ἔγνω τὴν μὲν σκληρὰν καὶ παχεῖαν μήνιγγα σκέπης ἔνεκεν γεγεννημένην ἐγκεφάλου.*

<sup>(38)</sup> Cf. above, note 28.

<sup>(39)</sup> For the views of Herophilus and Erasistratus on the *νεῦρα* see especially SOLMSEN, *Mus. Helv.* 18, 1961, pp. 185 ff. Herophilus' explanation is given in GAL. vii, 605: *μέμφομαι... Πραξαγόραι καὶ Ἡροφίλοι, τῶι μὲν ἀρτηρίων πάθος εἰπόντι τὸν τρόπον, Ἡροφίλοι δὲ φιλοτιμουμένοι δεῖξαι πρὸς τὸ νευρῶδες αὐτὸ γένος αἰσιν συνιστάμενον... Ἡρόφιλος ἠπατήθη τὸ τῆς δυνάμεως πάθος ἀναφέρων τοῖς ὄργανοις· ὅτι μὲν γὰρ τὸ νευρῶδες γένος, οὐ τὸ ἀρτηριῶδες ὑπηρετεῖ ταῖς κατὰ προαίρεσιν κινήσεσιν ὀφθῶς ἐγίνωσκεν.* For Erasistratus see esp. GAL. v, 125, speaking of the causes of paralysis: *ὁμολόγησε δὲ καὶ ὁ Ἐρασίστρατος αὐτὸς ἐπὶ τοῦ χυμοῦ τοιοῦτου γίνεσθαι τινα πάθη, καίτοι παντὶ τρόπῳ φυλατιόμενος αἰτιᾶσθαι τοὺς μοχθηροὺς χυμοὺς· ἀλλὰ τοὺς γε γλίχρους καὶ παχεῖς αὐτὸς ἀπεφήνατο παραλύσεως αἰτίους γένεσθαι οὕτως· τὸ μὲν οὖν πάθος συμβαίνει παρεμπιπύσεως ὑγρῶν γινομένης εἰς τὰ τοῦ πνεύματος (see SOLMSEN, *op. cit.* p. 188, note 15) ἀγγεῖα τὰ ἐν τοῖς νεύροις, δι'*

tions which necessarily implies dissection <sup>(40)</sup>.

We must now consider the positive reasons for connecting Erasistratus with Antioch. First is the story of his curing the love of Antiochus. This is told in detail by Valerius Maximus, Plutarch and Apian <sup>(41)</sup> with such a mass of circumstantial detail that it is difficult either to reject it completely or to regard it as embodying a major chronological error, the more so since Valerius must have derived the story from a source, Roman or Greek, which was not later than the Augustan age <sup>(42)</sup>; and though it may owe something to traditional themes <sup>(43)</sup>, there is no reason to doubt that it has a reliable historical core. We are told that after Erasistratus had revealed to Seleucus the nature of Antiochus' illness, Seleucus generously resolved to sacri-

*ὅν αἱ κατὰ προαίρεσιν κινήσεις συντελοῦνται*; cf. SOLMSEN, p. 188. For the claim that Erasistratus' theory presupposes direct human anatomy see *loc. cit.* Cf. also WELLMANN, *Hermes*, 65, 1930, p. 328: 'Endlich sind die Entdeckungen des Erasistratos (Nerven, Herz, Gehirn) ohne Sektion von Leichen und ohne Vivisektion — beides wurde, soviel wir wissen, nur in Alexandria vorgenommen — nach ärztlichen Urteil einfach undenkbar'.

<sup>(40)</sup> GAL. v, 602 (cf. GREENHILL, *Dict. Class. Biogr.* s.v. Erasistratus, p. 43; SOLMSEN, *op. cit.* p. 189, note 20), the passage regarding the starting-point of the nerves, indicates that he changed his opinion on this point when he made his more careful researches as an old man (see note 28), his original view being that they started in the dura mater and his revised view that they originated in the interior of the brain. But this observation may have been made on any mammal.

<sup>(41)</sup> VAL. MAX. v, 7, *Ext.*; PLUT. *Demetr.* 38; APP. *Syr.* 59-61. The various narratives and their detailed differences are analysed at great length by J. MESK, *Eh. Mus.* 68, 1913, pp. 366-394; see further note 43.

<sup>(42)</sup> For the sources of Val. Max. see HELM, *RE*, s.v. Valerius Maximus (239), cols. 104 ff.

<sup>(43)</sup> MESK, *op. cit.* regards the story of the love of Antiochus for his stepmother as a literary borrowing from the theme, and even the actual substance of Euripides' *Hippolytus*. I do not find this convincing. Equally hypothetical is WELLMANN's view (*Hermes*, 35, 1900, p. 380) that the story in Soranus' *Life of Hippocrates* of Hippocrates' diagnosis of the nature and cause of the illness of Perdicas, who loved Phila, the mistress of his deceased father Alexander (WESTERMANN, *Βιογράφοι*, p. 450; IDELER, *Phys. Min.* i, p. 253), formed the basis of the tradition. The framework of the story is sound — Antiochus certainly married his stepmother, and was certainly elevated by his father to be satrap of the Upper Satrapies — and, as I try to show, the story contains no chronological impossibility. It is thus wholly uncertain how much of the details regarding Erasistratus' role can be dismissed.



fice his own happiness to that of his son, ceded to him his wife Stratonice, and proclaimed him ruler of the Upper Satrapies, and his coregent<sup>(44)</sup>. It is difficult to believe that this story (the detail of which regarding the Upper Satrapies suggests that it originated in a Seleucid source) and the dramatic date of which must be in or before 292<sup>(45)</sup>, embodies an error of a generation, and that we should understand it of Antiochus Soter as the father and Antiochus Theos as the son<sup>(46)</sup>, in which case the name of the stepmother would be not Stratonice but Laodice. If, however, we accept the story at its face-value, it will involve us in one serious consequence: the rejection of the Eusebian date for Erasistratus' *floruit*, 258/7.

How possible is it that there is an error in the chronographical tradition? The answer is, perfectly possible. Even within the small scope of the present article we have encountered one impossible date concerning the life of Eudoxus<sup>(47)</sup>, and there are other dates of the fourth and third centuries which are equally untrustworthy<sup>(48)</sup>. However these aberrant dates arose, it clearly impugns the authority of Eusebius, and if there exist valid independent grounds for assigning different dates to a particular career, we must not sacrifice either historical probability or the weight of reliable evidence to the errors of Eusebius. It is perhaps significant that Syncellus states that Erasistratus flourished in the time of Seleucus (*ἐπὶ Σελεύκου*)<sup>(49)</sup>. If we may

<sup>(44)</sup> See PLUT. and APP. *loc. cit.* App. in particular gives a very full account of the speech of Seleucus elevating Antiochus and his stepmother-wife to the rule of *τῶν ἐθνῶν τῶν ἄνω*.

<sup>(45)</sup> See BELOCH, *GG*, iv, 2, p. 198; KUGLER, *Von Moses bis Paulus* (Münster, 1922), p. 310 (cf. PARKER and DUBBERSTEIN, *Babylonian Chronology* (Chicago, 1942, 1946), p. 19), earliest date 13 Dec. 292.

<sup>(46)</sup> DROYSEN, *Gesch. d. Hell.* iii, 1, p. 375, admitted as possible by BELOCH, *op. cit.* iii, 2, p. 475; iv, 2, p. 565. This solution is rejected by WELLMANN, *loc. cit.* in favour of his own view that the passage refers to Erasistratus' father, Cleombrotus.

<sup>(47)</sup> See above, p. 8.

<sup>(48)</sup> Cf. the various errors and confusions discussed by HELM, *Euseb.* vii (1956), pp. xliiff. (who cites the case of Eudoxus); he concludes: 'Derartige Erscheinungen sollten uns übrigen lehren, dass die unbedingte Verehrung für den Verfasser der Chronik und die Voraussetzung der Vollkommenheit seines Werkes doch sehr unberechtigt ist...'

<sup>(49)</sup> See SYNC. p. 520: 'Ἐρασιστράτος διαφανῆς ἰατρός ἐπὶ Σελεύκου ἐγνωρίζετο.'

reject the late date given by Eusebius, there remains no reason for regarding the story of the love of Antiochus for Stratonice as apocryphal, at least as far as the participants are concerned <sup>(50)</sup>.

Plutarch, Valerius Maximus and Appian portray Erasistratus as the court-doctor of Seleucus in ca. 293, and, whenever he may have arrived in Antioch (founded 300 B.C.) <sup>(51)</sup>, this date is compatible with the other known events of his life. He is reputed to have had links with the Lyceum at an early date, through adoption by Aristotle's daughter, Pythias, who, as her third husband, married Metrodorus, who is stated to have been the teacher of Erasistratus, and the pupil of a Chrysippus not further identified <sup>(52)</sup>. Pythias was still a minor at the time of the death of Aristotle, but was already a widow by 318 <sup>(53)</sup>, and therefore cannot have been born later than ca. 340-335; while Metrodorus is not likely to have been much younger. If the doctor named Metrodorus, a native of Amphipolis, known to have healed Antiochus I at some time between 279 and 268 <sup>(54)</sup>, is identified with the teacher of Erasistratus, it is possible that he and his pupil, who was also his adopted son, went to Antioch together in about 300 B.C., when Metrodorus may have been about 40 — he may therefore have been only a little

<sup>(50)</sup> It may also be argued (as by FUCHS, *Rh. Mus.* 52, 1897, p. 379; cf. also id. *Erasistratea* (Berlin diss. 1892), pp. 8-9) that the two dates — the date of the curing of Antiochus and the Eusebian date for Erasistratus' *floruit* — are not irreconcilable in view of the advanced age to which E. lived (cf. note 28). But this seems very improbable.

<sup>(51)</sup> See DOWNEY, *Antioch* (Princeton, 1961), p. 57.

<sup>(52)</sup> For Metrodorus' date see SEXT. EMP. *Adv. Math.* i, 258: Πυθιάς δὲ ἡ Ἀριστοτέλους θυγάτηρ τρισὶν ἀνδράσιν ἐγαμήθη, πρῶτον μὲν Νικάνορι τῷ Σταγειρίτηι, οἰκίῳ δὲ Ἀριστοτέλους, δευτέρῳ δὲ Προκλεῖ Δημαράτου τοῦ Λακεδαιμονίων βασιλέως ἀπογόνῳ... τρίτῳ δὲ Μητροδόρῳ ἰατρῷ, Χρυσίππῳ μὲν τοῦ Κνιδίου μαθητῆι, Ἐρασιστράτῳ δὲ ὑφηγητῆι, ὅτι γίνεται παῖς Ἀριστοτέλης; cf. KROLL, *RE*, s.v. Metrodorus (26), cols. 1482-3. D. L. v, 53, records Aristoteles as the son of Meidias, and Kroll says, 'Also ist die ganz Existenz unseres M. zweifelhaft'. The identity of Metrodorus with the Amphipolitan mentioned in the inscription (note 54) seems to me very probable.

<sup>(53)</sup> See SCHMIDT, *RE*, s.v. Pythias (2), col. 549.

<sup>(54)</sup> *OGIS* 220, a decree of Ptolemy. The date is determined by lines 9 ff.: ἐπαίνεσαι μὲν Μητροδόρῳ Τιμοκλέους Ἀμφιπολίτην ἀρετῆς ἕνεκεν καὶ εὐνοίας τῆς εἰς τοὺς βασιλεῖς Ἀντίοχον καὶ Σέλευκον, the βασιλεῖς being Antiochus I and his elder son and co-regent, Seleucus, whose co-regency lasted from 280/79 to 268/7; see already DITT. *ad loc.* (note 6), and, for the actual dates, PARKER and DUBBERSTEIN, p. 19.

over 60 at the time of the honours bestowed on him — and Erasistratus somewhere between 20 and 30. On the other hand, if the two Metrodori are distinct, the Amphipolitan will have succeeded Erasistratus, and the activity for which he was honoured may be placed nearer 268; at that date Erasistratus had probably retired to devote himself to his anatomical studies. In either case Erasistratus will have been not a generation younger than Herophilus, but of approximately the same age<sup>(55)</sup>. It was no doubt in the early stages of his training, when still in Athens, that he learnt from Straton of Lampsacus his teaching of the nature of pneuma and of the void which formed a considerable element in his physiology<sup>(56)</sup>. Presumably by the time he went to Antioch he had also received his instruction from Chrysippus of Cnidus in Cnidus. The later stages of his career, after he had moved to Antioch, are, the story of Stratonice apart, undocumented.

One consequence of Erasistratus' activity and influence in Antioch remains to be emphasized: the development there of a centre of medical studies, not indeed comparable with Alexandria, but which has nevertheless left some traces, and in the establishment of which we may conjecture that he played a leading role. We hear of other court-doctors of the Seleucids beside Metrodorus and Erasistratus; Simon, described by Diogenes Laertius as 'physician of Seleucus Nicanor'<sup>(57)</sup>, and thus a contemporary of Erasistratus; Apolophanes of Seleucia, a follower of Erasistratus, physician of Antiochus the Great, who figures in the pages of Polybius<sup>(58)</sup>; and at a much later date Craterus of Antioch, the 'chief-physician' of Antiochus IX Cyzicenus, honoured with a statue at Delos set up by another cour-

<sup>(55)</sup> For the dates of Herophilus see the reference above, note 13.

<sup>(56)</sup> For Erasistratus' links with the Peripatetics see especially GAL. *Nat. Fac.* ii, 4 (HELMR.; ii, 88 K): *καὶ ταῦτ' Ἐρασιστρατοῦ οὐκ οἶδεν, ὃν οὐδὲν λανθάνει, εἴπερ ὄλωσ ἀληθεύουσι οἱ ἀπ' αὐτοῦ φάσκοντες ὁμιληκέναι τοῖς ἐκ τοῦ Περιπάτου φιλοσόφοις*. For his adoption of Straton's teaching of the nature of pneuma see DIELS, *S B*, *Berl. Akad.* 1893, pp. 104 ff. (*Kl. Schr. zur Gesch. ant. Phil.* pp. 242 ff.); JÄGER, *Schrift. Min.* ii, pp. 232-3; cf. also LONIE, *Bull. Hist. Méd.* 38, 1964, pp. 426 ff., 'Erasistratus, the Erasistrateans and Aristotle'; GOTTSCHALK, *Straton of Lampsacus* (Leeds Liter. Soc. 11 (6), 1965), pp. 127 ff. There is much that is uncertain regarding the extent of the link between Erasistratus and Straton, but Diels' basic demonstration has withstood criticism: see especially GOTTSCHALK, *loc. cit.*

<sup>(57)</sup> D. L. ii, 124, the list of homonyms: *γένετο δὲ καὶ ἄλλος Σίμων ὀητορικῶς τέχνης γεγραφώς· καὶ ἕτερος ἱατρός κατὰ Σέλευκον τὸν Νικάνορα*.

<sup>(58)</sup> Cf. above, note 25.

tier<sup>(59)</sup>. In the field of medico-literary studies, which flourished towards the end of the third century in Alexandria in the person of Bacchius of Tanagra, Antioch had one contemporary figure of note, the poet Euphorion of Chalcis, librarian of the Seleucid Public Library. Euphorion's work was in essentials, like that of Bacchius, a glossography of the works of Hippocrates, *λέξεις Ἱπποκράτειαι*, the few surviving fragments of which resemble those of Bacchius<sup>(60)</sup>. Thus, though higher medical studies in Antioch were not comparable to those in Alexandria, it is evident that there was an academic medical tradition, and the reference to Apollonphanes of Seleucia as a follower of Erasistratus suggests that the *Ἐρασιστράτειοι* may have flourished there before being transplanted to Smyrna and Rome in the first century B.C.<sup>(61)</sup> Like Herophilus in Alexandria, Erasistratus had his own *οἰκία* or residence for students<sup>(62)</sup> who worked in particularly close association with him, and in this, as in other respects, it is not likely that the pattern of medical training and activity differed much between the two capitals.

The few surviving records of Erasistratus' career certainly do not provide a secure basis for biography except in the most general terms. If this paper has succeeded in indicating (i) that there is no positive evidence that Erasistratus worked as a specialist in Alexandria; (ii) that the chronological implications of the story of his diagnosis of the love of the future Antiochus I for Stratonice, need not be rejected even if some details may be fanciful; (iii) that on the contrary there is some slight evidence to support the view that he was primarily active in Antioch, and that his followers were established there at a later date, it may go some way towards countering the idle repetition of the view that Erasistratus, like Herophilus, was active in Alexandria.

<sup>(59)</sup> *Inscr. Dólos*, 1547 (OGIS 256): Κράτερον Κουτέρον Ἀντιοχέα τὸν τροφέα / Ἀντιόχου Φιλοπάτορος τοῦ ἐν βασιλέως / μεγάλου Ἀντιόχου καὶ βασιλίσσης Κλεοπάτρας, / γεγονότα δὲ καὶ τῶν πρώτων φίλων βασιλέως Ἀντιόχου καὶ ἀρχιάτρον καὶ ἐπὶ τοῦ κοιτῶνος τῆς βασιλίσσης, κ. τ. λ.

<sup>(60)</sup> For Euphorion's *Λέξεις Ἱπποκράτειαι* see SKUTSCH, *RE*, s.v. Euphorion (4), col. 1189; WELLMANN, *Hermes*, 65, 1930, pp. 329-330; ID. *Hippokratesglossare* (*Quell. u. Stud. Gesch. der Naturwiss. u. Medizin*, 2, 1931), pp. 8-9.

<sup>(61)</sup> For the transplantation of the *Ἐρασιστράτειοι* to Smyrna see STRAB. 580: συνέστηκε δὲ καθ' ἡμᾶς διδασκαλεῖον Ἡροφιλείων ἰατρῶν μέγα ἐπὶ Ζεῦξιδος... καθάπερ ἐπὶ τῶν πατέρων τῶν ἡμετέρων ἐν Σμύρνῃ τὸ τῶν Ἐρασιστρατειῶν ἐπὶ Ἰκασίου. For the school in Rome see ALLBUTT, *Greek Medic. in Rome*, pp. 176 ff.

<sup>(62)</sup> See above, note 24, and FRASER, *Ptol. Alex.* pp. 357-58.