letters, above all the last, show that Fondulo visited Venice in 1539.

If the doubtful digit looked quite unlike 3, Fondulo might still be supposed to have paid an earlier visit to Italy in I $529 ;{ }^{14}$ but there is a very simple proof that the manuscripts in the list left Italy not before 1539. Two of them, Paris. gr. 1830 and 2376, were written in 1539 by



The new date closes an awk ward gap of over a decade between Francis I's earliest purchase of Greek manuscripts and his amply attested purchases in the is40s.

Pellicier's letters confirm what might have been expected, that anyone commissioned to buy quantities of Greek manuscripts would descend on Venice. Evidence that Fondulo visited Rome on the same business has yet to be produced. ${ }^{16}$ Other things too suggest a Venetian origin for Paris. gr. 2895. Besides Longus and Achilles Tatius, it contains Eustathius Macrembolita, where its closest relative, Vat. Reg. gr. $165(s . \mathrm{xv} / \mathrm{xvi})$, was written at Venice. ${ }^{17}$ Moreover, its exemplar in Longus and Achilles Tatius, Tübingen Mb $16,{ }^{18}$ has a watermark that recurs in a manuscript written at Venice in 1535 by Ange Vergèce. ${ }^{19}$ The scribe of the Tubingensis, Johannes Honorius, is well known for his work in Rome, where he wrote amongst other things its grandson Vat. gr. 1350 and its great-grandson Vat. gr. 2367; but no one knows where he was before his appointment as librorum Graecorum instaurator at the Vatican on July 2nd I $535 .{ }^{20}$ Perhaps he brought the Tubingensis or the lost intermediary to Rome with him from Venice.
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${ }^{14}$ So Omont (n. s) iv-v; Tausserat-Radel (n. 9) i 14 n. 2.
${ }^{15}$ Omont (n. s) 371-2 nos 10, $13+43$, and Rev. des Bibl. ii (1892) 154. On Albini, librarian of S. Antonio di Castello, see S. Bernardinello, Autografi greci e greco-latini in occidente (Padua 1979) 30, 71 no. 81 ; on the importance of the library at the time, Zeller (n. 8) 116-19, with or without the modifications of G. Mercati, Studie Testi lxxv (1938) 26-34.
${ }^{16}$ In Reeve 166 I lazily followed Vilborg, p. xxi, lxxv, who followed Dörrie, p. in.
${ }^{17}$ See the edition of I. Hilberg (Vienna 1876) xlii.
${ }^{18}$ Reeve 166 and before me F. Romero, Emerita xlvi (1978) 131 1-5.
${ }^{19}$ Reeve 166 n .8 on the authority of D. Harlfinger.
${ }^{20}$ R. De Maio, Studie Testi ccxix (1962) 299 n. I. His earliest dated manuscripts, Vat. gr. 205 and 324, were both written in $1536^{\circ}$ ad huius bibliothecae Palatinae usum'; cf. Vogel and Gardthausen, Die griechischen Schreiber des Mittelalters und der Renaissance (Leipzig 1909) 181-4, and K. A. de Meyier, Scriptorium xviii (1964) 261-2. Omont (n. 5) 371 no. 12, 17 no. 44, identifies a manuscript partly written by him, Cambridge $\mathrm{Kk} V 26$, with one of Fondulo's purchases, 'Apıбтєídov каi $\tau \hat{\omega} \nu \tilde{\nu} a \lambda \lambda \omega \nu \pi \epsilon \rho i \quad \mu o v \sigma \iota \kappa \hat{\eta} 5$-strangely, because it contains Aristoxenus and no other writer on music. The manuscript in question is surely Paris. gr. 2456, which contains Aristides and ten other writers on music. Omont $129-30$ no. 380 gives no provenance for it and attributes it to Valeriano Albini, on whom see above. Later, in his Inventaire sommaire des manuscrits grecs de la Bibliothèque Nationale i (Paris 1898), he attributes it in one place to Albini (p. xxxiii), in another to Michael Damascenos (p. 264) - not the only discrepancy of the kind (cf. Vogel-Gardthausen 371 n. 6).

## The Arabic version of Galen's Ars Parva

Following our study of unpublished manuscripts of Hunain's translation of Galen's De Sectis ad eos qui
introducuntur, a report of which appeared in $J H S$ xcviii (1978) 167-9, we turned our attention to Hunain's translation of Galen's Ars Parva. Once again we have been impressed by the generally excellent quality of the Arabic version and we record a number of passages relevant to the problem of establishing the original Greek text. Perhaps our most important result is to confirm the existence, in Hunain's version of the Greek text, of an extensive preface including explanations of the terms 'analysis' and 'synthesis' which are missing from the printed text of Kühn.

We begin by giving the Incipit in full. It is important to note that, as Temkin has correctly observed, Galenism (Cornell 1973) Io9 n. 39, both our MSS begin their text with Qāla Jālīnūs: 'Galen said'.

## INCIPIT

## Galen said:

In all disciplines which proceed in an orderly manner, the methods are of three kinds: one of them is the method of reversion and resolution; and that is that you consider the thing that you intend [i.e. have in view] and seek the cognition of it, in your understanding, in its ultimate perfection; considering the next and the next of the things without which that thing cannot be established or perfected, until you arrive at the first of them: and the second is by the method of composition, and does the opposite of the first method; and that is that you begin with the thing which you ended up with, by the method of resolution and reversion; then you return to those things [sc. the proximates], and so you pass from one of them to another till you reach the last of them: and the third is by the method of resolution of the definition, and that is the method we shall employ in this book. And you may call this discipline, instead of the resolution of the definition, the elucidation of the definition, as some call it ; or the reduction of the definition and its partition, as others call it; and its exposition and its interpretation, as still others call it. And certain of the followers of Herophilus have wished to follow this very way of investigation. Herophilus is also known as Erithros. ${ }^{1}$ And the followers of Herophilus have also desired to follow composition; and some of the followers of Erasistratus, and Athenaeus called Attalos; and not one of those we have mentioned has in any of his books employed the form of investigation which has its beginning from the projection of thought to the limit [sc. ultimate perfection] of the thing sought, although this is the method which opens up all the arts, by way of reason. ${ }^{2}$
Abbreviations: $\mathrm{K}=\mathrm{Kühn's}$ edition, Vol. i of Claudii Galeni Opera Omnia (Leipzig 1821). H=Hunain's Arabic version.
K 307.6 f. The Arabic version omits ov̉ $\delta \iota a \phi \epsilon ́ \rho \epsilon \iota \delta \grave{~ o v ̉ \delta ' ~}$ $\epsilon i$ voo $\epsilon \rho \hat{\omega} \nu \tau \iota s \epsilon i l \pi o u$. This may possibly be a gloss in the Greek text, though voaє $\rho \hat{\omega} \nu$ is used at K 309.5 f . (Compare the careful distinction between voo $\hat{\omega} \delta \epsilon s$ and vooovev at K 318.4 and 376.15 f.).
K 309.9 K prints $\dot{\delta} \mu o i \omega \omega \nu$. The correct text is clearly

[^0] list of various ways of naming the third method.
$\delta \pi o i \omega \nu$ (cf. 309.7), as is confirmed by H. (The order of the questions in H suggests he read $\sigma \eta \mu \alpha i v \in \tau \alpha \iota \delta \grave{\epsilon}$
 f.: this is not the order in which the questions are introduced in our Greek text, though it is the order in which they are discussed).
K 310.8 H omits $\dot{\alpha} \pi \lambda \hat{\omega} s$.

K 312.9 H omits катá $\tau \iota$.
K 313.6 After $\dot{\rho} \eta \tau \epsilon \in \boldsymbol{\prime} \boldsymbol{H}$ adds: 'so I will say that the signs, also, are some of them belonging to health and some to sickness; and some belong to the condition which is neither health nor sickness.'
K 313.8 ff . H has the same order for $\nu o \sigma \omega \dot{\sigma} \eta$ signs as for v́ $\boldsymbol{\iota} \epsilon \iota \nu a ́$ signs-viz. present, future, past-where K's text mentions past before future vo $\boldsymbol{\nu} \dot{\delta} \delta \eta$ signs.
 калєíтає $\delta$ ' є́vioтє H adds: 'and although we ourselves have characterized the signs which indicate what is present by the name "indicative" and the signs which indicate something future by the name "premonitory" and the signs which indicate what has been in the past by "reminding".
K 314.15 H omits $\dot{\alpha} \delta \dot{\eta} \kappa \alpha i$ $\sigma v \mu \beta \epsilon \beta \eta \kappa o ́ \tau \alpha \kappa \alpha \lambda o \hat{v} \mu \epsilon \nu$ idícos.
K 315.16 f . H omits $\eta_{\eta} \kappa \alpha \theta^{\prime} \dot{\epsilon} \kappa \alpha ́ \tau \epsilon \rho o \nu$.


K. 317.14 ff . (I) H specifies 'bodies that are at present in good health', where K has v́ชıaıvóvicuv $\mu$ èv $\sigma \omega \mu \alpha ́ \tau \omega \nu$ (Ḥ may perhaps have read $\mu \grave{\epsilon} \nu \nu v \hat{v}, c f$. K 310.2 and 314.7: on the other hand it may be more likely that he was paraphrasing the Greek in order to stress the difference between $\dot{\gamma} \boldsymbol{\gamma} a \iota v o ́ v \tau \omega \nu$ and $\nu o \sigma \omega \delta \hat{\omega} \nu)$. (2) Where in K the contrast is between
 ov̉ $\delta \epsilon \tau \epsilon ́ \rho \omega \nu$ v́ $\pi a \rho \chi o ́ \nu \tau \omega \nu, \mathrm{H}$ contrasts 'bodies that are at present in good health but are suffering from some hidden sickness' with 'healthy' and 'neither well nor ill' (cf. the Latin version in K: sanorum corporum signa, sed quae aut insalubria, aut salubria, aut neutra existunt'). An omission from the Greek text may be suspected.

 cis $\tau \boldsymbol{\prime} i^{\prime} \alpha \mu^{\prime} \rho \eta$. H has: 'we have to apportion innumerable divisions according to the more and the less; only we have collected them within three arbitrary groups.' K 's text is obscure: íá́ $\rho \ell \theta \mu \alpha \underset{\alpha}{\alpha}$ $\gamma \epsilon \in \nu \eta$ in this context presumably means 'equal in number to the kinds of body in the best constitution' (but $c f$. ch. 2 and ch. 4), but then the next phrase $\epsilon \mathcal{\epsilon} \nu \hat{\varphi}$ $\mu \hat{\lambda} \lambda \lambda o \nu$ is hard to understand. H's translation undoubtedly suggests that he read ${ }_{\alpha} \nu \alpha \alpha^{\prime} \rho \iota \theta \mu \tau \dot{\alpha} \gamma^{\prime} \dot{\nu} \eta \eta$.
K 32 I.I6 f. H omits $\pi \alpha \mu \pi o ́ \lambda \lambda \omega \nu \delta \dot{\epsilon} \tau \hat{\omega} \nu \pi \rho \alpha \kappa \tau \iota \kappa \hat{\omega} \nu$.
K 325.11 f. H adds a point about the $\pi \epsilon \rho \iota \tau \tau \omega^{\prime} \mu a \tau \alpha$ ('superfluities'): 'and not concocted'.
K 325.14 Where K has a comma after $\pi \rho \hat{\omega} \tau o \nu$, we need a colon or full stop, the subject of the next main verb being not 'hair', but people of cold constitution (as H confirms).
K 326.1 f., $326.7,326.10,327.1$ and 327.5 : where this is mention of $\pi \epsilon \rho \iota \tau \tau \dot{\omega} \mu a \tau a$ or cognates in the Greek, the Arabic specifies 'in the conduits of the brain'.
K 326.5 Where K has $\dot{\alpha} \pi \lambda a \hat{i}, \mathrm{H}$ has 'lank'. We would expect $\epsilon \dot{v} \theta \epsilon i a \iota, c f$. K 325.12, 326.4 and 327.I. It may
be that $\dot{\alpha} \pi \lambda a \hat{\imath}$ at K 326.5 has been influenced by the same word at K 326.8. Cf. Durling, CPh Ixiii (1968) 57.

K 326.14 H adds 'when you consider attentively his colour'. Probably a deliberate stylistic expansion.

K 329.15 H omits $\mu \alpha \lambda \alpha к о$.
K 330.1 I K has $\dot{v} \gamma \rho o ́ \tau \eta \tau \iota \kappa \alpha \theta a \rho \hat{a} \tau \epsilon \kappa \alpha i$ ov̉ $\pi о \lambda \lambda \hat{\eta}$. H has 'moisture that is clear and unclouded'. (With Greek, cf. ỏ̀ $\iota \gamma o ́ \tau \eta \tau a$ at K 330.16 .)
K 332.2 ff . To the point about the heart (which, if it becomes extremely cold, is still hotter than the brain), the Arabic version adds the converse: 'and were the brain to reach the extreme of heat that is naturally possible in man, it would still be colder than the heart'.
K 334.4 Where K has $\theta \epsilon \rho \mu o ́ \tau \eta \tau o s, \mathrm{H}$ has 'cold' (of the whole body).
K 335.I ff. H appears to omit ä $\gamma \rho \iota o \iota \kappa \alpha i \begin{gathered}\alpha \\ \nu \\ \eta\end{gathered} \mu \epsilon \rho о \iota \kappa \alpha i$ íтаноi каi à $\nu a i ́ \sigma \chi \nu \nu \tau о ь . ~$
K 335 . Io H omits $\mu \alpha \lambda \alpha \kappa о$ ', and has 'not quick' where K has $\tau a \chi \in i{ }^{5}$ (cf. K 334.14, the account of the pulse in the case of the hot and dry heart).
K 337.12 H omits $\xi \eta \rho o ́ \tau \epsilon \rho o \nu$.
K 340.2 H has no equivalent to $\zeta \hat{\omega} \boldsymbol{\nu}$ ( At K 342.10 H has 'body' for Greek ऍ'́ov).
K 340.7 H has 'becomes fatigued and soon leaves off', where K has, rather more simply, $\tau \alpha ́ \chi \iota \sigma \tau \alpha$ סє̀ ${ }^{\prime} \mu \pi \iota \pi \lambda a \mu \epsilon ́ \nu \eta$.
K 342.17 H has-what we expect-the antonym of 'fat', viz. 'and the emaciated', omitted from the Greek text of K.
 'in one state rather than another'.
K 348.6 H has 'when the excess floats on top', where K has $\ddot{\eta}$ є̇ $\pi \iota \pi o \lambda \alpha ́ \zeta o \iota ~ \tau o ̀ ~ \pi \epsilon \rho ı \tau \tau \epsilon v ̂ o \nu ~ a v ̉ \tau o i ̂ s . ~ T h i s ~$ suggests, rather, $\epsilon i \dot{\epsilon} \pi \iota \iota \pi 0 \lambda a ́ \zeta o \iota-$ expressing a protasis, where $\kappa \lambda \dot{v} \delta \omega \nu a s$ ï $\sigma \chi o \iota \epsilon \nu$ is the apodosis ( $+\dot{\alpha} \nu)$. The Greek, as it stands, suggests that the floating to the top of the excess is one of the signs by which the dry stomach can be recognised. The Arabic associates the floating with the 'splashing in the stomach'.
K 349.5 The Arabic makes clear the distinction between the 'bad temperament' affecting the stomach 'from disease' ( $\delta \iota \dot{\alpha}$ vó $\sigma o \nu$ ) and that which is 'natural' ( $\tau \hat{\omega} \nu$ ${ }^{\epsilon} \mu \phi \dot{v} \tau \omega \nu$ ) by using in the first case a verb for 'happens' which incorporates the notion of 'accidentally'.
K 349.18 Where K has $\tau \grave{\text { ò }} \psi v \chi \rho o ̀ v ~ \pi o ́ \mu a, ~ H ~ h a s ~$ 'drinking a little of what is cold'. This gives a double

$\mathrm{K} 350.8 \mathrm{f} . \mathrm{H}$ has 'when he talks', where K has the stronger word $\chi \rho \in \mu \pi \tau o ́ \mu \in \nu 0 \iota$.
K 350.10 ff . Arabic version ('does not have residue to
 $\kappa \alpha \theta a \rho a i ~ \tau \hat{̣ ̂} \phi \lambda \epsilon ́ \gamma \mu \alpha \tau \iota$.
K 350.13 H specifies 'in his trachea', where K has simply av̇тoîs.
K 35 I .8 H has 'hard' where K has $\xi \eta \rho o{ }^{2} \nu$ (though Latin version has 'duri').
K 353.13 f. H has no equivalent to Greek $\boldsymbol{\tau} \boldsymbol{\tau} \boldsymbol{\chi} \boldsymbol{\nu} \boldsymbol{\kappa}$ кóv.
K 354.5 f . H adds 'several times' to 'every day'.
K 356.15 After idéaus, $H$ adds: 'and by the pains and swellings and the change of breath' (cf. K 356.8 , ıо, 356.15).

K 356.17 Where K has $\tau \grave{\alpha} \kappa \alpha \tau \dot{\alpha} \tau \grave{\eta} \nu \tau \rho a \chi \epsilon i ̂ a \nu \dot{a} \rho \tau \eta \rho i ́ a \nu$
vo $\sigma \dot{\eta} \mu a \tau \alpha, \mathrm{H}$ has the more specific term＇swellings＇ （cf．oi $\delta \dot{\eta} \mu \alpha \sigma \iota \nu$ at K 357．6）．
 K）．
 av̉roîs $\pi \epsilon \rho \iota \epsilon \chi o ́ \mu \epsilon \nu a$（as did the Latin version in K ），
 own punctuation suggests）．
K 360.16 f ．H has＇flaccidity and great weakness＇，where

K 361．6 One Arabic MS adds＇and taste＇（cf．K 362.15 ）．
K 36 I .6 ff ．H has＇has become enfeebled＇，where K has

K 361.8 f ．H has＇from its periods or from its conditions＇， where K has каıроі̂S $\tau \iota \sigma \iota \nu, \ddot{\eta}$ тобо́т $\eta \sigma \iota \nu, \stackrel{\eta}{\eta}$ поьó $\eta \boldsymbol{\eta} \boldsymbol{\nu}$（cf．K 361．I 5 ，where H has＇its measure or its state or its time＇）．

K 364．10 The＇fourth class＇is described in the Arabic version－in the text in one MS，in the margin in the other－（＇the class of parts which have their economy of themselves，and are not sources for any others，and no other is a source for them，nor for anything in them＇）where this description is omitted in K （though each of the other three classes is described）．This may be a gloss in the Arabic version：but it is also possible （and perhaps more likely）that some such description was included originally in the Greek．
K 367.9 H adds＇and venomous reptiles＇after＇wild beasts＇（ $\theta \eta \rho i o \iota s):$ a suspected gloss．
K 368.5 ff ．H omits $\tilde{\eta} \theta \epsilon \rho \mu \alpha \iota \nu o ́ \mu \epsilon \nu o \nu, \ddot{\eta} \xi \eta \rho \alpha \iota \nu o ́ \mu \epsilon \nu o \nu$,
 тov́т $\omega \boldsymbol{\nu} \pi \alpha \dot{\sigma} \boldsymbol{\sigma} o \nu$（though he translates them at K 368.2 ff ．）．Given the elliptical character of the phrase $\dot{\epsilon}^{\prime} \kappa \kappa \iota \nu \eta \eta^{\prime} \sigma \omega \omega$ ．．．$\gamma \iota \nu 0 \mu \epsilon \epsilon^{\prime} \nu \omega \nu$ if this material is omit－ ted，this looks more like an omission from the Arabic than a gloss in the Greek．
K 368.9 ff ．H adds＇of the superfluities occurring in breathing＇，a suspected gloss．
K 368.1 I H adds：＇and if that alteration is lasting and great＇before＇it ruins the health＇．
K 369.8 H omits каi тооóтทтоs．
K 371.8 H has＇and the whole body is purified＇，where K has no verb corresponding to＇purified＇and ${ }^{\prime \prime} \lambda_{o \nu} \tau \dot{o}$ $\sigma \hat{\omega} \mu a$ is either accusative of respect or governed by $\kappa \alpha \tau \dot{\alpha}$ ．H gives good sense，but it may not be necessary to supply a verb，and $\tilde{o}^{\lambda} \lambda o \nu \tau \dot{o} \sigma \hat{\omega} \mu \alpha$ is picked up straight away，K $37 \mathrm{I} .9 \tau \dot{\eta} \nu \delta \dot{\epsilon} \kappa \alpha \theta^{\prime}$ ö $\lambda o \nu \tau o ̀$ $\sigma \omega ิ \mu a$ ठıa $\quad \pi \nu o \eta \nu \nu$.
K 37 I .12 H has no equivalent to каi $\phi \rho o \nu \tau i ́ \delta o s$（note also каi before $\phi \theta$ óvov）．
K 372.2 H omits $\mu \eta^{\prime} \theta^{\prime} \dot{v} \pi \epsilon \rho \epsilon \psi v \gamma \mu \epsilon ́ v o \nu$.
K 372．18 There is no trace of $\tau \hat{\omega} \nu \dot{\delta} \mu o \iota o \mu \epsilon \rho \hat{\omega} \nu$ in H （and it does not appear to make good sense）．（ K ＇s Latin version omits．）
K 373.14 H specifies＇diminution of food and drink＇， where K has simply ${ }^{\epsilon} \nu \delta \in \iota a$ ．
 $\sigma \hat{\omega} \mu \alpha$ does not appear in H ．
 has：＇the two feet turned outwards or inwards，and the enlarged head＇．
K 377．1s f．Where K has $\mu \iota \kappa \rho \grave{̀}$ коוло́тŋтаs and $\mu \in \gamma \alpha{ }^{\prime} \lambda a s, H$ specifies：＇when it is larger than it should be ．．．when it is smaller than it should be＇．
K 377．16 f． H adds a gloss explaining кa兀á－
$\lambda \eta \psi \iota s . . . \pi \nu \epsilon v \mu a \tau o s:$＇and the meaning of＂holding the breath＂is that the breath is retained and（then） forced in with a violent effort＇．The meaning seems to be that the chest is constricted so as to exert pressure on the diaphragm and bowels．Cf．K iv 478 where ＇straining at the stool＇is explicitly mentioned in connection with кала入ウ́ $\psi \epsilon \sigma \iota \pi \nu \epsilon v \not \mu a \tau o s$ ．
K 378．5 Where K has simply $\tau \hat{\omega} \nu \delta \dot{\epsilon} \lambda \epsilon \iota \pi o ́ v \tau \omega \nu \mu о \rho i ́ \omega \nu$, $H$ specifies＇as for the members whose number is deficient＇．This picks up $\tau \grave{o} \nu \dot{\alpha} \rho \iota \theta \mu o ́ v$ from K 376．9， and some such specification seems necessary in this passage－just as $\kappa a \tau^{\prime} \dot{a} \rho \iota \theta \mu o ́ v$ is added to $\pi \epsilon \rho \iota \tau \tau \epsilon \dot{v} \epsilon \iota$ in the immediately following passage， K 378．10．
 with $\boldsymbol{\epsilon} \sigma o \mu \dot{\epsilon} \varphi \nu \eta \nu \delta \dot{\epsilon}$（as does the Latin version in $K$ ， despite K＇s own punctuation）．
K 380.16 f ． H has no explanation of the $\delta \iota a \operatorname{\theta } \theta \epsilon \sigma \iota$ in question as the airia $\pi \rho o \eta \gamma o v \mu \epsilon ́ v \eta$ ，though it is referred to as the cause from which comes its development＇．
K 38 I .2 f ．H has＇and that state is（something）other than the disease＇，where the Greek has $\eta^{\nu} \boldsymbol{\nu} \pi \epsilon \rho \delta \dot{\eta} \kappa \alpha i$

K 382.8 ff ．One Arabic MS has no equivalent to the Greek $\mu \in \nu 0$ v́ $\boldsymbol{\eta} s \tau \hat{\eta} s$ aicias：the other has＇remaining in the body＇agreeing with＇putrescence＇（i．e． $\sigma \eta \pi \epsilon \delta o ́ v a, \mathrm{~K} 382.9$ ）．
K 384．17 For Greek $\delta \iota a \pi \lambda \alpha ́ \sigma \epsilon \omega ́ s \tau \epsilon \kappa \alpha i ̀ \theta \epsilon ́ \sigma \epsilon \omega s$, Arabic has＇as for its natural disposition and its participation with［or its collaboration with］what lies near to it＇ （cf．on K 398.8 below）．
K 386.9 ff ．Hexplains $\dot{\epsilon} \pi \iota \delta \iota a \iota \rho \epsilon \in \sigma \epsilon \omega$ ：＇by the increase of the opening of the mouth of the ulcer until it is wide enough＇．And $\dot{\alpha} \nu \tau \iota \delta \iota a \iota \rho \epsilon \in \sigma \epsilon \omega s$ ：＇or by making for the ulcer another mouth from below＇．
K 386.15 There is nothing corresponding to $\tilde{\eta}$ ${ }_{\epsilon} \boldsymbol{\epsilon} \pi \iota \pi \epsilon \pi \lambda \epsilon \gamma \mu \epsilon \epsilon \nu \omega \nu$ in H ．（Cf．K 387.15 f．，where H has ＇when we consider the complex solution of con－ tinuity in the fleshy parts＇．）
K 387.7 K prints $\dot{\alpha} \pi \sigma \boldsymbol{\phi} \dot{v} \sigma \epsilon \omega \boldsymbol{\omega}$ as one word（though the Latin version has a natura）．H＇s version confirms he read it，surely correctly，as two words：＇by the action of nature＇．
K 388．13 Where K has $\tau \dot{\eta} \nu \dot{\alpha} \rho \chi \chi \dot{\eta} \nu$ ，H specifies＇the brain＇．
K 389．12 Where K has $\tau \dot{\eta} \nu \delta \epsilon \epsilon \dot{\eta} \nu \delta \iota \dot{\partial} \theta \epsilon \sigma \iota \nu, \mathrm{H}$ has＇this condition，I mean the deficiency＇．
K 390.1 I K has $\tau \hat{\omega} \nu \boldsymbol{\epsilon} \boldsymbol{\epsilon} \rho \eta \mu \epsilon ́ \nu \omega \nu \mu \epsilon \theta$ ó $\delta \omega \nu$ ，but $H$＇the method I shall explain＇．
 $\pi \rho o ́ \sigma \phi a \tau o s$ ó $\pi \hat{\omega} \rho o s$ v́ $\pi \alpha \dot{\rho} \rho \chi \eta$ ，калá乡аvта $\chi \rho \grave{\eta}$
 ＇then，let the bone that was broken have been restored with a strong restoration，then［in that case］ we must let it be and not concern ourselves with it： and if it happens that its restoration has not become well established and hardened，then we have to break it again，then straighten it，then devise means by which the callus may be established upon it．＇The Arabic version thus clearly distinguishes between two cases（a）when the bone is well＇restored＇，leave it be；but（b）when its restoration is not well established， then break it again，straighten it and then allow a callus to become established．We would get some－ thing closer to this，if the Greek were（e．g．） $\pi \omega \rho \eta \theta \hat{\eta} \nu a \iota \phi \theta a ́ \sigma a \nu \tau o s$（or $\phi \theta a ́ \sigma a \nu \tau \alpha$ ）$\epsilon \hat{a} \nu$（cf．Ḥ＇s

 $\ddot{\epsilon} \tau \iota \ldots \dot{v} \pi \dot{\alpha} \rho \chi \eta)$. But it may be that more has dropped out of the Greek.
K 391.12 Where K has $\tau \dot{\eta} \nu \stackrel{\mu}{\epsilon} \mu \phi \rho a \xi \iota \nu$, the Arabic version specifies that the aim of treatment is opening ('the opposite of the condition itself, that is opening'). The Arabic gives the right sense: $\xi^{\prime} \mu \phi \rho a \xi \iota \nu$ here is the condition being treated ( $f$. K 39 I .9 ), not the aim of the therapy.
K 392.2 Where K has $\dot{\epsilon} \pi i \grave{\imath} \hat{\omega} \nu \dot{\epsilon} \mu \pi \dot{v} \omega \boldsymbol{\nu}, \mathrm{H}$ is more specific: 'as is the case with the pus retained in the chest' (cf. K 392.8, 392.17).
K 392.2 f . Where K has $\dot{\alpha} \mu \epsilon \in \tau \rho \omega \kappa \kappa \in \nu \dot{\omega} \sigma \epsilon \iota, \dot{H}$ has, on the contrary, 'moderate evacuation' (f. K. 392.5 f., 392.7).
 specifies 'by diarrhoea' (also at K 392.12 ).
 'when pus has accumulated in the chest'.
K 393.13 H has 'slight scraping' for K's $\beta \rho a \chi$ tias бтט́廿 $\epsilon \omega$.
K 393. 18 f. H suggests 'deformations which afflict the parts in which those conduits flow in which there is obstruction and constriction', for K's $\mu о \chi \theta \eta \rho o i s$
 appears to have nothing corresponding to $\mathrm{K}^{\text {'s }}$

K 395.7 ff . Where K has both à $\mu \nu \chi a i \hat{s}$ and $\tau o \mu a i ̂ s, ~ H ~$ has merely 'to lance it': H renders the highly compressed sentence that follows: 'till you extracted the excess from it, and to evacuate it perceptibly, you will cause in it, because of that, pain; so, because of the pain, more matter would be drawn into it.' He appears to have understood (if he did not actually



K 395.17 ff. H appears to have nothing corresponding to

 specifies 'got between the homoeomerous parts'. Similarly at 396.12 K has $\kappa a \tau \dot{\alpha} \tau \grave{\alpha} s \mu \epsilon \tau a \xi \dot{u} \dot{\chi} \chi \dot{\omega} \rho a s$ and H has 'in the space between the homoeomerous parts ${ }^{\text { }}$.
K 398.8 Where K has $\theta$ 生 $\sigma \epsilon \omega$ s simply, His more specific: 'its collaboration with other [members]' (cf. K 384.17 above).
K 399.2 There is nothing corresponding to кai àva$\sigma \tau o \mu \omega \tau \iota \kappa \omega \hat{\omega} \nu$ in H (nor in Latin version in K ).

K 400.4 K prints $\mu \boldsymbol{\eta} \tau \iota$, evidently for $\mu \eta \dot{\eta} \tau$.
K 400 . 10 H explains $\epsilon i$ 's $\tau$ orov̂тov: 'I mean, according to the measure by which its heating has been above the mean temperament'.
K 400.13 ff. There is no trace of $\psi u \times \rho o ́ \tau \epsilon \rho o v \ddot{\eta}$ in H : note that the case of what is too cool is dealt with separately at K 400.15 ff., so it is possible that the reference to cooler at 400.13 ff . is an intrusion.
K 401.4 Where K has 'the aim is to achieve this'
 and weak, the Arabic version gives the sense we need:
'then the aim in its cure is to replace what is deficient'. (Cf. sarcire in the Latin version, and $c f$. also $\gamma \in \nu \nu \hat{\eta} \sigma a \iota$

K 402.5 Where K has simply $\dot{\eta}$ àdaip $\boldsymbol{\sigma} \boldsymbol{\sigma}$ s, H has 'the removal of that thing which was generated contrary to the course of what is natural' and goes on: 'and its elimination from the member in which it was generated.'
 'from widening of the canal which descends from that membrane [the peritoneum?] to the scrotum'.
K 403.8 H explains $\mu \epsilon \mu \pi \tau \hat{\omega} s$ : 'that protect the healthy body that is not unharmed, but there is something about it to be criticized [or disapproved].'
K 404.6 There is no trace of $\mu \epsilon \tau \alpha \beta$ ád $\lambda$ ov $\sigma a l$ in $\mathrm{H}:$ in his version $\tau \dot{\alpha} \delta \eta \lambda \eta \tau \eta \dot{\rho}$ са фа́ $\rho \mu a \kappa a$ is taken to be the second kind of фарнак $\dot{\delta} \delta \epsilon \iota$ svvá $\mu \epsilon \iota-c f$. 404.4-rather than the object of $\mu \epsilon \tau a \beta \dot{a} \lambda$ خovoal).

K 405.2 ff . H has 'evacuation that is by way of attraction' for $\dot{\alpha} v \tau \iota \sigma \pi a \sigma \sigma \epsilon \omega \mathrm{~s}$, and 'the evacuation that is by way of [direct] extraction of what exists in the member' for $\pi$ арохє́ $\tau \epsilon v \sigma \sigma$.
K 406.6 After $\dot{\text { án }} \rho \rho \omega \sigma \tau o ́ \tau \epsilon \rho a \iota ~ \mathrm{H}$ adds 'and they make them weak'.
K 406.17 ff. H takes $\mu \dot{\epsilon} \tau \rho \circ o s$ with $\dot{\sigma} \sigma \mu \hat{\eta} \eta \dot{\eta} \delta u ́ s$, and he takes $\epsilon^{\prime} \nu \tau \dot{\omega} \hat{\hat{\omega}} \gamma \epsilon \dot{U} \epsilon \sigma \theta a l$ with what follows ('and when you smell it, you find it of a pleasant odour in moderation, and when you taste it, you find it neither insipid in flavour nor very strong').
K 407.2 H has 'or sweetness' after 'bitterness', as we might expect, but do not find in K .
K 408.14 H has 'on the dissection of the foetus' where K

K 408.16 H has one, where K has two books on dissection of living animals.
K 409. II H specifies two books on the sperm, where K does not give number.
K 410. II $^{\text {I }}$ Where K has simply $\kappa \rho i v \omega$, H expands: 'and I have subjected it to criticism, so that I have sorted out its truth from its error.'
K 4 II I. Io ff. H. specifies the number of books on simples (eleven) and on 'the mixing of medicaments' (seventeen).

## Arabic MSS

We have used Garrett 1075, I. This MS is dated A.H. iI 38 (about A.D. 1726). We have found some indications that the scribe copied a very old MS (see our previous paper, $J H S$ xcviii [1978] 169). We have also used Manuscrit arabe, 2860,2, of the Bibliothèque Nationale. This MS is dated A.H. 676 (about A.D. I277).

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[^0]:    ${ }^{1}$ The Arabic here appears to take Erythraios as an alternative name for Herophilus. Heracleides is omitted.
    ${ }^{2}$ The Latin printed by Crombie, Robert Grosseteste (Oxford 1953) 78, clearly does contain a good deal of commentary, but leaves open the distinction between Galenic text and Haleic commentary. Following Crombie, it seems that Haly left out the extremely Galenic

[^1]:    Cambridge

