

matter of this book to have read my book on plethos; that book itself will indicate the preliminary reading that it in turn requires. No one should be surprised to hear that we need such preparation for a proper consideration of phlebotomy. For a knowledge of the books I have mentioned is necessary for finding out, not only about this remedy, but about all the others as well; so much so, indeed, that if it were possible, without a knowledge of these works, to treat patients correctly, I should not have gone to the trouble of writing them. It was necessary to say this by way of introduction.

Now it is time to begin the argument proper, by considering how many diatheses there are that require evacuation. If one merely enumerates them, having gathered them from one's experience, only to mention them is all the explanation needed. But if one goes by the logical way, it is necessary to find out what is common to all and universally present, and then by dissecting it into classes and differentia, as far as the ultimate varieties, to determine the number of conditions for which evacuation is indicated. Thus we shall demonstrate all the conclusions that can be discovered by the way of logic. K259

4. The function of the art of medicine is both to restore all the natural functions of the parts of the body when they have been corrupted, and to preserve them once they have been restored. Now these corruptions follow upon the natural state; we must therefore both preserve this state while it is still in existence, and restore it when it has been corrupted. Since, then, it has been shown that the primary functions are effected by the homoiomerous parts, and the secondary ones by the organs, you ought to consider what beneficial or injurious effects the humours that are contained in the body may have on its parts. It has been shown in my book on plethos that plethos is of two kinds, both in origin and in terminology. One set of signs indicates dynamic plethos, another the variety due to dilatation of the vessels containing the humours, which some call plethos by filling. Both kinds call for evacuation, whether they occur in a sick man or in one in health. Just as a man who is carrying a load does not, as soon as he begins to feel oppressed and tired, immediately fall down and concede defeat to it, so in the same way when the faculties are oppressed by plethos, it may be that the person has not yet become ill. If, then, some people who are still engaging in their usual occupations complain of feeling heavy, slow, lazy and sluggish, this is dynamic plethos. If, however, after exercise they seem to be distended, as Erasistratus said, and their upper arms and forearms are inflamed, this is an important indication of the other sort of plethos, which, as I have said, some call plethos by filling; for it comes about, and can be recognised, by humours being K260

poured into the vessels. I have pointed out in my books on health that when an irritable sensation develops in the whole body, and particularly in relation to movement, such a state is the result of cacochymia.¹⁹ But this too is commonly seen in those who are still going about their customary duties. Signs may also appear in certain parts, rather than in the whole mass, of the body, indicating conditions in those

K261 parts corresponding to those mentioned as affecting the whole body. Thus we may have a feeling of heaviness, or some sort of ulcerous sensation, which is confined to the head; or the temporal muscles may be in spasm, either as an isolated condition or in association with an increase in heat. Often, again, we have a sensation of weight in relation to the liver, spleen, stomach, ribs or diaphragm; or sometimes, in the mouth of the belly, a feeling of weight, heartburn, nausea, aversion from food, or perversion of appetite occurs. In addition to these sensations, pains settling in any part, whether the result of the concerted attack of a plethos of humours or of windy pneuma, indicate the need for evacuation, as does acrid humour that bites into a part and erodes it. Some pains originate from dyscrasia, with or without an associated flux of humours. In all the conditions just mentioned, the evacuation of the peccant humours or vapours releases the patient from his sufferings, and phlebotomy is not needed at all; it is enough to purge, rub and bathe him, and to anoint him with

K262 some diaphoretic drug. Now, however, we must explain in order what are the conditions that are helped by phlebotomy.

5. Not only do the parts of the animal derive their nourishment from the blood, but the innate heat also owes its continuance to it, just as the fire on the hearth does to the burning of suitable logs, by which we see whole houses made warm. And just as this fire is sometimes harmed if faggots are piled on it indiscriminately, and sometimes if, although not too abundant, they are very damp, or if none are put on it at all, or very few – so also the heat in the heart sometimes becomes less than normal because of the excess of blood, or a great shortage of it, or a cold quality; and sometimes more, either because of a warm quality of the blood, or a moderate excess of it. And whatever the heart may suffer as a result of cold or heat, the other parts of the body immediately share in. Sometimes unnatural heat or cold develops in one particular part of the body, as has frequently been shown in other

K263 works. These conditions originate in two ways: sometimes as a result of hot or cold humours, sometimes from dyscrasia alone. But these localised states of heat and cold, when situated near to the affected part, change with it; they do not extend to the whole body unless they

¹⁹ K vi, 237. For the varieties of plethos see above, p. 12.

have first affected the whole body. If the body is affected in two ways, by hot and cold humours or by cold humours alone, the cold humours are generated by the drink that is taken, and the heat by the action of the mind. Thus in such a case the body is ordered, and what is ordered or undergoes some change is unconcocted for a long time, the genesis of blood fails, and the parts of the belly are the first to be affected themselves. It is when the belly becomes rotten, partly because the nourishment disappears by nature and changes into a sort of putrefaction, and partly because things that rot from within the blood that is putrefied become so, the parts become warmer. And since this is a perceptible heat, together with the pain, since this is the nature of the heat, thus heated is an inflammation of the heart, either because it is hot, it will heat that which is cold by nature. And once it is hot, it readily becomes hotter, when the hearth has been kindled of the body fever. So when the blood is to putrefy, arrives at the heart completely, so as to develop apoplexies originating from the blood to the governor of the body. Inflammation also comes from that which has descended to the belly, swelling that results in a more phlegmatic. V

²⁰ For the innate heat and the fevers, p. 12.

²¹ See the work *On Abnormalities*.

have first affected the heart. Similarly, it has been shown that the heart is affected in two ways: either as a result of dyscrasia, or else by hot and cold humours or a lack of one of these. I have shown that hot and cold humours are generated as a result of the quantity of food and drink that is taken, and of excessive ease or activity of the body and of the mind. Thus in the belly the digestive processes become disordered, and what is taken in becomes too phlegmatic or too bilious, or undergoes some other abnormal corruption, or remains raw and unconcocted for a long time, or is converted into flatus, so that the genesis of blood fails.²⁰ Analogous to these abortions of digestion in the belly are the states of the humours in the arteries and veins themselves. It is well known that anything hot and damp quickly becomes rotten, particularly when in hot places; thus it must be that the nourishment distributed from the bowel, when it is not mastered by nature and changed into useful blood, will be liable to a different sort of putrefaction at another time. And since it is characteristic of things that rot from the heat of their matter to become hotter still, the blood that is putrefying will therefore be hotter, and when it has become so, the part in which it is rotting will itself be perceptibly warmer. And since the adjacent parts are heated at the same time by this perceptible heat, all the surrounding region will be heated, together with the parts thus affected, by the sharp and biting heat, since this is the nature of the heat from putrefaction. If, now, the part thus heated is an important one, capable of extending its own heat to the heart, either because it is near it, or is a vital organ, or because it is hot, it will heat that organ (the heart), inasmuch as the heart is very hot by nature. And once the heart is heated, the whole substance of it readily becomes hot, just as the house round the hearth is heated when the hearth has a large fire on it. The Greeks call such a condition of the body fever. Sometimes the plethos of blood, before it has begun to putrefy, arrives in force at some part, either mortifying it completely, so as to destroy its function, or doing it notable damage. The apoplexies originate in this way, by a concerted rush of a quantity of blood to the governing centre of the animal. Similarly, when it descends on some other part, it causes an abnormal swelling in it. Inflammation also comes from this sort of process. When the blood that has descended on the part is too thick and melancholic, the swelling that results is scirrhus, just as it is flabby when the flux is more phlegmatic. When the flux is bilious it leads to erysipelas.²¹ All

²⁰ For the innate heat and the genesis of the blood, see above, pp. 8-10; for putrefactive fevers, p. 12.

²¹ See the work *On Abnormal Swellings*, above, p. 12, n. 48.

these things are precisely classified for you in the works I have recently mentioned. Now, as I said, applying the things that have been demonstrated to the question before us, I shall show that the argument concerning venesection follows from them. It seems best to start
 K266 from the fact that plethos is of two kinds. The variety known as dynamic plethos readily goes on to putrefy, and of course also sometimes descends on a part, causing abnormal swellings in parts so affected. The other sort, which is known as plethos by filling, also frequently rushes down into parts, leading to swellings, but it is a cause of apoplexies and rupture of veins as well; it is therefore essential to try to evacuate plethos quickly, before it has had a chance to do the patient some grave harm. How the two conditions are to be distinguished, and how to treat them, is described in more detail in my book on health;²² similarly, when fever or bringing up of blood occur as a result of plethos or some of the apoplectic diseases, how to manage them is explained in my books on therapeutic method,²³ for which reason I consider it superfluous to write about them here. For if I were to write here too in the same way as I wrote in those works, I should have to go through the same subject in detail twice, and so prolong my discussion greatly. If, on the other hand, I were to make this account too brief, I should be in danger of suffering one of two
 K267 fates: either to express myself obscurely through brevity, or to omit some useful distinction. But since I did not undertake this work of my own volition, if anything I say in it should turn out to be mistaken, those who asked for it must bear the blame; just as, if it succeeds and proves to be useful, I shall give up the praise to them.

6. Now, therefore, let me take up my argument again. For those going about their normal activities, who have a sense of heaviness or of tension, either in one of the vital parts or in the whole body, evacuation is necessary. And if, where stage of life is concerned, they are no longer children nor have they already reached old age, consider phlebotomy, paying particular attention to the following primary indications. First come the amount of the plethos and its quality, and the strength or weakness of the faculties; then the physical type of the whole body, the season and the region and the patient's previous way of life, and whether he has taken an excess of food or drink, and particularly of nourishing food; whether this is habitual for him or contrary to custom; what exercise he has taken, what evacuations he
 K268 has had, or whether any have been held back contrary to habit; and in

²² This is the work *De Sanitate Tuenda*, K vi, 1-452. R. M. Green has published an English version (*A translation of Galen's Hygiene*, 1951).

²³ *De Methodo Medendi*, K x, 1-1021.

addition to all the quantity of any characteristic signs heaviness, it is clear similarly, to whatever that extent also the said, is called by applies to both varieties bearing in mind provided that the external heat and cold that are part of the is because the two conditions are cold and distension²⁷ of

²⁴ The essence of dynamic humour oppresses the filling, physically distending.

²⁵ The author of *On the Colours* to Aristotle, says (v) yellow, mixing then the four elements are high and low tones. He probably means their colours, except blue.

²⁶ K's text ('provided the heat of the blood is not too hot or cold') is a translation of the Greek text.

Fuchsianus, in his *De Plethore* loco erit, Graecum cum addit, 'dus vero erit hunc in addition of ex before respondet conversioni praesentem locum extrinsecum totum corpus translation reads 'si se habeat, partim reproduces that of the corpus, following the remarkable that Fuchs reproduced it so exactly again appears, used the alternative to the Greek text.

I think the meaning of the plethos can be too hot or cold might cause one to be too hot and too cold an enemy.

²⁷ Reading διατασιν with K (affliction).

addition to all these, whether he has become thinner or fatter. The quantity of any plethos is estimated from the magnitude of its characteristic signs. To whatever extent the patient has a sensation of heaviness, it is clear that dynamic plethos has increased to that degree; similarly, to whatever extent the sensation of tension has increased, to that extent also the other kind of plethos has increased, which, as I said, is called by some plethos by filling.²⁴ The quality – and this applies to both varieties of plethos – you will distinguish by the colour, bearing in mind that colours are characteristic of the humours²⁵ provided that the whole body is in a temperate state with respect to external heat and cold, and particularly with respect to those qualities that are part of the nature of the particular humour concerned.²⁶ This is because the whole body feels colder when the environmental conditions are colder, and warmer when they are warmer; swelling and distension²⁷ of the vessels follow the crowding of humours into

²⁴ The essence of dynamic plethos is that the faculties are weak, so that the peccant humour oppresses them; hence the sensation of weight. The other variety, plethos by filling, physically distends the vessels, so that the patient feels swollen.

²⁵ The author of *On the Cosmos*, a work probably of the first century AD falsely attributed to Aristotle, says (v, 396b) that painting uses the four colours red, white, blue and yellow, mixing them to represent all the colours of nature, just as in the universe the four elements are harmoniously mingled, and in music there is a eucrasia of high and low tones. He probably has eucrasia of the bodily humours in mind, since these are their colours, except that for Galen black bile is dark or leaden-coloured rather than blue.

²⁶ K's text ('provided that...' to 'humour concerned') reads ἐπειδὴν μετρίως ἔχει θερμότητος λείπων σώμα φύσει and is clearly corrupt. La reads ἐπειδὴν μετρίως ἔχει θερμότητος τε καὶ ψυχρότητος τῆς ἐξοθεν ὅλον το σῶμα καὶ προσετι τῶν συνυπαρχόντων τῇ τοῦ χυμοῦ φύσει.

Fuchsius, in his interesting commentary, observes: 'Animadvertendum etiam hoc loco erit, Graecum codicem non tantum esse depravatum, sed & mutilum. Emendandus vero erit hunc in modum': and he quotes the Greek of La exactly, except for the addition of ἐκ before τῶν συνυπαρχόντων. 'Cui quidem lectioni nostra per omnia respondet conversio. Et hanc plane esse legitimam antiquus interpres confirmat, qui praesentem locum ita reddidit: Quando moderate se habet in caliditate & frigiditate extrinseca totum corpus, & adhuc ex iis quae coexistunt humoris naturae.' His own translation reads 'siquidem universum corpus in calore & frigore externo mediocriter se habeat, partim ex iis quae humorum naturae insunt.' K's Latin translation reproduces that of Gaudanus, except that it has *colore* for *calore*, and adds *totum* before *corpus*, following here Ju, which is a modified version of Gaudanus. It seems remarkable that Fuchsius, without possessing the correct Greek text, could have reproduced it so exactly from the Latin version of the 'antiquus interpres', who, it again appears, used La or a closely related MS. The Aldine reads ἐπειδὴν μετρίως ἔχει θερμότητος τε καὶ ψυχρότητος σώμα*φύσει; the asterisk is its customary alternative to the crux. Ch is identical with K.

I think the meaning of the sentence is that the identity of the humour comprising the plethos can be determined from the colour of the body, provided that the body is not too hot or cold because of the state of its environment. Too hot an environment might cause one to think that the humour concerned was a warm one (bile or blood) and too cold an environment that it was cold (black bile or phlegm).

²⁷ Reading διατασις with A, U, M, K's translator, Ju and Fu; Ga, however, has read διάθεσις with K (affectio).

the veins, while where the flesh is involved a sensation either of weight or of tension follows, and indeed also of heat. It has been shown that the weakness or strength of the faculties that govern us is to be judged from the activities proper to them. The faculties in the nerves, and in their origin, the brain, are assessed by the state of the deliberative functions, and those in the arteries and heart by the pulse, while by the good or poor state of nutrition and by the good colour or pallor of the complexion the decision is made concerning the third faculty, the nutritive, which I have shown to proceed from the liver.²⁸ When, therefore, signs of plethos are present and the faculties are in good condition, you will obviously phlebotomise, taking no other factors into consideration when you are dealing with a condition marked by distension; and this applies even more strongly if there is inflammation. But where there is heavy oppression by plethos it is not always desirable to remove blood. It is possible for crude humour²⁹ to collect in the body, in which event it is necessary to consider precisely, not only to what extent the faculties are in good condition, but also to what extent the humour has increased. For when the faculties have already been broken up by such conditions, they are liable, if phlebotomy is used, to sink to their last extremity, so that it is no longer possible to restore them. When this happens the danger is great, and particularly when, in warm weather, there is an attack of fever while the stomach is disordered, or when the whole body is by nature soft and damp in its temperament. Patients of this sort quickly become weakened and worn out, even if a powerful fever does not attack them. If none of these things happens, but it is winter, or the region is naturally cold, or the nature of the patient is rather cold, those who are phlebotomised suffer dreadfully from chilling of the whole body, and the patient falls into one of the troubles that follow severe chilling. Patients in this condition ought not to be evacuated by phlebotomy, but rather with rubbings and anointings that warm moderately, and drinks that cut through the glutinosity³⁰ of the humours and have a moderate warming effect. Preparations that heat powerfully dissolve the faculties too suddenly, and are thus unsuitable for continuous treatment; besides, they often increase the fever at the same time, so that damage is done from this cause too to the faculties. For the same

²⁸ It is extremely important to estimate the strength of the main governing faculties of the body, which proceed from the three divisions of the Platonic soul (see above, pp. 5-6). Where venesection is concerned, those seated in the heart are the most important; hence the significance of the pulse.

²⁹ Crude or raw humour is material, derived from nutriment, that has not been properly cooked or concocted by the innate heat.

³⁰ Crude humour is glutinous because, being undercooked, it is cold.

reason the heating thickness of the humours.

7. Those who have nevertheless have by virtue of which accumulate in the open or be ruptured beginning of spring in the body. The same apoplectics. In the to some other distension synanchic condition than wait for some to those in whom particularly if they are go down every year should be evacuated seized in spring it being subject to the evacuated at the same what sort of concoction accumulate the bilious cholic or phlegmatic equally; in these, these, as you will beginning of spring cured many who have years with pains in at the beginning of people are of the same you will not help purging or phlebotomy crude humours that undertake to treat

³¹ Reading, with La, of

³² Prophylactic venesection blood predominates humoral system (L 6, and ancient medicine disease while the patient

³³ Because blood is the

³⁴ The ancient physicians him. The Hippocratic the physician did not

reason the heating effect of foods and drinks that break up the thickness of the humours ought to be moderate.

7. Those who have been temporarily cured by spitting blood, but nevertheless have a condition in the parts round the chest and lungs by virtue of which, if a slightly increased amount of blood should K271 accumulate in them,³¹ some vessel will again have its mouth forced open or be ruptured – these patients must be phlebotomised at the beginning of spring,³² even if there are as yet no symptoms anywhere in the body. The same applies to those who fall readily into fits, and to apoplectics. In the same way, if we know that the patient is susceptible to some other disease, for instance a peripneumonic, pleuritic or synanchic condition, it is better to phlebotomise in advance rather than wait for some clear sign of plethos to show itself. This applies also to those in whom haemorrhoids have been suppressed, and particularly if they appear somewhat melancholic. And as for those who go down every year in summer with plethoric diseases, they too should be evacuated at the onset of spring. Similarly those who are seized in spring itself with such diseases, some having weak eyes, or being subject to the diseases called scotomatic – these also need to be evacuated at the beginning of spring, after we have first considered what sort of concourse of humours they have. This is because some K272 accumulate the bilious humour more than the rest, others the melancholic or phlegmatic variety, while others again accumulate all of them equally; in these, blood is said to be in excess.³³ You will evacuate all these, as you will also your gouty and arthritic patients, at the beginning of spring, either by purging or by phlebotomising. I have cured many who had already been troubled on and off for two or three years with pains in the feet, either purging away the excessive humour at the beginning of spring, or removing blood. It is clear that such people are of the sort who are temperate in their way of life, because you will not help the immoderate winebibbers and gluttons much by purging or phlebotomising them; they quickly accumulate a mass of crude humours through intemperate living. One really ought not to undertake to treat these patients;³⁴ but where they are cooperative,

³¹ Reading, with La, ὥς εἰ βραχυ ἀθροισθῇ το αἷμα.

³² Prophylactic venesection is undertaken in spring because this is the season in which blood predominates, as we know from *Nature of Man*, the foundation of Galen's humoral system (L 6, 46). In summer bile, a more dangerous humour, predominates, and ancient medicine was far more concerned than we are today with preventing disease while the patient was still in health.

³³ Because blood is the only well-tempered humour; see above, pp. 7–8.

³⁴ The ancient physician evidently felt no obligation to accept a patient who consulted him. The Hippocratic work *On the Art* (L 6, 4–6, 14) makes it clear that in those times the physician did not undertake to treat hopeless cases; as Plato (*Republic* II, 360e)

you will help them most at the beginning of spring, first evacuating them in advance, and then leading them on to exercises and a healthy way of life. You must consider what I have said of these patients to apply also to those who are liable to be seized with the diseases I have just mentioned, such as epilepsy, apoplexy, scotomatic diseases, haemoptysis and melancholy.

- K273 8. Not only is phlebotomy of great benefit in the presence of plethos, either of the dynamic variety or of the kind known as plethos by filling, but it is useful also when inflammation is beginning in the absence of plethos, as a result either of a blow, or pain, or atony of the parts; for the pain attracts blood to it, and frequently laxity of the parts leads to inflammation in the absence of plethos of the whole body. It was shown in my works on the natural faculties that when a part is naturally weak it at once becomes heavy, even if only a small amount of residue should collect in it. And of course it is also true that every part has a faculty by which it attracts things proper to it; it follows, therefore, that it must also have another for excreting things that are foreign, and that this foreignness is twofold, one kind of material being foreign by reason of its quantity, the other by its quality. For this reason, if some part is not weighed down by the humours in it, but nevertheless contains some residues which are abnormal in respect of
- K274 quality, it hastens to excrete them through the veins in it, as if through conduits. Now whether the material thus expelled is bad blood, or some other humour, it must arrive at some nearby part. In this part, one of two things can happen. If the humour is digested or corrupted, it does not flow across to a third part; but if neither of these things befalls it, it can flow again, from the second part to another, and from that part in turn to still another one; and this process does not cease until it descends on some part that is of such a kind that it cannot thrust the excess in it through to another part. This happens to those parts that have the weakest excretory powers of all the parts in the vicinity. They can no longer eject the troublesome matter into other parts, since these do not accept it by reason of the strength in them. I have shown in those commentaries, not only that each part pushes the excess towards its neighbour, but that sometimes the adjacent part accepts it, and at other times sends it back and repels it without receiving it into itself, and in this contest the strongest part wins. This

says, the skilful pilot or physician knows what is impossible in his art and what possible, and attempts the one and not the other. The doctor, Galen says in the *De Methodo Medendi*, should not treat patients who are already marasmic; and in hectic fevers, where marasmus has not yet set in, the relatives should be warned of the danger (K x, 720-1). The ancient physician was more concerned with maintaining his reputation than his modern counterpart is.

is why the weaker due to residues.³⁵ tic also originate i weak, which is or liable to be weigh them, this is push particularly into t through the poros natural faculties th As I have shown, second the retenti tive.³⁸ The glands only the transform Next to the gland since this organ l porous. Next con perhaps even bett of them by reason what it has receiv downward passag brain are stronger and flesh, with w happens in the rh treatment is not e spite of this, ho bloodletting. Whe quality we also use not awaiting the a plethos, namely v from filling. In th bruised, or is for s whenever we exp treatment with whichever we thin

³⁵ For the movement of
³⁶ Cachexia, according to the state of the body, re, everything taken in become swollen.

³⁷ For the glands and Hippocratic work *Gl*

³⁸ Galen's work on the p. 3, n. 6).

³⁹ Hence the danger of at large in the body.

is why the weakest parts of all are the first to be seized with diseases due to residues.³⁵ You may know that the diseases known as rheumatic also originate in a somewhat similar way. When the whole body is weak, which is one of the signs of cachexia,³⁶ the vital parts of it are liable to be weighed down, and even if there is not much blood in them, this is pushed through to the fleshy parts near the skin, and particularly into the glands that are adapted to receive the excess through the porosity of their substance and because they have weaker natural faculties than the other parts have. This is true also of the fat.³⁷ As I have shown, there are four of these faculties: first the attractive, second the retentive, third the excretory, and fourth the transformative.³⁸ The glands and the flesh have the other three very weak, and only the transformative faculty not much inferior to the other parts. Next to the glands the lung³⁹ is the most ready to receive the flow, since this organ has the three powers weak, and its substance is porous. Next comes the spleen. The brain is similar to these, or perhaps even better adapted to receive the flow. It has the advantage of them by reason of its structure, which is adapted for the excretion of what it has received, for it has capacious ventricles discharging by downward passages. In those people in whom the lung, spleen and brain are stronger than the fleshy parts, the fluxions go to the glands and flesh, with weakening of the whole constitution of the body, as happens in the rheumatic diseases. Naturally, therefore, the aim of treatment is not evacuation, but strengthening of the whole body; in spite of this, however, treatment for these patients begins with bloodletting. When the residues are troublesome by reason of their quality we also use purgation, chiefly on those bodies in which we are not awaiting the appearance of the characteristic signs of either kind of plethos, namely weight for dynamic plethos, tension for the variety from filling. In the same way, when some part has been severely bruised, or is for some other reason the seat of incipient inflammation, whenever we expect this inflammation to be severe we begin the treatment with evacuation, either purging or phlebotomising, whichever we think will provide it better.

³⁵ For the movement of residues, see above, p. 11.

³⁶ Cachexia, according to Celsus (III.22.1-3) is a variety of wasting; because of the bad state of the body, resulting from chronic disease, improper treatment or wrong diet, everything taken in is corrupted. Skin eruptions are frequent, and some parts may become swollen.

³⁷ For the glands and brain, and the probable origin of Galen's beliefs, see the Hippocratic work *Glands* (L 8, 556-74).

³⁸ Galen's work on the natural faculties, K II, 1-214, has already been referred to (above, p. 3, n. 6).

³⁹ Hence the danger of pleurisy, peripneumonia and phthisis when there are residues at large in the body.

9. Rightly, then, in the appendix⁴⁰ to the books on regimen in acute diseases we are exhorted to use phlebotomy when the disease is severe and the patient in the prime of life and strong. And Menodotus⁴¹ is wrong in saying that phlebotomy should be approved only in the syndrome known as the plethoric. Quite the reverse; the indications for phlebotomy do not primarily include plethos, but the suspicion that disease is developing. If it appears that it will be severe, we shall invariably phlebotomise, even if none of the signs of plethos is present, having regard to the patient's age and the region and his faculties, which are the only factors to be mentioned in the appendix to the book on regimen. The author mentioned the man in the prime of life to distinguish him from children and the aged; the first and most important indications for phlebotomy are, however, the severity of the disease and the strength of the patient, and it is necessary to say that this, and not the plethoric syndrome, is the principal combination of circumstances for which phlebotomy has always been approved. For the syndrome that increases the severity of the disease is also included among the indications;⁴² the time for phlebotomy is not only when

⁴⁰ I read προκειμένοις with K's Latin translator. There seems no doubt about the correctness of this, since the passage in question (L 2, 398) occurs only in the *Appendix to Regimen in Acute Diseases*. All the MSS, however, as well as Ald and Ch, read προκειμένοις, both here and in line 11, and again at 278, line 15, where, unless they are all in error, the meaning can only be (because of the preposition ἐν) 'the propositions set forth in *Regimen in Acute Diseases*'. La reads (at 277, line 1) ἐν τοῖς προκειμένοις καὶ τῷ περὶ διαίτης ὁξέων which most probably means 'in the foregoing and in *Regimen in Acute Diseases*'. Ju's Latin agrees (as usual) with K's; but Ga has 'Recte ergo admonemur in iis qui exempli causa in libro de ratione victus acutorum proponuntur', and Fu 'Recte igitur in iis quae de victu acutorum morborum proposita & disputata sunt admonemur.'

For further discussion of this *Appendix* see below, pp. 115–18.

⁴¹ Menodotus (probably second century AD) the Empiricist. According to Galen, he had confuted Asclepiades, who paid no attention to facts. The plethoric syndrome comprised distension of the veins, redness and heaviness of the whole body, sluggishness of movement, and a feeling of tension in the limbs, together with, according to some, a sensation of irritation, pain or lassitude, a previous history of physical inactivity and of excess of food or drink, and suppression of some wonted evacuation (K VII, 515–16). This is a mixed bag of signs and symptoms of the two varieties of plethos, together with some, such as the ulcerous or irritating sensation, that are, according to Galen, not symptoms of plethos at all, but of qualitative cacochymia due to biting humours, and of weakness of the faculties (K VII, 547–8, 554, 561).

Galen says Menodotus wrote that the goal of the physician was fame and profit; but Diocles, Hippocrates and Empedocles took a different view, and practised for the love of humanity (K V, 751–2). For Galen's views of Hippocrates, see the work *That the Best Physician is also a Philosopher*, referred to on p. 1. One of the most famous of the Hippocratic precepts urges the physician to give his services to the poor without charge, 'for where the love of man is, there also is the love of this Art' (L 9, 258).

⁴² Galen's meaning is somewhat obscure here. It seems to be that phlebotomy is called for when the signs and symptoms suggest that severe disease will occur in the near future, although it is not yet present; Menodotus would have used it only where the full-blown plethoric syndrome was already established.

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severe disease is already established, but also whenever it is likely to occur. The doctrine Hippocrates enunciated for our instruction has anticipated us; it teaches us that however much we may rightly do once diseases are already present, it is nevertheless better for us to forestall them by action when they are beginning, or about to begin. Thus it is possible to carry over the indications mentioned, and apply them to people in health. You will phlebotomise these people too when it becomes probable that they will be seized with a severe⁴³ disease, taking into consideration their age and their strength; since if someone is liable to suffer from a severe disease, even if no sign of it yet exists anywhere in the body, we think it proper to perform phlebotomy. It is enough to take into consideration the patient's age, together with his strength, so that the three factors upon which the decision is made are the severity of the disease, whether present or expected; the stage of life in the prime, and the strength of the faculties. Perhaps the matter of stage of life may seem to be explained rather carelessly in the appendix to the book on regimen in acute diseases. It is wrong to mention the prime of life alone; one should refer also to the time before it and the time after it, as otherwise two periods, that of childhood and that of old age, would be excluded from the distinction. The period of age, however, can be excluded under the heading of strength, since none is strong at that stage of life. Some physicians have thought that strength was likewise absent in children, but they judged wrongly, as I have shown in other works. We shall phlebotomise, then, if we expect the disease to be severe, or if we see that it already exists or is starting, taking into consideration the strength of the faculties; we shall except only children from the rule, and we shall say that the distinction on the grounds of age drawn by the author of the appendix to *Regimen in Acute Diseases* was rather inadequately expressed. These indications for phlebotomy are all that is needed. When a plethos of crude humours has accumulated to such an extent as to call for phlebotomy, the rule is not broken, since such patients lack strength of the faculties. The sign that patients are unable to bear phlebotomy is this: the complexion of the whole body lacks⁴⁴ the colour that indicates an abundance of blood, and at the same time the pulse shows an abnormality in respect of force and of volume, characterised by a predominance of feeble and small beats.

⁴³ La has an illegible word between *μεγαλῶ* and *μηδεν*. A is quite illegible here, and has a crux in the margin. U and M both have a space after *μεγαλῶ*, followed by *διὸ καὶ*. The corruption perhaps goes back to a common ancestor of La and A, which must have been at several removes because of the widely different readings frequently offered by these two MSS.

⁴⁴ Reading *ἐκπεπτωκυῖ* with La and K's Latin translator.

Now that we have defined three indications for phlebotomy, namely the severity of the disease, whether existing, expected, or beginning; age in the prime of life; and strength of the faculties, childhood excepted, we come to the other criteria for phlebotomy I have recently mentioned, which many doctors have added, indicating the amount to be removed, not whether phlebotomy itself should be undertaken. This is because the decision that one ought to let blood is made from the disease and the time of life and the strength, while the amount of the evacuation is not decided from these alone, but by taking the others into consideration also. These are the syndrome known as the plethoric, and the temperament of the air surrounding us, classified according to season and region; the events of the patient's past life in respect of the quality and quantity of food; whether or not his excretions have occurred, and whether he has taken exercise. We shall look into these distinctions a little later.

10. I shall deal with the distinguishing features of either kind of plethos in the present work, considering whether we shall invariably have recourse to phlebotomy whenever these signs appear in
 K281 someone who is still going about his ordinary activities, or whether this is not obligatory when there is no expectation of grave disease. But whatever my opinion on this may be, you know that you yourselves have often been with me when I have recommended venesection for gouty patients, or arthritics, epileptics, melancholics, or those with a history of haemoptysis, or a condition in the chest predisposing to such a disease, or scotomatics,⁴⁵ or those who are repeatedly seized with synanche or peripneumonia, or pleurisies, or liver diseases, or severe attacks of ophthalmia; in fact, to speak generally, with any severe disease. I say that in all such conditions phlebotomy is an essential remedy that must be applied immediately, as long as the patient's strength and age are also taken into account. These factors, even if sometimes not specifically mentioned, must be taken for granted. And for those patients who have never suffered from any such disease before, because they have all the parts of their bodies faultlessly constructed, you probably know that I propose a twofold way of evacuation: by phlebotomy if they are intemperate in their way of life, without it if they are temperate. This is because it is possible to clear out the plethos quickly with frequent rubbings, baths, walks and
 K282 other exercises, and further with diaphoretic anointings, unless, of course, it should appear to you that there is an excess of thick blood.

⁴⁵ Scotomatic disease (σκότος, darkness) was characterised by giddiness and falling; as we say, 'blackouts'. It might be due to trouble at the cardiac orifice of the stomach (K VIII, 204).

Such a plethos also contains s condition kno than to rely humours prev begins to sick feverish, do n humours in th shade, or anyt If a plethos of there is, in ad and tiredness. consciousness those who hav hoids, even if possible that t they have nev the haemorrh part, and in p them for certa

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⁴⁶ Galen believed

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Such a plethos is usually mostly melancholic, though occasionally it also contains some admixture of what are called crude humours. In the condition known as melancholic excess it is better to phlebotomise than to rely solely on a drug purging black bile.⁴⁶ When crude humours prevail, however, evacuate cautiously before the patient begins to sicken; but if, as I have mentioned before, he is already feverish, do not evacuate at all. You will have an indication of these humours in the leaden tint of the complexion, or a yellowish white⁴⁷ shade, or anything other than red, and in the irregularity of the pulse. If a plethos of these humours has undergone sufficient development, there is, in addition to these signs, a sense of heaviness of the body and tiredness on exertion, with mental sluggishness and a dulling of consciousness. On the other hand you should phlebotomise boldly those who have accumulated blood through suppression of haemorrhoids, even if they have no previous history of severe disease; for it is possible that they are in fact susceptible to some such disease, though they have never yet suffered from it because of the evacuation through K283 the haemorrhoids. And if they appear further to be deformed in some part, and in particular a part of the chest,⁴⁸ you will phlebotomise them for certain, without delay.

11. You know that I have the same opinion concerning women whose menstrual purgation has been suppressed. Evacuation should not be deferred in these patients either; it is not essential, however, to open a vein, for in fact scarifications of the ankles are sufficient to eliminate the excess, since they possess some other power to urge on the menstrual changes, just as venesections at the ankles and hams do. You should always evacuate women who suffer from suppression of the menses from the legs, either by opening a vein or by scarifying. Phlebotomy at the elbow is liable to suppress the purgations of women. Those of them who are of fairer complexion collect thinner blood, and hence derive the greatest benefit from scarification at the ankles. But treat those who are darker by phlebotomy, since they accumulate thicker and more melancholic blood, particularly if they appear to have larger veins; these are found in the more slender and K284 darker women, while smallness of the veins is characteristic of those who are plump and fair, and in these it is better to scarify the ankles than to cut a vein. And indeed these women have small veins in their legs, so that the right amount does not escape even if they are well

⁴⁶ Galen believed that particular drugs purged specific humours; see n. 53 below.

⁴⁷ Reading *ὀχρολευκόν* with La.

⁴⁸ Because of the danger of a concourse of humours settling in the chest, which is more likely to happen if it is weak.

phlebotomised.⁴⁹ You ought not to despise phlebotomy as a revulsive remedy, since you have often seen me, when there is a copious haemorrhage from the nostrils, making use of the remedy and stanching the flow forthwith. It is expedient, then, as you have seen, not to delay until the patient's strength has reached the last stages of collapse, but, when it appears that the appropriate amount has been evacuated, and the force of the rush of blood continues strong, to cut a vein at the elbow, in the right arm if the right nostril is bleeding, in the other side for the left one. At the same time as you do this, apply bandages of fillet-material to the limbs, and a cupping-glass to the hypochondrium on the affected side.⁵⁰ When we do this, as you know, we invariably check the haemorrhage from the nostrils, in spite K285 of having previously tried the drugs recommended in the literature for stuffing up the nose⁵¹ and rubbing on the forehead, and found them all ineffective. Thus, in addition to what was said previously about phlebotomy, this too overthrows the theory of Menodotus,⁵² who believed that the syndrome known as plethoric would put us in mind of the remedy. The condition now under discussion is clearly the opposite of plethoric; we use venesection for it, not as an evacuant, but as a revulsive remedy.

12. Nothing shows so clearly that the medical art is in practice a matter of guesswork as the question of the amount of each remedy. We often know exactly that the time for administering food or drink, whether cold or hot, is at hand; we cannot be sure, however, of how much we ought to give. It is the same with purgatives; we sometimes know for certain that a drug purging yellow bile, black bile, phlegm or serous superfluities⁵³ should be given to the patient; yet we do not

⁴⁹ Body type is very important in Galen's system, since it indicates both the general crasis of the patient and also the temperament of individual parts. As far as the veins are concerned, Galen says in his work *De Temperamentis* that people with broader veins are hotter by nature, and are thus dark and slender; if a fat person has broad veins, he is not naturally fat, but has become so by his mode of life. Those with broad veins also have more blood, and bear fasting better than those with colder natures, who tend to be plump and fair, with narrow veins and little blood. Women tend to be fatter on the whole than men because they are colder by nature, and more sedentary in their way of life (K 1, 604-6). See also section 13, this work, K 289f.

⁵⁰ Galen's rationale for undertaking revulsive venesections from particular sites and sides of the body is discussed in Chapter 8 below.

⁵¹ Reading ἐντὶθεμενον with all the MSS and K's Latin translator.

⁵² See n. 41 above.

⁵³ Specific drugs purge specific humours, in Galen's system, because, being derived from living things, they have the attractive faculty, by which they draw what is similar to themselves. The materialist Asclepiades disagreed, since he denied the natural faculties. In his system, since everything in creation was made up of atoms and the passages in which they moved, nothing could be either cognate or foreign to the body; quantity, not quality, was the only cause of trouble, and the treatment for an excess of anything was merely to reduce the patient's diet. Galen, however, held

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know with any certainty⁵⁴ the amount that should be administered. A K286
 dose⁵⁵ of such preparations cannot be corrected. Once the drug has
 been swallowed and has entered the belly it must of necessity all be
 digested; nor can one, if the patient has already been purged more
 than is desirable, remove any part of what has been administered. The
 greatest advantage of phlebotomy is that you can stop the evacuation
 whenever you wish, and afterwards at any time you choose allow it to
 flow again up to whatever quantity may seem good to you. Hence it is
 better, if there is no urgency, to make the first bloodletting rather
 small, and to perform a second one⁵⁶ – and, if you like, a third – later.
 Thus in cases where extensive evacuation is called for, but the faculties
 are not strong, it is appropriate to divide up the evacuation, as you
 must have seen me doing in patients who have a plethos of somewhat
 crude humours. After I have let a little blood I immediately give some
 melicratum, nicely cooked, with one of the attenuating drugs, hyssop
 or organy or even mint or pennyroyal; one may also give oxymel or
 oxyglycy with melicratum.⁵⁷ After this I take blood again, sometimes
 on the same day, sometimes on the next; at which time I again give one K287
 of the drugs mentioned, in the same way, and remove blood once
 more; and on the third day I repeat the same process twice. When,
 however, there is a plethos of seething blood, enkindling a very acute
 fever, there is need for copious evacuation. One must try to evacuate
 this blood to the point of fainting, keeping an eye on the strength of
 the faculties. I know, for instance, of some doctors who take six
 cotyles,⁵⁸ either all at once or spread over two, three or four days, and
 sometimes on the very first day of the illness, in cases where fever had
 set in about nightfall or in the course of the night, and the food taken
 the previous day had been well digested. I know that I myself have let
 blood at the end of the first day in some patients who attributed
 sweating, or pain in the head or some other part, to an indisposition of
 the previous day, and for this reason took too little food, and were
 beginning to be feverish as night came on. For in those patients who
 appear to you to have a plethos of seething blood, you must try to
 evacuate it as quickly as possible, before it descends on some vital part;

that if a drug purging, say, phlegm was given to a patient suffering from an excess of
 bile, it would purge very little bile and do grave harm; a drug specifically attracting
 bile, however, would do good (K I, 497–500).

⁵⁴ La has the word βεβαιως, which I translate, after ἐπιστάμεθα.

⁵⁵ Reading δοσις with A, U and M. All these MSS leave out ἀλλὰ τοιαύτη, and La is illegible.

⁵⁶ This is the procedure of epaphairesis (repeated removal).

⁵⁷ Melicratum was a mixture of honey and water, or perhaps milk. Oxymel and oxyglycy were made from honey and vinegar.

⁵⁸ About 1,700 ml, or almost half the total blood volume of a small adult.

hence you will not shrink from sometimes opening a vein even during
 K288 the night. What most people do, letting blood only between the
 second hour of the day and the fourth or fifth, is laughable; if it were
 not that I have seen them giving enemas, food and other remedies at
 any time of the night, I should have some hard things to say to them.
 Since, however, they do not observe one and the same restricted
 period of hours for everything they do for all their patients, but act as
 the disease requires, awaiting the time just mentioned only in the case
 of phlebotomy, their error is easier to excuse.

It is appropriate to take patients in this condition, as I have said, as
 far as loss of consciousness. I have seen some of them, from the
 chilling that invariably accompanies fainting, sweat from the whole
 body and pass faeces, after which they quickly recover from their
 disease.⁵⁹ It is good, however, to pay attention to the diminution of the
 pulse, feeling it while the blood is still flowing, as is usually done in all
 patients who are being phlebotomised, so that you will never negligently
 K289 cause your patient death instead of loss of consciousness, a
 thing I know has happened to three doctors. One of them phlebotomised
 a feverish woman, and each of the others a man, into such a
 deep faint that they could not be resuscitated. For this reason it is
 better to avoid copious evacuations unless some great necessity
 demands them. And moreover revulsion, a remedy of no small
 importance and one that is often effected by phlebotomy, becomes
 more effective in proportion as you increase the number of separate
 bloodlettings from different parts. It is better to know this in advance.

13. Recapitulating from the beginning the subject before us, let us
 now consider what we know to be the most essential for those who
 wish to practise phlebotomy without ever doing harm. First one must
 know that the indications for the remedy, which have been mentioned,
 show the need for a larger evacuation when they are increasing; when
 they are becoming feebler, however, they show that one should reduce
 the evacuation proportionately with their decline. The severity of the
 disease, then, together with the strength of the faculties, were the chief
 indications for phlebotomy: the former by showing what must be done,
 the latter by not prohibiting it. (This is
 K290 what some of the newer physicians call a contraindication.) For there
 are times when the patient's condition demands phlebotomy, but the

⁵⁹ In the *De Methodo Medendi* Galen says that in continuous fevers, bloodletting to the point of fainting cools the body greatly, extinguishing the fever forthwith. Nothing could be more pleasant, both to the patient and to the nature that governs living things. He recalls a case in which, after he had performed one of these heroic evacuations, the bystanders exclaimed 'Man, you have slaughtered the fever!', at which, he says, 'we all laughed' (K x, 612).

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weakness of the faculties forbids it. When both of these indications require it, it is, as mentioned earlier, clearly called for, as long as there is no plethos of crude humours in such quantity and of such a kind as to prohibit the use of the remedy. Next, we must consider together with these indications what sort of natural temperament the person has. Those who have large veins, who are moderately slender and neither fair nor soft-fleshed, you will evacuate freely. Those of the opposite type, however, must be sparingly evacuated, since they have little blood and flesh that transpires well.⁶⁰ For the same reason you will not phlebotomise children up to the age of fourteen. After this age, if at any time blood should appear to be accumulating in large quantities, and the time of year is spring and the region temperate, and the nature of the child abounding in blood, you will let blood, especially if there is a lurking danger of peripneumonia, synanche, or pleurisy, or some other acute and severe disease. Generally you will take up to one cotyle of blood at the first operation; if, after this, you find on examining the patient that the strong state of the faculties is being maintained, you will add a further half by way of epaphairesis. K291 You have learned to trust the strong, regular pulse as an infallible sign of strength of the faculties; this applies even more strongly to the large pulse. Thus you will phlebotomise even the seventy-year-olds, if the kind of pulse I have mentioned is present, whenever their condition demands it. Even at this time of life there are still some full-blooded people whose powers are at the same time strong, just as there are others who are dried up and have little blood and bruise easily when any part is injured by a blow.⁶¹ Hence you will not take into account only the sum of years, as some do, but also the habit of the body. Some sixty-year-olds can no longer bear phlebotomy, while some people of seventy still can. But obviously you will remove less from these, even if they appear to be in the same condition as a body in the prime of life.

14. It is best to consider all these matters before cutting a vein, and particularly to think about suppressed haemorrhoids and the menstrual catharsis. Once the vein has been cut and there is a flow of

⁶⁰ See also n. 49 above. The Hippocratic work *Diseases of Women* II gives further information on these physical types (L 8, 238–40).

⁶¹ The text is corrupt, but the meaning seems clear. K's Greek, *μελαινόμενοι*, is not followed by his Latin translator, who read *μαραινόμενοι* and rendered it *arescentes*. All the MSS agree here with K's Greek. A marginal note in Ju attributes the reading *nigrescentes*, which it correctly says is that of the Aldine, to Oribasius. Fuchsius again enlists the help of his old translator: '& in partibus corporis percussi facile nigrescentes. Sic enim legendum, quum in greco sit *μελαινόμενοι*, non *arescentes*, ut alius interpres convertit, qui legit *μαραινόμενοι*. Quam quidem lectionem etiam antiquus confirmat interpres, qui hoc loco convertit facile *nigrescentes*.'

blood, it is necessary to consider the change in it, particularly when there is already inflammation, the reduction in the tone of the flow, and most of all the change in the pulse. This is an infallible⁶² sign, and you must stop the bleeding immediately if it changes, either in volume or by developing any sort of abnormality. What more is there to say about the change towards indistinctness, since you have learned that in this quality there is a sound criterion of the strength, as well as the weakness, of the faculties? In patients who have a large inflammatory focus near the vein that has been opened, it is best to await a change both in the colour and in the consistency of the blood, as Hippocrates has also explained in his book *Regimen in Acute Diseases*, speaking of pleurisy. The blood in inflammation is different from the normal variety, being greatly overheated. If it was previously cruder, it becomes redder and yellower; if, however, it was like this before, then it changes towards a black colour as a consequence of overheating. Hence Hippocrates wrote as follows concerning pleurisy: 'It is necessary to cut the inner vein at the elbow and not shrink from withdrawing a large quantity, until it flows much redder or yellower, or becomes livid instead of clear and red; for either may happen.'⁶³ He establishes the change appearing in the blood as a sign that some from the inflamed part has been received into the vein that has been opened. It is not, however, always desirable to await this; there are times when one ought to stop earlier, for two reasons: either because of the weakness of the faculties or because of the malignancy of the inflammation. Sometimes the vein lets nothing out, being strongly constricted. But if the faculties do not appear to have been dissolved by the evacuation – and you can tell⁶⁴ this by feeling the pulse – it is appropriate to await the change, as long as the person phlebotomised is in the prime of life, and particularly if the ambient air is temperate. These are the two things that are chiefly responsible for the uncertainty about the amount of the evacuation: what the nature of the patient is, since we are unable to determine it exactly, and what sort of temperament of the ambient air will prevail after the phlebotomy. Whenever the feverish heat spreads much of the blood abroad, and the patient is inadequately fed, it must be that the power of the blood to nourish him quickly becomes inadequate, with the result that his faculties are dissolved. The nourishment is used up both because of the temperament of the patient, which is damp and hot, as that of children also is, and because of the air that surrounds him in a

⁶² Reading ἀψευδὲς with La and K's translator. ⁶³ L 2, 272.

⁶⁴ Reading εἶδὼς with the translators of K and Ju; all the MSS have the same reading as K.

hot region and remove less than life, in the case of soft-fleshy time of year into with regions as mentioned earlier seasons and regulations because of in black and white conditions men pounds⁶⁶ of blood with and doing could not be taken two had been taken have resulted. The one pound with elbow, ham or a canthi of the eye flow; nor is there those do who in the second of the

15. If I were to doctors, I should just as I have done to this point in the opinion, since you same now, basis every day in clinic carefully, was those conditions That *kat'ixin* me it is well known

⁶⁵ Climate is far more increased when the of summer and in

⁶⁶ Six Roman pounds

⁶⁷ Bleeding from the haemorrhages from are harmful (L 5, rhages taking place they did good; the vi doubt is expressed downwards, or of 278–80). There is

hot region and the summer season.⁶⁵ For this reason, therefore, we remove less than the plethos would otherwise demand at their time of life, in the case of children; we are guided by the habit of body in the case of soft-fleshed and fair patients like the Celts; and we take the time of year into consideration, during the dog days. It is the same with regions and states of the weather. On the other hand, as mentioned earlier in the case of the opposite conditions – that is, cold seasons and regions – we are on our guard against copious evacuations because of the consequent chilling. Hence we cannot lay down in black and white a fixed amount to be removed in each of the conditions mentioned. I have known myself remove as much as six pounds⁶⁶ of blood from some patients, extinguishing the fever forthwith and doing the faculties no harm; yet in others one and a half could not be taken without some slight injury to the faculties, and if two had been taken from these patients, the gravest damage would have resulted. Thus I know that I have sometimes removed as little as one pound with benefit, and sometimes even less, from a vein in the elbow, ham or ankle, as I have also done from the veins at the greater canthi of the eyes or under the tongue. There is not usually a notable flow; nor is there if one cuts a vein in the foot or in the finger-tips, as those do who intend to treat the spleen by opening a vein alongside the second of the small fingers. More of this later.

15. If I were to write everything that has been said on this subject by doctors, I should need a large book, and would fill it to capacity. But, just as I have done with the other matters that have been explained up to this point in the argument, I have merely reminded you of my own opinion, since you have seen it confirmed in practice. I shall do the same now, basing my argument on things that can be clearly seen every day in clinical practice, which Hippocrates, who observed them carefully, was the first to describe.⁶⁷ The one chief point of them is that those conditions that bleed *kat' ixin* bring the greatest help to the sick. That *kat' ixin* means 'on the same side as the lesion' is generally agreed; it is well known that the words *kat' ixin* are often used in this sense.

⁶⁵ Climate is far more important in Galen's system than it is today. Transpiration is increased when the weather is hot; thus one should remove less blood in the season of summer and in hot regions, such as Egypt.

⁶⁶ Six Roman pounds is about two litres of blood. See nn. 58 and 59 above.

⁶⁷ Bleeding from the left nostril brings relief when the spleen is enlarged (L 5, 86, 94) but haemorrhages from the unaffected side (e.g. from the right nostril in splenomegaly) are harmful (L 5, 554, 654). There are several references in *Epidemics* iv to haemorrhages taking place on the left in affections of the spleen, but no comment on whether they did good; they are noted as if a recognised occurrence (L 5, 144–97). In *Epidemics* vi doubt is expressed whether the rule applies to conditions moving from above downwards, or only in the opposite direction, though the passage is obscure (L 5, 278–80). There is a similar passage in *Epidemics* ii (L 5, 110–12).

Those, however, that bleed on the opposite side do not help at all, and sometimes even do harm by dissolving the faculties without alleviating the disease. A haemorrhage from the right nostril confers no benefit on an enlarged spleen, nor does one from the left nostril benefit the liver; but revulsion, in those submitted to this treatment, shows quick and obvious benefit when performed on the affected side, whereas on the opposite side it does not. When the right nostril is bleeding, a cupping glass applied to the right hypochondrium brings a quick and evident end to the haemorrhage, as does one on the left in a patient bleeding from the left nostril. When you are phlebotomising to achieve revulsion, you will soon see clear benefit from bleedings on the affected side; if you were to cut on the opposite side, however, it would be of no use.⁶⁸

K297 16. So also when the spleen is affected, incision of the vein in the ring finger of the left hand is of benefit, just as it would be if you were to cut the inner vein at the elbow; for evacuation of blood from the left hand helps a disordered spleen considerably. It is better, however, not to let out the appropriate amount at one operation, but to spread it over two days. Indeed I cannot tell why physicians have neglected to phlebotomise patients with diseases of the spleen; for myself, I have always known great benefit to follow, even if one were to evacuate only one pound. One should, however, decide the amount of the evacuation from the aforementioned indications. In pleuritic patients, phlebotomy on the same side as the affected rib has often shown the clearest benefit, while if it is on the opposite side, the benefits are either quite indefinite or are seen only after some time has elapsed. Phlebotomy on the affected side has often checked, within an hour, the severest pains in the eye, when the vein known as the humeral is cut. It is better, and might be tried in all diseases, after moderate amounts of blood have been let, to perform the procedure called epaphairesis, sometimes on the same day when this is practicable, and sometimes on the following one, except when, as previously mentioned, we intend to undertake evacuation to loss of consciousness. K298 When the eyes are affected, cutting the vein called the humeral, or the one branching from it at the elbow, quickly brings clear benefit. When, on the other hand, the ribs, lung, diaphragm, spleen or liver and stomach are involved, the vein is the one that passes through the armpit to arrive at the elbow joint; cut this, particularly the inner vein, or failing that the vein branching from it towards the flexure of the joint. You know, I suppose, that the said vein splits off from the

⁶⁸ The question of letting blood from the side of the body on which the lesion is situated is discussed in Chapter 8 below, pp. 140–4.

humeral vein a little from these three ways of the upper, middle and middle.⁶⁹ The conditions of the lower or the face or head, the branching vein there, and sometimes the bend of the elbow is indistinct. When parts affected is in ones; try, for preference vein. At times, at the elbow joint, prominent; here a phlebotomy on and obvious benefit themselves and t

17. I remember a suburb of Rome t words, in danger this for nearly two attended the rich from phlebotomy was young and the eyes, although discharge and the patches on one, made still worse exacerbated. When I the whole course said that I⁷⁰ was

⁶⁹ See below, Chapter humeral vein is the the basilic, and the

⁷⁰ This is the only (*Mnemosyne* n.s. attention. It requires same text as K's C than the speaker said that he [i.e. which however s only be ἐφ'ἡ. Here (tactfully, for one rushing off to the there.

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humeral vein a little further back, and is connected with it. There are these three ways of performing phlebotomy at the elbow: inner, outer, and middle.⁶⁹ The inner is helpful for those who suffer from conditions of the lower part of the neck; the outer where parts above this, or the face or head, are involved. The middle site sometimes has both the branching veins extending to the end of the arm, and uniting there, and sometimes running to unite quickly with each other at the bend of the elbow. Sometimes one of them is prominent, the other indistinct. When, therefore, the vein that ought to be used for the parts affected is indistinct, you may have recourse to one of the middle ones; try, for preference, to cut the one that branches from the proper vein. At times, again, there is no objection to opening veins lower than the elbow joint, in the forearm, when those at the elbow are not prominent; here again use those on the affected side. Used in this way, phlebotomies on the side of the affected parts sometimes bring quick and obvious benefit, so as frequently to astonish both the patients themselves and their families. K299

17. I remember once being sent for by a certain rich man living in a suburb of Rome to see one of his stewards, who was, to quote his own words, in danger of going blind; he was in great pain and had suffered this for nearly twenty days. There was an Erasistratean physician who attended the rich man's household, who made a practice of abstaining from phlebotomy at all times. On examination I found that the patient was young and full-blooded, and did not yet have any ulceration of the eyes, although the inflammation was extremely severe, with K300 discharge and thickening of both eyelids; he already had some rough patches on one, as a result of which his vision was dimmed, the pain made still worse, and the inflammation and discharge were exacerbated. When I had seen this for myself, and acquainted myself with the whole course of treatment that the physician had undertaken, I said that I⁷⁰ was not able to come to the suburb frequently, and that I

⁶⁹ See below, Chapter 8, pp. 140-1, for Galen's nomenclature and anatomy. The humeral vein is the modern cephalic; this is his outer vein at the elbow. The inner is the basilic, and the middle one is the median cubital vein.

⁷⁰ This is the only likely meaning, and is that of Kühn's Latin, Fu, Ju and Cobet (*Mnemosyne* n.s. 13 (1885) 1) I am indebted to Dr Nutton for bringing him to my attention. It requires the reading αὐτὸς μὲν οὐκ ἔφη. All the MSS, however, have the same text as K's Greek, which can only mean 'he said that he [i.e. some person other than the speaker] could not come'. By emending ἔφη to ἔφην we get the meaning 'I said that he [i.e. the Erasistratean] could not come', and this is the reading of Ald, which however spoils its record by repeating ἔφην at line 10, where the reading can only be ἔφη. Here we must suppose that the Erasistratean was present, and that Galen (tactfully, for once) was saying 'Of course a busy consultant like you can't be always rushing off to the suburbs'. There is nothing else in the account to suggest that he was there.

would need to see the patient at short intervals until the third day; 'So give him to me', I said, 'for these three days.' 'I'll agree to that thankfully', he replied, 'take the man to your house at once.' He must have arrived, I suppose, about the fifth hour, and was at once deprived⁷¹ of three pounds of blood⁷² at the first bleeding, followed by a further pound at the ninth hour. Much relieved⁷³ by these evacuations, he was rubbed the next day with one of the soft collyria mixed with wine, as we usually do in such cases, by interposition⁷⁴ of the rounded end of a probe⁷⁵ under the eyelids. This was done first thing K301 in the morning, then at the fourth hour, and again at the ninth. After these anointings he bathed about sunset, and the next day, after his eyelids had been everted, he was rubbed twice with soft collyrium mixed into a far larger amount of wine, and after this he bathed at evening. Early the next day he met the rich man at a certain place where they usually get out of their carriages,⁷⁶ and saluted him⁷⁷ with his eyes open and free from inflammation and discharge – the same man who, two days earlier, had been unable to open his eyelids because of the discharge and the pain. The thing seemed almost to have taken place by some kind of magic, causing the rich man to exclaim in astonishment at the rapidity of the cure, and all those with him to raise a shout in the same way, not because I had done something great, but at the comparison between what I had done and the efforts of his household physician who had caused such grave harm through his fear of phlebotomy. The patient had needed the crusts and roughnesses to be wiped off his eyelids, which could not be K302 done without using a corrosive drug; and he could not stand such a drug unless he had first been evacuated. I have often said, and proved, that all biting drugs, to whatever parts they are applied, attract a flow of humours and cause inflammation if the whole body is not empty and completely free from residues. The rich man then enquired what magical treatment had taken place, and when he had heard everything that had been done, he gave the Erasistratean physician the title of 'Haemophobe' from that time on. The account includes a demonstration, both of the need to phlebotomise patients with such conditions, which I have not considered in the present work, and of the need to phlebotomise on the same side as the affected

⁷¹ Reading ἀφῃρέθη with Cobet (p. 2). ⁷² About a litre.

⁷³ Reading ἀνακνυσας with La.

⁷⁴ Reading καθ' ὑποβολὴν with La, A and U. LSJ gives the authority of Oribasius for the meaning of interposition or anointing under the eyelid. Collyrium is an eye-salve.

⁷⁵ Reading μῆλης with M. See also K x, 202.

⁷⁶ This account casts an interesting light on transport arrangements in second-century Rome.

⁷⁷ Reading αὐτον with La.

parts, and to cut level of the chest

18. Just as the by phlebotomies that are lower do and ankles. Those in the region of double significant tioned, but above yield to phlebotomy and a plethos of call nephritis, y alongside the a benefited even n being cut. There elbow; for they towards the upper however, it is p menses. When y period is due, s vein or scarifyin then on the next the same time p evacuate thus, a written a special are not on this menstrual flow. dry, chopped u rubbed to make The best time fo been wrapped i more powerful a as the drugs pr time is the pre hundred drachm is best when t mention in pass combination wit of blood from th opened in the h in one day by ar have not arisen

parts, and to cut the humeral veins in lesions of the parts above the level of the chest.

18. Just as the abovementioned parts are benefited, as I have said, by phlebotomies performed at the elbow, in the same way those parts that are lower down than these are helped by venesections at the hams and ankles. Those that are lower than the aforesaid parts are the parts in the region of the hip, bladder and uterus. The kidneys have a double significance, situated as they are below the parts first mentioned, but above these mentioned second, and hence they sometimes yield to phlebotomies at the elbow, when there is recent inflammation and a plethos of blood. In patients with the condition they specifically call nephritis, you should cut the vein in the ham, or the veins alongside the ankles. Inflammatory conditions of the uterus are benefited even more than those of the kidneys by the veins in the legs being cut. There is an additional difficulty with evacuations at the elbow; for they check the menstrual purgations, diverting the blood towards the upper parts of the body. By evacuations from the legs, however, it is possible not only to revulse, but also to urge on the menses. When you wish to achieve this at the time when the woman's period is due, start about three or four days in advance by cutting a vein or scarifying the malleoli of one leg, and draw off a little blood; then on the next day evacuate in the same way from the other leg, at the same time prescribing a reducing diet for the days on which you evacuate thus, and in the four or five days preceding them. I have written a special work on the reducing diet. But even in women who are not on this diet, mint and pennyroyal bring on an abundant menstrual flow. Administer them to the women boiled in melicratum, dry, chopped up, and passed through a fine sieve, and then again rubbed to make them as fine as dust, and sprinkled on melicratum. The best time for the draught is after the bath, when the women have been wrapped in bandages. These are drugs of moderate strength; more powerful are savin and dittany, which are used in the same way as the drugs previously mentioned. Also to be administered at this time is the preparation commonly known as bitter, consisting of a hundred drachms of aloes mixed with six of each of the other drugs. It is best when the patient takes cinnamon. These things deserve mention in passing; yet they are not of secondary importance, since in combination with the evacuations from the legs they promote the flow of blood from the uterus when the ankles have been scarified or a vein opened in the heel or the ham. I have known diseases of the hip cured in one day by an evacuation through the legs; such of them, that is, as have not arisen as a result of cold, but through blood having collected

K303

K304

K305

in the veins in the ischial region. Hence phlebotomy from the ham is more effective than from the ankles in patients thus affected, and scarification brings them no obvious benefit.

19. To put it briefly, incipient inflammations ought to be evacuated revulsively, but chronic ones, where possible, through the affected parts, or failing this through those nearest to them. This is because in those that are starting, one should turn back the fluxion that is descending on them, while in those that have become chronic one should evacuate only the material that has already become fixed⁷⁸ in the affected part. This is best let out through the veins that are connected with those⁷⁹ in the part concerned. Experience also bears out this conclusion. Parts in the region of the throat and trachea which are much inflamed are greatly benefited at the beginning by venesection at the elbow, but after the beginning by letting blood from the tongue; both the veins in it are cut. So too cutting the vein alongside the greater canthus is good for the crusts on the eyes that remain after K306 inflammations. Similarly when a vein in the forehead is cut, heaviness of the head and pains that have become chronic as a result of plethos are usually noticeably relieved; but when they are starting, or are at their height, revulsion at the neck by means of a cupping glass relieves them, sometimes by itself, sometimes when used in combination with scarifications. The whole body should be evacuated in advance. In the same way pains in the back of the head, whether incipient or already established, are relieved by cutting the vein in the forehead. When fluxions are beginning, one should preferably effect revulsion in combination with evacuation; but when, for instance, inflammatory conditions have gone on to induration, evacuate through the affected parts, or adjacent ones. In bodies of which no part is yet affected, but we are evacuating prophylactically at the beginning of spring – in these, if the patient is liable to be seized with feverish diseases in the summer season, our aim is to evacuate their excess, and any part of the body is equally good for the removal of the blood. This applies also if K307 the patient is arthritic in all his joints. But in those who have some part particularly affected and have not undergone prophylactic evacuation, one should not make the evacuation from any part indiscriminately, but it should be done as in those who have already begun to sicken. Hence one should evacuate gouty patients from the elbow, but epileptics and scotomatics preferably from the legs.⁸⁰ If you have

⁷⁸ Reading ἐνοσφηνουμένον, as K's Latin (infixum) suggests.

⁷⁹ Reading ταῖς with La.

⁸⁰ I.e. open a vein remote from the affected parts, the legs and brain respectively, to direct the fluxions away from them.

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recourse to phlebotomy because of suppression of a haemorrhoid, and wish to restrain the bleeding further, you should cut the veins in the arms; but to urge it on, those in the legs. When the menses are suppressed, however, those in the legs are invariably used. This is because the situation where the menstrual purgation is concerned is not the same as with haemorrhoids, where some people may wish to be relieved of such an evacuation while others are glad to retain it. The evacuation from haemorrhoids is in danger of reaching such an immoderate degree as to kill the patient forthwith, or to render him grossly hydropic or cachectic; but nothing of the sort happens with the evacuations from the uterus, as long as they are according to nature. It sometimes happens, however, that even the uterus bleeds from an erosion, and in these patients the aim of treatment is not the same; we do not wish the blood to flow as it does in the menses, but at all costs to stanch it. This rule applies to all those coming to phlebotomy at the beginning of spring; if they have some particularly weak part to which the accumulated plethos extends,⁸¹ evacuate revulsively; where, however, there is no part thus affected, one may let blood from any part one chooses, except in the case of suppression of haemorrhoids or of the menses, as laid down a little earlier.⁸² K308

20. The matter now under consideration has been dealt with virtually throughout the previous account; it is as well, however, to go through everything again now, on the one hand to collect into one passage everything previously said, and on the other to draw the distinctions that have not been drawn. It should be taken as a general rule that one ought not to consider in the first place a time limit of so many days for phlebotomy, as some have written, and some have most ridiculously set at the paroxysm on the third day, when, as they say, we could already have some knowledge of the sort of disease we have to deal with in its variety and character, and its entire nature. Others again lay down the fourth day as the utmost limit for phlebotomy, and within this period they agree in phlebotomising whenever they choose in the intervals between paroxysms. Still others make haste to let blood on whatever days they may define the need for its removal, provided that it is still moving from one part to another, and has not yet become firmly installed in some part that has received the excess. They consider only one factor, whether some corruption of the food digested in the belly may have occurred, or some delay in K309

⁸¹ La appears to omit the word *διήκει*, though the MS is in bad condition here. It is certainly absent in A, U and M.

⁸² A, U and M end the work here and go on to another work of Galen, *On Theriac against Pamphilianus*.

digestion, or, again, whether the food may have been held up in it. Accordingly, when they say that it is necessary to make haste in the case of patients who need evacuation – except, presumably, when there is need for the food and the half-digested juices in the first veins to be digested – they speak very correctly, and are to be trusted. Since, however, we are often called to attend someone only after five or six days have elapsed since the onset, it would be proper to bleed him even though the first opportunity for using the remedy has been missed. For on whatever day you observe the indications⁸³ for K310 phlebotomy in the patient, on that day you will apply the remedy, even if it is the twentieth day from the onset. And what are the indications? The disease severe; strength of the faculties; except in the stage of childhood, and when the ambient air is very hot. Since, in most diseases, the patient's strength will already have been diminished with the passage of time, the opportunity for phlebotomy is lost because of the number⁸⁴ of days that have elapsed; this, however, is not a primary⁸⁵ effect, but is due to the intervention of another factor, namely the antecedent dissolution of the faculties. Hence, if even on the second day after the onset the powers should appear to be dissolved, we shall refrain from phlebotomy.

21. Again, I think it is clear that on the particular day on which we are to phlebotomise we ought to watch out for the abatement of the fever; but this is not clear to some people, the sort who order phlebotomy only at daybreak, or up to the fifth and sixth hour at the latest. If, however, anyone calls to mind what has been said previously in the whole of this work, he will make no such mistake, but K311 will phlebotomise at any hour of the day and throughout the night, taking as his indication the decline in the individual paroxysms in patients with fever, and the need for the remedy – because of ophthalmia or some other such condition – in those without it; not the abatement, seeing that fever is totally absent in these, but the severity of the pain or inflammation or the patient's whole condition, in which there is need for phlebotomy. But where nothing of this kind either urges or forbids us, it is best to phlebotomise at daybreak, not immediately after patients have risen from sleep, but after they have been awake for about an hour, and it is said that it is better for some patients to bathe, and if they do, that some of them should take a walk before doing so. In the case of those in whom we have recourse to

⁸³ Here, as in several other places, I have rendered σκοπός by 'indication', since the meaning seems unmistakable.

⁸⁴ Reading πρὸς τοῦ πλήθους. La reads ἀναιρεῖται ὡς πληθεῖ. ⁸⁵ Reading πρῶτον.

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phlebotomy at the beginning of spring, I have known myself phlebotomise some, in expectation of fever, even after they have finished some of their customary tasks, whether in the schools, the workshops, the forum or the home. As for the time for epaphairesis, in those patients in whom we decide simply to evacuate, this should take place on the same day; but for those who are revulsed,⁸⁶ it is better that it should be done on two successive days. You should monitor the strength of the patient in all such cases, by feeling his pulse, since some patients are sensitive where strength is concerned, so that they cannot bear copious evacuation. In such cases, the patient should be allowed to recover⁸⁷ on the first day, and epaphairesis should be performed on the second.

K312

22. I have shown elsewhere that the ancients applied the term vein to arteries as well, and this was agreed by others before us. Because of this, and because the subject-matter would be similar, and in the interests of brevity of expression, I thought it better not to write a separate book about arteriotomy, but to make this addendum to the work on phlebotomy, in that part where I consider which veins one should cut when particular parts are affected. For just as I have shown how certain veins correspond to certain parts, so also the practice is for physicians to cut the arteries in the temples and those behind the ears; those in the temples in the case of fluxions of the eyes, when these are hot and spirituous, and those behind the ears chiefly in scotomatics and patients who suffer from chronic hot and spirituous⁸⁸ pains in the head. Some have already used arteriotomy behind the ears for other long-established conditions in the region of the head.⁸⁹ But they have not used it where another part is affected, although many parts in fact require it more than they do phlebotomy; since when hot and spirituous blood causes trouble through being crowded into the arteries, there is need for the arteries common to the affected parts to be cut. Since, however, the arteries are hard to stanch, doctors do not dare to cut them, and where some, while performing phlebotomy, have inadvertently wounded an artery, they have had difficulty in stopping the haemorrhage. When they do the best they can, an aneurysm develops in the incision scar.

K313

⁸⁶ K's Greek omits a line, which is translated in his Latin version. La reads ἐφ' ὧν μὲν ἀπλῶς κενῶσαι βουλομεθα, καὶ κατὰ τὴν αὐτὴν ἡμέραν γινεσθῶ ἐφ' ὧν δὲ ἀντισπασεταὶ κἀν δύο ταῖς ἐφεξῆς ἡμέραις γένηται βέλτιον ἔστι . . .

⁸⁷ Reading ἀνακτησάμενον with La.

⁸⁸ Spirituous because the arteries, in Galen's system, contain pneuma (spiritus) as well as blood. It is not clear what the characteristics of a spirituous pain are.

⁸⁹ Aretaeus performed arteriotomy in front of and behind the ears in epilepsy (vii.4.2).

been held up in it. make haste in the presumably, when es in the first veins be trusted. Since, uly after five or six oper to bleed him remedy has been indications⁸³ for apply the remedy, And what are the ulties; except in the very hot. Since, in y have been dim- for phlebotomy is ed; this, however, ention of another aculties. Hence, if ould appear to be

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y 'indication', since the

⁸⁵ Reading πρῶτον.

23. I have, however, also known patients to die because of the artery that underlies the inner vein at the elbow; some quickly, K314 because of the tourniquet that was put round when the doctors wished to check the haemorrhage, with resulting gangrene, while others expired later while undergoing surgery for their aneurysms; for in the course of this operation it is necessary to tie off the vessel with a ligature. For these reasons doctors avoid the arteries that are notable for their size, while they also shun the small ones as being unable to effect anything of any importance. Nevertheless I have often seen these bring no small benefit, and at the same time to cicatrise completely without an aneurysm. Even if the artery is larger, however, it will also cicatrise without an aneurysm if it is cut completely through, and this procedure also often prevents the danger of haemorrhage. It can be clearly seen that the whole artery is cut⁹⁰ obliquely right through its whole substance, and the two parts are drawn up away from each other, the one above the site, the other below it. This also happens with veins, but only to a moderate degree, and always far more with arteries than with veins. I shall now tell you how I got the inspiration to have recourse to arteriotomy. Urged on by certain K315 dreams I had, two of which were particularly vivid, I went for the artery in the space between the index finger and thumb of the right hand, and allowed the blood to flow until it stopped of its own accord, as the dream commanded. Not quite a pound escaped. Forthwith a long-standing pain was relieved which had oppressed chiefly the part where the liver meets the diaphragm. This happened to me in my youth. And a worshipper of the god in Pergamon was relieved of a chronic pain in the side by an arteriotomy performed at the extremity of the hand; he also came upon this as the result of a dream. In another patient who had suffered a laceration of an artery in the ankle, the flow of blood did not cease until I was called and cut the entire artery through, after which I used a preparation made from aloes, frankincense and white of egg compounded with hare's fur,⁹¹ and the wound healed without an aneurysm by the mouth of the artery becoming surrounded with flesh. The patient, who had suffered for four years from a good deal of pain in the hip, at last recovered from it. These experiences persuaded me often to open K316 arteries in the extremities of the limbs, and indeed in the head too, in the case of all pains that seemed to have their origin from a hot and spirituous quality, and particularly in the membranes.⁹² In these, the

⁹⁰ Reading διεχόπη.

⁹¹ The fur would have provided a framework for a clot to form on.

⁹² Presumably the peritoneum and pleura.

pain has a pricking sensation is local region, and the tension.

⁹³ Reading μόνον.

pain has a pricking quality and spreads out gently, since the pricking sensation is located in one part as if this were the centre of the affected region, and the whole part⁹³ round this centre has a sensation of tension.

⁹³ Reading *μυοῦ* with La. K has *μυός*, 'muscle', which makes less good sense.

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