A. CORN CELSUS

OF

MEDICINE

IN EIGHT BOOKS

TRANSLATED

WITH NOTES CRITICAL AND EXPLANATORY

BY

JAMES GRIEVE, M.D.

A NEW EDITION

1814

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Transcriber's notes:

This e-book has an unusual structure, being a compilation of eight smaller books accompanied by eight related sets of *numbered* explanatory notes provided by the author. It also contains several hundred footnotes scattered throughout the text (many being Greek spellings of words in the text). These have been given *alphabetic* labels and are now grouped together as endnotes. All notes have been hyperlinked to facilitate access. Hyperlinks have also been added to index items and to the table of contents.

Numerous asterisks are present in parts of the text; these represent uncertain quantities, not footnotes, as explained in notes on p. xxxii. The text also contains archaic characters that may not display correctly with all viewing devices or fonts. For best viewing, the device's character encoding should be set to Unicode (UTF-8), and one of the following fonts selected: Arial Unicode MS, DejaVu, Segoe UI Symbol or FreeSerif.

The text has been preserved as in the original, including inconsistent punctuation, capitalisation and hyphenation. Archaic and inconsistent spellings have been retained except where obviously misspelled in the original. A list of these and other corrections has been appended at the end.

A. CORN. CELSUS

OF

MEDICINE

IN EIGHT BOOKS.

TRANSLATED

WITH NOTES CRITICAL AND EXPLANATORY

BY

JAMES GREIVE, M.D.

A NEW EDITION.

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1814.

TO

MR SHARP,

SURGEON TO GUY'S HOSPITAL,

FELLOW OF THE ROYAL SOCIETY,

AND

MEMBER OF THE ROYAL ACADEMY OF SURGERY
AT PARIS.

SIR,

The favourable opinion you have been pleased to express of the following translation, and the trouble you have taken to revise the chirurgical part, are obligations, which I embrace this opportunity of acknowledging with the highest pleasure.

And though I had not received such marks of your friendship, yet there is no person, to whom a translation of CELSUS can be more properly addressed; since no writer in this age appears to have a more just esteem for this excellent author, or to have imitated his conciseness and elegance, with so much success.

I am,

with great esteem,

SIR,

your most obedient,

humble servant,

JAMES
GREIVE.

LONDON,
January 26th, 1756.

PREFACE.

It has been a question much debated, whether, and how far the writings of the ancient physicians are of service to direct our practice in the cure of diseases; but without repeating what has been already said on this point, I imagine their usefulness may be inferred from this single consideration, that the mechanism of the human body being always and every where the same, a faithful history of diseases must necessarily be one of the surest guides to the application of proper remedies. Moreover, if the diagnostics and prognostics be of the greatest moment in physic, and are only to be collected from long and accurate observation, then the records left us by the ancients, who were so assiduous in their observations, so clear and exact in their descriptions, must be allowed to contain a valuable treasure of medical knowledge.

We have seen, in the present age, many learned physicians, who, though they readily admit the improvements of the moderns, nevertheless apply themselves with great industry to the study of the ancients; and indeed, to say nothing of the superiority of some of the ancients in stile and composition, as a matter of taste, I think it can hardly be denied, that a man, capable of making proper allowances for the variations in respect of climate and manner of living, may receive great benefit from the materials left us by these ingenious writers of antiquity, and find many hints, which,

pursued with diligence, and applied with caution, may both correct and enlarge his practice.

Celsus is justly esteemed one of the most valuable amongst the ancients. He is so often quoted, with approbation, by our best writers in physic, and so much admired by the learned world for propriety, ease, and elegance, that it is a needless attempt in these days to draw his character. However, he is so little mentioned by the ancients, that our curiosity cannot be gratified with any particulars of his life; nor can we even determine what was his profession, if it does not appear from his writings.

Quintilian often mentions a treatise of his upon rhetoric, which though he hardly ever quotes, but where he differs from him, he allows to be composed with accuracy. But whatever he thought of his oratory, he gives an honourable testimony to the extent of his learning. For to persuade his student of eloquence to make himself master of all the sciences, after mentioning the greatest geniuses that ever appeared in Greece or Rome, as Homer, Plato, Aristotle, Cato the censor, Varro, and Cicero, he adds, “Why should I name any more instances? when even Cornelius Celsus, a man of a moderate share of genius, has not only composed treatises on all these arts, but has also left precepts of the military art, agriculture, and medicine. The bare attempt requires us to believe he understood all these subjects: but to give perfection to so great a work is a difficult task, to which no man was ever found equal[A].”

Some have complained of the partiality, or jealousy of the rhetorician, who allows Celsus only a

moderate share of genius. Others esteem it no diminution to be placed in a rank below the writers above named. Without doubt, this would do him very great honour: but if we even take the character literally, still we are to consider Quintilian as having every where in view the perfection of oratory. Now this, it should appear, Celsus hardly affected, by his confining the orator to questions in dispute[B]; which in great measure excludes the descriptive and moving parts of the art: therefore Quintilian's man of middling genius may be a perfect writer in the instructive manner, though he want the qualifications for the bar or the forum. But to do Celsus some farther honour, may it not be supposed, that had Quintilian been as competent a judge of his medical, as of his rhetorical writings, he would not have stiled him, *Vir mediocri ingenio*. I have made bold to hazard this observation from an opinion, that none but a physician can form a just idea of the excellence of this work; much less could any but a physician be the author of it. Celsus the physician might very well write on agriculture, &c. but it by no means follows, that Celsus, not versed in the practice of physic, could have written accurately on diseases. If then this notion be just, it may reasonably be concluded, that his medical writings were the most perfect, as being the fruit of his principal and particular studies.

Columella (*De re rustica*) often quotes him with great deference to his authority; he equals him to the most learned writers on husbandry; and when he is correcting a vulgar error, expresses his surprise that Cornelius Celsus could be misled, "who was not only

skilled in agriculture, but took in the whole compass of natural knowledge[C].” I shall not recite all the passages, where he mentions Celsus, but cannot help transcribing one, it is so expressive of our author’s manner. It is on the article of bees, “concerning which (says he) it is impossible to surpass the diligence of Hyginus, the profusion of ornaments in Virgil, and the *elegance* of Celsus. Hyginus has with great industry collected the precepts, which lay scattered in the ancients; Virgil has adorned the subject with poetic flowers; and in Celsus we find a judicious mixture of both these manners[D].”

From Columella’s mentioning Celsus as a contemporary, but not as a living writer[E], and our author’s speaking of Themison in the same manner[F], Le Clerc infers, with great probability, that Celsus wrote towards the latter end of the reign of Augustus, or at latest, in the beginning of Tiberius; in which last period he is placed by Fabricius[G]. And that he cannot have been later, appears not only from these authorities, but almost undeniably from the purity and elegance of his style, more nearly allied to the Augustan, than any of the succeeding ages.

Both Columella and Quintilian seem to speak of him as a Roman, and indeed our author himself, when he is giving the Greek name for any distemper, and is to add the Roman, frequently uses this phrase, *nostri vocant, our countrymen call it*, or some other expression of the same nature[H].

We have seen by the above quotations, how many treatises were composed by Celsus, which have all

perished in the barbarous ages, except this work on medicine; which from the manner of its beginning, *Ut alimenta sanis corporibus agricultura, sic medicina ægris sanitatem promittit*, seems to have immediately followed his book on husbandry: for this easy transition is very common with our author in connecting different subjects. What confirms this is, that H. Stephens, upon the authority of an ancient manuscript, has prefixed as the title, *Aurelii Cornelii Celsi de re medica libri octo; operis ab eo scripti de artibus pars sexta*. It would be still more evident, if we could depend upon the manuscript in the library of Alex. Paduan: in which, at the end of the fourth book is written, *Artium Cornelii Celsi liber nonus, idem medicinæ liber quartus explicit feliciter*[I]. For his agriculture contained five books[J], with which the first four of this work make up the nine.

Every trifling circumstance relating to our author has employed the industry of his learned commentators. The English reader will therefore forgive me for observing, that in most of the manuscripts, his name is written A. Cornelius Celsus. And Rubeus informs us, the ancient manuscript in the Vatican library has this title, *Auli Cornelii Celsi liber sextus, idemque medicinæ primus*. As *Aurelius* was the name of a Roman family, it is not probable that this would be his praenomen; on the contrary, *Aulus* is found to be a common praenomen in the Cornelian family[K]. For these reasons, I read his name A. that is *Aulus, &c.* instead of *Aurelius*, as most of the printed copies have it.

From our author's admirable abstract of the history

of physic, it is easy to see he had studied and thoroughly digested the writings of the preceding physicians, and been attentive to the practice, as well as to the arguments of the several sects. We have no reason to doubt he made the best use of them; for we see that he confined himself to no one party, but selected from each what he judged to be most salutary. Though he has quoted many authors, sometimes with a view to recommend their practice in particular cases, at other times to shew the impropriety of it; yet through the whole, Hippocrates and Asclepiades seem to have been highest in his esteem; but he does not give up his judgment implicitly to these for he often leaves both, and advances very good reasons for differing from them. He ingenuously owns[L], that he has borrowed the prognostics from Hippocrates, “because,” says he, “though the moderns have made alterations in the method of curing, nevertheless they allow, that he has left the best prognostics.” With regard to the critical days, he entirely condemns his doctrine, and follows Asclepiades in rejecting the notion as idle and chimerical[M]. But from both these authors he dissents in his rules about bleeding.

It would be superfluous for me to prefix to this translation a general view of Celsus’s practice in the various diseases; for besides that this is already done by the learned Le Clerc[N], our author’s method is so clear and concise, that the reader will acquire, with ease, the most perfect idea from the book itself.

Whenever he differs in opinion from writers, whose authority he otherwise reveres, we find his reasoning modest, concise, close, and admirably well adapted

to the subject in dispute; but the delicacy of his expression, when he condemns others, and the caution with which he avoids speaking of himself, have led some to believe he was not a practitioner: though the strongest argument against his having practised physic is drawn from the silence of Pliny, who names Celsus, in several books, among the authors from whom he took his materials, and never ranks him in the list of physicians, whom he separates from the others. But I am surprised it has escaped the observation of the critics, that these catalogues of physicians consist only of foreigners, whom Pliny distinguishes from other foreigners, who were not physicians; whereas Celsus stands always amongst the Romans. Now Pliny, in his list of Roman writers, has not noted their several professions: for in most of the places, where we read the name of Celsus, we also find that of Antonius Castor, without any mention of his profession, though Pliny himself in another place tells us[O], he was a physician of great reputation, whom he saw living in retirement, and cultivating a kind of physic-garden, when he was above an hundred years old. Thus, the name of Antonius Castor would have been lost with his writings, notwithstanding the figure he made among his contemporaries, had he not happened to be mentioned by Pliny. And hence it appears, that nothing can be inferred from the silence of Pliny and the other ancients, in regard to the profession of Celsus; though he should not be Cornelius the physician, mentioned by Galen, as Le Clerc thinks it probable he is.

I might have urged many passages in this book to

prove that he was a physician, if I had not reason to think the present age is already satisfied in that point. There are two, however, so remarkable, that they ought not to be omitted. When our author is considering the proper time for allowing nourishment, after saying that some gave their patients food in the evening, he gives reasons against that method, and then adds, "*Ob haec ad mediam noctem decurro*, i. e. For these reasons I defer it till midnight." Thus most of the older copies read, and also Morgagni's manuscript; so that Linden is not easily to be forgiven for making alterations in so material a place[P]. In the other passages there is no variation in the reading. In that species of the ancyloblepharon, where the eye-lid unites with the white of the eye, our author, after describing the method of cure, immediately adds, "*Ego sic restitutum neminem memini. Meges se quoque multa*, &c. *i. e.* I do not remember an instance of any person cured in this way. Meges also has told us that he has tried many methods, and never was successful, because the eye-lid always united again to the eye[Q]." The form of expression here used by our author, in a manner peculiar to a practitioner, would come very improperly from a mere compiler. The connection of these two sentences by *quoque* seems to put our author's own observation upon the same footing with that of Meges, whom he quotes on several occasions as a most accomplished surgeon[R].

It may not be amiss, however, to take notice of a distinction Celsus makes between two kinds of professors of physic. When he is shewing the necessity of circumspection in the physician, he adds,

“From[S] these things it may be inferred, that many people cannot be attended by one physician; and that the man to be trusted is he, who knows his profession, and is not much absent from the patient. But they, who practice from views of gain, because their profits rise in proportion to the number of patients, readily fall in with such rules, as do not require a close attendance, as in this very case. For it is easy for such as seldom see the patient, to count the days and the paroxysms: but it is necessary for him to sit by his patient, who would form a true judgment of what is alone fit to be done, when he will be too weak, unless he get food.” As his censure is so severe upon a practice, which he thought too extensive, it is natural to suppose, that his was confined to his acquaintance, and that his fortune and generosity rendered him superior to the view of living by the profession.

To all the later copies of Celsus is prefixed an index of the several editions, which makes it needless for me to give an account of them. All the older ones, printed in the fifteenth and sixteenth centuries, abound with numberless gross errors, that in many places utterly destroy the construction. These, Vander Linden undertook to correct, and the authorities he used for that purpose are contained in a catalogue annexed to his preface, in which he tells us he has made very few changes from his own conjecture, and none of these, but where the subject evidently required them. In the dedication he says, “Who would imagine, that after the diligent labours of so many illustrious men, as Egnatius, Cæsarius, Constantine, Stephens, Pantinus, Ronsseus, and

Rubeus, I should have corrections to make in more than two thousand places?”

As it was proper I should translate from one particular edition, I chose for that purpose Linden’s; or Almeloveen’s, who has followed him almost in every letter; as these are generally esteemed by far the most correct: though it must be owned, that Linden has made many alterations without necessity, and sometimes for the worse. Where the sense was either obscure or inconsistent with the context, I have often been assisted by the more ancient editions. On such occasions I have given my authority and reasons in the notes. In passages where I found a reading in the old copies much preferable to Linden’s, but not altogether necessary upon account of the sense, I have marked it in a note, without adopting it into the next.

There are very few places, where I have ventured to alter the reading on my own conjecture, and these are all noted in the margin, where I have assigned my reasons, which, I hope, will convince the learned reader. My notes will shew in how many instances I have been obliged to the excellent epistles of Morgagni. This learned and ingenious author has, in my opinion, entered more into the spirit and true meaning of Celsus, than any of the preceding commentators[T].

Had there been so correct an edition of Celsus, as I think may be made, with proper judgment, from the editions and manuscripts extant, it would have shortened my labour.

That Celsus divided his books into chapters, appears

from several passages: whereas no person, as far as I can find, pretends, that the marginal contents came from the author himself. The editions differ in these; but as it is of small importance, I have not troubled the reader with any remarks on that article. Where I found those of Linden evidently wrong, I have endeavoured to supply the defect.

With regard to the materia medica, the notes are drawn chiefly from Pliny and Dioscorides, whom I esteemed the best authors on that article. When I have given English names to any of the simples, I follow the most judicious moderns; though it must be remembered, that many of them cannot be determined with absolute certainty.

Through most of the compositions the text is miserably corrupted; and what is worse, I do not find, that by comparing the various editions this part can be restored. I had once some thoughts of labouring this point particularly, but as it would have been expected I should support every alteration with proper reasons, and as I despaired of executing it so, as to meet with universal approbation, and after all it would have been more a matter of curiosity than of real use, I omitted that part of my design; besides, this must have considerably increased the number of my notes, which I have endeavoured should be as few as the nature of the undertaking would admit of. For these reasons I have closely adhered to the text of Linden, without even departing from it, where the nature of the whole composition will evidently demonstrate the proportions of several ingredients to be highly incongruous.

It has been my principal care to convey the precise meaning of my author, and also to preserve the genius of his style, where the English idiom would allow. I have likewise been careful not to wrest any expression of Celsus, in order to deceive the reader into a greater opinion of his knowledge, than he really deserves. His merit is sufficiently great without pretending to find in him any discoveries, the honour of which is due to the moderns. Every man of learning, who is acquainted with the state of physic among the ancients, and knows how far it differs from the modern, must be sensible of the difficulty of translating an author so elegant and concise, with the strictness necessary in a work of this nature. Such judges, I hope, will censure the faults, which cannot escape their observation, with the candour inseparable from true criticism.

It only remains, that I return thanks to my ingenious and learned friends of the faculty, who have favoured me with their opinions on several passages, particularly to Dr. Maghie of Guy’s hospital.

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ROMAN MEASURES OF CAPACITY FOR THINGS LIQUID, REDUCED TO ENGLISH WINE MEASURE, THE WINE PINT HOLDING 28 $\frac{7}{8}$ SOLID INCHES.

No. I.

						Pints	*Sol. in. dec.*
Ligula						0, $\frac{1}{48}$	0,117 $\frac{5}{12}$
4	Cyathus					0, $\frac{1}{12}$	0,469 $\frac{2}{3}$
6	1	Acetabulum				0, $\frac{1}{8}$	0,704 $\frac{1}{2}$
12	3	2	Quartarius			0, $\frac{1}{4}$	1,409
24	6	4	2	Hemina		0, $\frac{1}{2}$	2,818
48	12	8	4	2	Sextarius	1	5,636

Possibly No. I. may be better understood in the following form.

No. II.

Ligulæ.		*Cyathi.*		*Acetab.*	*Quart.*	*Hem.*	*Sext.*	*Eng. wi. pint.*	*Solid inch.*
48	or	12	or	8 or	4 or	2 = =	1 = =	1. and	5.636
24	or	6	or	4 or	2 = =	1 —	- = =	0.	17.255
12	or	3	or	2 = =	1 —	- —	- = =	0.	8.627

6 or $\frac{1}{\frac{1}{2}}$ == 1 — - — - — - == 0. 4.313

4 == 1 — - — - — - — - == 0. 2.875

1 — - — - — - — - — - == 0. 0.718

ROMAN MEASURES OF CAPACITY FOR THINGS DRY, REDUCED TO ENGLISH CORN MEASURE, THE ENGLISH CORN PINT HOLDING 33 $\frac{3}{5}$ INCHES.

No. III.

					Pints	*Sol. in. dec.*
Ligula					$0,\frac{1}{48}$	0,01
4	Cyathus				$0,\frac{1}{12}$	0,04
6	$1\frac{1}{2}$	Acetabulum			$0,\frac{1}{8}$	0,06
24	6	4	Hemina		$0,\frac{1}{2}$	0,24
48	12	8	2	Sextarius	1	0,48

THE SAME TABLE IN ANOTHER FORM.

No. IV.

Ligulæ.		*Cyathi.*		*Acetab.*		*Heminæ.*		*Sextarius.*		*Eng. corn pint.*
48	or	12	or	8	or	2	==	1	==	1. and

24	or	6	or	4	= =	1	—	—	= =	0.
6	or	$\frac{1}{\frac{1}{2}}$	= =	1	—	—	—	—	= =	0.
4	= =	1	—	—	—	—	—	—	= =	0.
1	—	—	—	—	—	—	—	—	= =	0.

Note, The tables, No. I. and No. III. are exactly copied from Dr Arbuthnot, No. XII. and XIII. I have here gone no higher than the sextarius, as that is the greatest measure mentioned by Celsus; it has its name from making the sixth part of the Roman congius.

I would have taken the table of weights from Dr Arbuthnot also, if he had given one accommodated to Celsus; but as he has not, I have composed the following, No. VI. according to the division of Celsus himself, who tells us[U], that he divides the *uncia*, or *ounce*, into *seven denarii*, and the *denarius* into *six sextantes*.

Besides these, in several compositions our author uses *semuncia* and *sescuncia*, that is *half an ounce* and *ounce and half*; and to save the reader the trouble of reduction, I have given them also a place in the table.

The accurate Mr Greaves[V], from repeated experiments, concluded the *Roman denarius* to contain 62 grains English Troy weight, from which the proportions of the other weights are determined.

No. V.

Grains.		*Scruples.*		*Drachms.*		*Ounces.*		*Pound Troy.*
gr.		℈		ʒ		℥		℔
5760	or	288	or	96	or	12	= =	1
480	or	24	or	8	= =	1		
60	or	3	= =	1				
20		1						
	= =							
1								

Celsus's weights compared with apothecaries' weights.

No. VI.

Grains of Troy wt.		Sextantes.		Denarii.		Semunciæ.		Unciæ.		Sescun.		Libra.	
5208	or	504	or	84	or	24	or	12	or	8	= =	1	= =
651	or	63	or	10 $\frac{1}{2}$	or	3	or	1 $\frac{1}{2}$	= =	1	—	—	= =
434	or	42	or	7	or	2	= =	1	—	—	—	—	= =
217	or	21	or	3 $\frac{1}{2}$	= =	1	—	—	—	—	—	—	= =
62	or	6	= =	1	—	—	—	—	—	—	—	—	= =
10 $\frac{1}{3}$	= =	1	—	—	—	—	—	—	—	—	—	—	= =
1	—	—	—	—	—	—	—	—	—	—	—	—	= =

Note 1st. The Romans divided all integers, as they did their *as*, into twelve equal parts called *unciæ*. Thus the *sextans* was the sixth part of the *as*, containing *two of these unciæ*, *quadrans* one fourth, or *three unciæ*, *triens* the third part, or *four unciæ*, *semis* one half, or *six unciæ*, *bes* or *bessis* two-thirds, or *eight unciæ*, *dodrans* three-fourths being *nine unciæ*. The weight of these then differs, as the integer is the *libra*, the

uncia, or *denarius*, which the attentive reader will easily reduce, if he is disposed to calculate the quantities, observing that they are not to be taken for aliquot parts of the denarius, but when they follow the mark of the denarius. The integer preceding, and the nature of the composition will be the best explication.

Note 2. The denarius mark was X or ✠, as containing originally ten small asses. This by the copiers has been often confounded with X, denoting the number of *ten denarii*; so that after all the pains of critics and commentators, the proportions of the ingredients in several compositions seem to be irrecoverably lost. For this reason, I suppose the later editors have thought fit to change it for the common asterisk.

Note 3. The characters for quantities are variously marked in different authors, and the same note has several values. There is one of this uncertainty in Celsus, that is *Z*, which we are told expresses the *libra*, the *sescuncia*, the *sextans of a pound*, the *denarius* and the *sextans of a denarius*[W]. Which of these different values it bears in any particular place must be determined by the connection. When it follows the mark of the *denarius*, it can mean no more than the *sextans* of a *denarius*.

Note 4. p. stands for *pondo*, which is an indeclinable word, and when joined with numbers, signifies *libra* or a *pound*; when with other weights, it stands for no more than *pondus* or *weight in general*.

For an example of the reduction of Celsus's weights to ours, the following may serve.

Lib. v. cap. 19. no. 7. Philotas's plaister contains,

		℥	ʒ	℈	gr.	
Of Eretrian earth						
— chalcitis, each p. iv.*.	= =	½	0	0	8	viz. ʒi. gr. ii. multiplied by 4
— myrrh						
— calcined copper, each p. x.*.	= =	1	2	1	0	—and so all the rest.
— isinglass p. vi. *.	= =	0	6	0	12	
— rasile verdigrease						
— round allum						
— crude misy						
— birthwort, of each p. viii.*.	= =	1	0	0	16	
— copper scales p. xx.*	= =	½	2	0	2	0
— male frankincense, p. ii.*.	= =	0	2	0	4	

— oil of roses

— Bitter oil, of each three cyathi, or 1 quartarius = between

$\frac{1}{4}$

and

$\frac{1}{3}$

of an English pint.

— vinegar, a sufficient quantity.

ERRATA,
IN THE TEXT.

Page 110 line 9 *for* substances, *read* medicines.
—— 189 —— 26 *for* flour *read* flower.
—— 240 —— 22 *for* warm ingremedies *read* warming remedies.
—— 249 —— 14 *for* comes *read* come.
—— 257 —— 30 *for* verjuice *read* omphacium.
—— 271 —— 16 *for* wines *read* wine.
—— 323 —— 31 *for* straight *read* strait.
—— 350 —— 18 *dele* also.

A. CORNELIUS CELSUS

OF

MEDICINE.

BOOK I.

PREFACE.

As agriculture promises food to the healthy, so medicine promises health to the sick. There is no place in the world, where this art is not found: for even the most barbarous nations are acquainted with herbs, and other easy remedies for wounds and diseases. However it has been more improved by the Greeks than any other people: though not from the infancy of that nation, but only a few ages before our own times; as appears by their celebrating Æsculapius as its most ancient author; who, because he cultivated this science with somewhat more accuracy, which, before him, was rude and of low esteem, was received into the number of their

gods.(1) After him his two sons, Podalirius and Machaon, following Agamemnon to the Trojan war, were not a little useful to their fellow soldiers. But even these, according to Homer's account, did not undertake the plague, nor the other various kinds of diseases, but only cured wounds by incisions, and medicines: from which it appears, that they entirely confined themselves to the chirurgical part of medicine, and that this was the most antient branch. From the same author we may also learn, that diseases were then believed to arise from the anger of the immortal gods,(2) and that relief used to be sought from them. It is also probable, that though there were few remedies for distempers known, men nevertheless generally enjoyed good health from the sobriety of their lives, yet untainted by sloth and luxury. For these two vices, first in Greece, and then among us, rendered men liable to many diseases. And hence that variety of remedies now used, which was neither necessary in ancient times, nor is yet in other nations, scarcely protracts the lives of a few of us to the verge of old age. For the same reason, after those, whom I have mentioned, no men of eminence practised medicine, till learning began to be pursued with greater application; which, as it is of all things most necessary to the mind, so it is no less hurtful to the body. And at first the science of healing was accounted a branch of philosophy; so that the cure of diseases, and the study of nature, owed their rise to the same persons: and for this very good reason, because they, who had impaired their bodies by anxious thought, and nightly watchings, stood most in need of its assistance. And thus we find, that many

amongst the philosophers were skilled in this science; of whom the most celebrated were Pythagoras, Empedocles, and Democritus. Hippocrates of Cos, who, according to some authors, was the disciple of the last mentioned of these, and is so justly admired both for his knowledge in this profession, and for his eloquence, was the first worthy of notice, who separated medicine from the study of philosophy. After him, Diocles the Carystian, then Praxagoras and Chrysippus; after these, Herophilus and Erasistratus applied themselves to this art, and differed widely from each other in their methods of cure.

(1) For references 1, 2, 3, &c. see Notes at the end.

During this period, physick was divided into three parts: the first cured by diet, the second by medicines, the third by manual operations: the first they termed, in Greek, Diætetice,[X] the second Pharmaceutice,[Y] and the third Chirurgice.[Z] The most illustrious professors of that branch, which treats diseases by diet, endeavoured to extend their views farther, and took in the assistance of natural philosophy; being persuaded that, without it, medicine would be a weak and imperfect science. After these came Serapion, who first of all maintained, that the rational method of study was foreign to the art of medicine, and confined it to practice and experience. In his steps followed Appollonius and Glaucias, and some time after Heraclides of Tarentum, and others of no small note; who, from the doctrine they asserted, stiled themselves Empiricks[AA]. And thus the Dietetick branch was also divided into two parts, one set of

physicians pursuing theory, the other following experience alone. However, after these we have enumerated above, no one attempted any thing new, till Asclepiades, who greatly changed the art of medicine. And Themison, one of his successors, has also lately, in his old age, departed from him in some things. And these are the men, to whom we are chiefly indebted for the improvements made in this salutary profession.

As that branch of medicine, which respects the cure of diseases, is the noblest, as well as the most difficult of the three, we shall first treat of that part. And because in this the chief dispute is, that some alledge an acquaintance with experiments to be only requisite, while others affirm experience alone to be insufficient, without a thorough knowledge of the constitution of bodies, and what naturally happens to them; it will be proper to recite the principal arguments on both sides, that we may the more easily deliver our own opinion upon the question.

Those then, who declare for a theory in medicine, look upon the following things as necessary: the knowledge of the occult and constituent causes of distempers; next, of the evident ones; then, of the natural actions; and, lastly, of the internal parts. They call these causes occult, in which we inquire of what principles our bodies are composed, what constitutes health, and what sickness. For they hold it impossible that any one should know how to cure diseases, if he be ignorant of the causes, whence they proceed; and that it is not to be doubted, but one method of cure is required, if the redundancy or deficiency in any of the four principles(3) be the

cause of diseases, as some philosophers have affirmed; another, if the fault lie wholly in the humours, as Herophilus thought; another, if in the inspired air, as Hippocrates believed; another, if the blood be transfused into those vessels(4), which are designed only for air, and occasion an inflammation, which the Greeks call phlegmone[AB], and that inflammation cause such a commotion as we observe in a fever, which was the opinion of Erasistratus; another, if the corpuscles passing through the invisible pores should stop, and obstruct the passage, as Asclepiades maintained: that he will proceed in the proper method of curing a disease, who is not deceived in its original cause. Nor do they deny experience to be necessary, but affirm, it cannot be obtained without some theory; for that the more ancient practitioners did not prescribe any thing, at hazard, for the sick, but considered what was most suitable, and examined that by experience, to which they had before been led by some conjecture. That it is of no moment *in this argument*, whether most remedies were discovered by experiment, provided they were at first applied with some rational view: and that this holds in many cases; but new kinds of distempers often occur, in which practice has hitherto given no light; so that it is necessary to observe whence they arose; without which no mortal can find out, why he should make use of one thing, rather than another. And for these reasons they investigate the occult causes. They term those causes evident, in which they inquire, whether the beginning of the distemper was occasioned by heat or cold, fasting or surfeit, and the like. For they say,

he will be able to oppose the first appearances, who is not ignorant of their rise. Those actions of the body which they call natural, are inspiration and exspiration, the reception and concoction of our meat and drink, as also the distribution(5) of the same into the several parts of the body. They also inquire how it happens, that our arteries rise and fall; from what causes proceed sleep and watching; without the knowledge of which, they conceive it impossible for any person either to oppose the beginnings of diseases, that depend on these particulars, or cure them when formed. As of all these things they look upon concoction to be of the greatest importance, they insist chiefly upon it; and some of them following the opinion of Erasistratus, affirm that the food is concocted in the stomach by attrition; others, after Plistonicus, the disciple of Praxagoras, by putrefaction; others, upon the credit of Hippocrates, believe concoction is effected by heat. After them follow the disciples of Asclepiades, who hold all these hypotheses to be vain and idle; for that there is no concoction at all, but the matter, crude as it is received, is distributed through the whole body. And in these things they are by no means agreed: however, it is not disputed, that according to the different hypotheses, a different regimen of diet is to be observed by sick people. For if it be performed by attrition, such food is to be chosen, as will most easily be broken to pieces; if by putrefaction, such as most quickly undergoes that change; if heat be the cause of concoction, then such as most effectually cherishes heat. But if there be no concoction at all, then none of these kinds of aliment

are to be chosen: but such are to be taken, as are least liable to change from the state in which they are received. And, by the same way of reasoning, when there is a difficulty of breathing, when sleep or watchings oppress, they are of opinion, that the man, who has first learned in what manner these happen, will be capable of curing them. Besides, as pains, and various other disorders, attack the internal parts, they believe no person can apply proper remedies to those parts, which he is ignorant of; and therefore, that it is necessary to dissect dead bodies, and examine their viscera and intestines; and that Herophilus and Erasistratus had taken far the best method *for attaining that knowledge*, who procured criminals out of prison, by royal permission, and dissecting them alive, contemplated, while they were even breathing, the parts, which nature had before concealed; considering their position, colour, figure, size, order, hardness, softness, smoothness, and asperity(6); also the processes and depressions of each, or what is inserted into, or received by another part; for, *say they*, when there happens any inward pain, a person cannot discover the seat of that pain, if he have not learned where every viscus or intestine is situated; nor can the part, which suffers, be cured by one, who does not know what part it is; and that when the viscera happen to be exposed by a wound, if one is ignorant of the natural colour of each part, he cannot know what is sound and what corrupted; and for that reason is not qualified to cure the corrupted parts; besides they maintain, that external remedies are applied with much more judgment, when we are acquainted with the situation, figure,

and size of the internal parts; and that the same reasoning holds in all the other instances above mentioned. And that it is by no means cruel, as most people represent it, by the tortures of a few guilty, to search after remedies for the whole innocent race of mankind in all ages.

On the other hand, those, who from experience, stile themselves empiricks, admit indeed the evident causes as necessary; but affirm the inquiry after the occult causes and natural actions to be fruitless, because nature is incomprehensible. And that these things cannot be comprehended, appears from the controversies among those, who have treated concerning them, there being no agreement found here either amongst the philosophers or the physicians themselves: for, why should one believe Hippocrates rather than Herophilus? or, why him more than Asclepiades? that if a man inclines to determine his judgment by reasons assigned, the reasons of each of them seem not improbable; if by cures, all of them have restored the diseased to health; and therefore we should not deny credit either to the arguments or authority of any of them. That even the philosophers must be allowed to be the greatest physicians, if reasoning could make them so; whereas it appears, that they have abundance of words, and very little skill in the art of healing. *They say also* that the methods of practice differ according to the nature of places; thus one method is necessary at Rome, another in Egypt, and another in Gaul. That if the causes of distempers were the same in all places, the same remedies ought also to be used every where. That often too the

causes are evident; as for instance in a lippitude(7), or a wound, and nevertheless the method of cure does not appear from them: that if the evident cause does not suggest this knowledge, much less can the other, which is itself obscure. Seeing then this last is uncertain and incomprehensible, it is much better to seek relief from things certain and tried; that is, from such remedies as experience in the method of curing has taught us, as is done in all other arts; for that neither a husbandman nor a pilot is qualified for his business by reasoning, but by practice: and that these disquisitions have no connection with medicine, may be inferred from this plain fact, that physicians, whose opinions in those matters have been directly opposite to one another, have notwithstanding equally restored their patients to health: that their success was to be ascribed to their having derived their methods of cure, not from the occult causes, or the natural actions, about which they were divided, but from experiments, according as they had succeeded in the course of their practice. That medicine, even in its infancy, was not deduced from these inquiries, but from experiments: for of the sick, who had no physicians, some from a keen appetite, had immediately taken food in the first days of their illness, while others feeling a nausea, had abstained from it; and that the disorder of those, who had abstained, was more alleviated; also, some in the paroxysm of a fever had taken food, others a little before it came on, and others after its remission; and that it succeeded best with those who had done it after the removal of the fever: in the same manner some used a full diet in the beginning of a disease;

others were abstemious; and that those grew worse, who had eaten plentifully. These and the like instances daily occurring, that diligent men observed attentively, what method generally answered best, and afterwards began to prescribe the same to the sick. That this was the rise of the art of medicine, which by the frequent recovery of some, and the death of others, distinguishes what is pernicious from what is salutary; and that when the remedies were found, men began to discourse about the reasons of them: that medicine was not invented in consequence of their reasoning, but the theory was sought for after the discovery of medicine. They ask too, whether reason prescribes the same as experience, or something different; if the same, they infer it to be needless, if different, mischievous. That at first, however, there was a necessity for examining remedies with the greatest accuracy, but now they are sufficiently ascertained; and that we neither meet with any new kind of disease, nor want any new method of cure. That if some unknown distemper should occur, the physician would not therefore be obliged to have recourse to the occult things; but he would presently see to what distemper it is most nearly allied, and make trial of remedies like to those, which have often been successful in a similar malady, and by the resemblance between them would find some proper cure. For they do not affirm, that judgment is not necessary to a physician, and that an irrational animal is capable of practising this art; but that those conjectures, which relate to the occult things, are of no use; because it is no matter what causes, but what removes a distemper: nor is it

of any importance in what manner the distribution is performed, but what is most easily distributed; whether concoction fails from this cause or that; or whether it be properly a concoction, or only a distribution: nor are we to inquire how we breathe, but what relieves a difficult and slow breathing; nor what is the cause of motion in the arteries, but what each kind of motion indicates. That these things are known by experience: that in all disputes of this kind, a good deal may be said on both sides; and therefore genius and eloquence obtain the victory in the dispute; but diseases are cured not by eloquence, but by remedies; so that if a person, without any eloquence, be well acquainted with those remedies, that have been discovered by practice, he will be a much greater physician than one who has cultivated his talent in speaking without experience. That these things, however, which have been mentioned, are only idle: but what remains is also cruel, to cut open the abdomen and præcordia of living men, and make that art, which presides over the health of mankind, the instrument, not only of inflicting death, but of doing it in the most horrid manner; especially if it be considered, that some of those things, which are sought after with so much barbarity, cannot be known at all, and others may be known without any cruelty; for that the colour, smoothness, softness, hardness, and such like, are not the same in a wounded body, as they were in a sound; and further, because these qualities, even in bodies that have suffered no external violence, are often changed by fear, grief, hunger, indigestion, fatigue, and a thousand other inconsiderable disorders; which

makes it much more probable, that the internal parts, which are far more tender, and never exposed to the light itself, are changed by the severest wounds and mangling. And that nothing can be more ridiculous than to imagine any thing to be the same in a dying man, nay one already dead, as it is in a living person: for that the abdomen(8) indeed may be opened(9), while a man breathes; but as soon as the knife has reached the præcordia(10), and the transverse septum is cut, which by a kind of membrane divides the upper from the lower parts, (and by the Greeks is called the Diaphragm[AC]) the man immediately expires; and thus the præcordia, and all the viscera never come into the view of the butchering physician, till the man is dead; and they must necessarily appear as those of a dead person, and not as they were while he lived; and thus the physician gains only the opportunity of murdering a man cruelly, and not of observing, what are the appearances of the viscera in a living person: if, however, there be any thing which can be observed in a person, that yet breathes, chance often throws it in the way of such as practise the healing art; for that sometimes a gladiator on the stage, a soldier in the field, or a traveller beset by robbers, is so wounded, that some internal part, different in different people, may be exposed to view; and thus a prudent physician finds their situation, position, order, figure, and the other particulars he wants to know, not perpetrating murder, but attempting to give health; and learns that, by compassion, which others had discovered by horrid cruelty. That for these reasons it is not necessary to lacerate even dead bodies;

which, though not cruel, yet may be shocking to the sight, since most things are different in dead bodies; and even the dressing of wounds shows all that can be discovered in the living.

Since these points have often been, and still continue to be disputed with great warmth by physicians in large volumes, 'tis proper to add some reflections, that may seem to come the nearest to the truth, and which neither slavishly follow either of these opinions, nor are too remote from both, but lie, as it were, in the middle, betwixt these opposite extremes; which those, that inquire after truth without partiality, may find to be the surest method for directing the judgment in most warm controversies, as well as in this now before us. For, with regard to the causes of health or diseases, in what manner the air, or food, is either conveyed or distributed, the philosophers themselves do not attain to an absolute certainty; they only make probable conjectures. Now, when there is no certain knowledge of a thing, a mere opinion about it cannot discover a sure remedy. And it must be owned, that nothing is of greater use, even to the rational method of curing, than experience. Altho' then many things are taken into the study of arts, which do not, properly speaking, belong to the arts themselves, yet they may greatly improve them by quickening the genius of the artist; wherefore the contemplation of nature, though it cannot make a man a physician, yet may render him fitter for the practice of medicine. Indeed, it is very probable, that both Hippocrates and Erasistratus, and all the others, who were not content with treating fevers and ulcers, but examined in some measure

into the nature of things, tho' they did not by such study become physicians, yet became more able physicians by that means. And medicine itself requires the help of reason, if not always amongst the occult causes, or the natural actions, yet often; for it is a conjectural art; and not only conjecture in many cases, but even experience is found not consistent with its rules. And sometimes neither fever, nor appetite, nor sleep, follow their usual antecedents in the regular course. A new distemper sometimes, though very seldom, appears; that such a case never happens is manifestly false; for, in our own time, a certain lady, from a quantity of flesh(11) falling down from her private parts, and growing dry, expired in a few hours; so that the most celebrated physicians neither found out the genus of the distemper, nor any remedy for it. I suppose the reason they forbore to attempt any thing was, that none of them was willing to run a risk upon his own conjecture only in a person of her quality, for fear he should be thought to have killed, if he did not save her; yet it is probable that some one, without that regard to the opinion of the world, might have contrived something, which upon trial would have succeeded. Nor is a similitude always serviceable in this kind of practice; and where it is, this properly belongs to the rational part, to consider amidst a number of similar kinds, both of diseases and remedies, what particular medicine ought to be preferred. When such an incident occurs, the physician ought to invent something, which though perhaps it does not always answer, yet most commonly may: and he shall draw his new method,

not from the occult things (for they are dubious and uncertain) but from those, that can be fully known, that is, from the evident causes. For it makes a considerable difference, whether the distemper was occasioned by fatigue, or thirst, or cold, or heat, or watching, or hunger; or whether it arose from too much food and wine, or excess of venery. And he ought not to be ignorant of the constitution of his patient, whether his body be too moist, or too dry: whether his nerves(12) be strong or weak; whether he be frequently or seldom ailing; and whether his illnesses are severe or slight, of long continuance or short; what way of life he has pursued, laborious or sedentary, luxurious or frugal; for from these, and such like circumstances, he must often draw a new method of cure.

Nevertheless even these things ought not to be so passed over, as if they were uncontroverted; for Erasistratus has affirmed, that distempers were not occasioned by them, because other people, and even the same person at different times, would not fall into a fever upon them. And some of the Methodists of our own age, from the authority of Themison (as they would have it thought) assert, that the knowledge of no cause whatever bears the least relation to the method of cure; and that it is sufficient to observe some general symptoms of distempers; and that there are three kinds of diseases, one bound, another loose(13), and the third a mixture of these. For that sometimes the excretions of sick people are too small, sometimes too large; and sometimes one particular excretion is deficient, while another is excessive. That these kinds of

distempers are sometimes acute, and sometimes chronic; sometimes increasing, sometimes at a stand(14), and sometimes abating. As soon then as it is known, to which of these classes a distemper belongs if the body be bound, it must be opened; if it labours under a flux, it must be restrained; if the distemper be complicated, then the most urgent malady must be first opposed. And that one kind of treatment is required in acute, another in inveterate distempers; another, when diseases are increasing; another, when at a stand; and another, when inclining to health. That the observation of these things constitutes the art of medicine, which they define as a certain way of proceeding, which the Greeks call *Method*[AD], and affirm it to be employed in considering those things, that are in common to the same distempers: nor are they willing to have themselves classed either with the rationalists, or with those, who regard only experiments; for they dissent from the first sect, in that they will not allow medicine to consist in forming conjectures about the occult things; and also from the other in this, that they hold the observation of experiments to be a very small part of the art.

As to what Erasistratus maintains; in the first place, plain fact contradicts his opinion; because a distemper very seldom happens, unless after some of these occurrences, that have been mentioned. And then it does not follow, that what does not affect one person, may not hurt another; nor what does not affect the same person at one time, may not hurt him at another; for there may be some latent circumstances in a body, either in respect of

weakness, or some disorder, which either are not in another, nor were in the same body at a different time; and these, though of themselves not considerable enough to cause a distemper, yet may render a body more liable to other injuries: but if he had been sufficiently skilled in the contemplation of the works of nature (which the physicians with very good reason endeavour to attain) he must have known this also, that nothing happens from one single cause; but that is to be taken for the cause, which seems to have contributed most to the effect. Now it is possible, that what does not move at all while alone, may in conjunction with other things excite a great commotion. Besides, Erasistratus himself, who says, that a fever arises from a transfusion of the blood into the arteries, and that this happens in a plethoric body, can assign no reason, why of two persons equally plethoric, the one should fall into a distemper, and the other be free from all danger, which manifestly happens every day. From hence it appears, that supposing this transfusion to be real, nevertheless, when there is a plethora, it does not happen of itself, but when some one of the conditions above-mentioned goes along with it.

But the followers of Themison, if they assert their maxims to hold universally, are still more rationalists than those, that pass under that name; for though one rationalist does not maintain all that another approves, there is no necessity to invent a new appellation for him; provided, which is the principal thing, he does not proceed upon memory alone, but takes in reason too. But if, which is nearer to the

truth, the art of medicine hardly admits of any universal precepts, then they are in the same class with those, who depend upon experiments alone: and the more so, because any unskilful person can discover, whether a distemper has bound up a man, or rendered him lax. Now if what relaxes a constringed body, or restrains a loose, be drawn from reason, such a practitioner is a rational physician: but if from experience, as he must confess, who will not allow himself to be a rationalist, then he is an empirick. And so, according to him, the knowledge of the distemper is foreign to the art, but the remedy lies within the bounds of experience. Nor is any improvement made by them upon the profession of the empiricks, but on the contrary, something is taken from it; the empiricks attending with great circumspection to many circumstances; whereas these regard only the easiest, and no more than the common things. For in like manner those, who are employed in curing cattle, since it is impossible for them to be informed by the dumb animals, what is peculiar in the case of each, regard only what is common to them all: and foreign nations, as they are not acquainted with any subtile theory of medicine, take notice only of the common symptoms: those also, who take under their care a great number of patients, because they are not able to consult the distinct necessities of each with the utmost attention, have respect only to those generals. Nor indeed were the ancient physicians ignorant of this method, but they were not content with it; for even the most ancient writer Hippocrates said, that in practice it is necessary to regard both the general and peculiar

circumstances. Nor is it possible even for them to confine themselves within the narrow limits of their own profession; for there are different kinds both of the bound, and lax disorders; which is more easily observed in the lax, for it is one thing to vomit blood, another to vomit bile, and another to vomit the food: and there is also a difference betwixt labouring under a simple purging, and a dysentery; between being weakened by sweats, and wasted by a consumption. A humour also breaks out upon particular parts, as the eyes, for instance, and the ears; and no member of the human body is free from that danger. Now not one of these disorders is cured exactly in the same manner as another; so that in these, medicine descends from the general observation of the lax kind, to the peculiar. And in this again another kind of knowledge of peculiarity is often necessary; because the same thing will not relieve all, that labour under similar distempers. For though there are certain things, which either bind the belly, or open it in most people; yet some are to be met with, in whom the same intention is gained by means contrary to the common. So that in such, the general observation is hurtful, and the peculiar only salutary. And a right apprehension of the cause often removes a distemper. Upon this account it was, that the most ingenious physician of our age, the late Cassius, being called to one in a fever distressed with violent thirst, when he found, that his complaints began after hard drinking, ordered him to drink plentifully of cold water. When his patient had drank this, and by the mixture had weakened the force of the wine, he was presently freed from the fever by a

sleep, and a sweat. Which remedy the physician very judiciously adapted to the case, not from the consideration of his body being either bound or loose, but from the cause that had preceded. There is also another peculiarity to be regarded, which is that of place and season, according to these authors themselves; who, when they are giving directions for the management of the healthy, order them more carefully to avoid cold, heat, satiety, labour, and venery, in sickly places or seasons; and to take more rest in such seasons or places, if they have any sense of weight hanging upon their body; and in such circumstances neither to disturb the stomach by vomiting, nor the belly by purging. These things indeed are certain; yet they descend from generals to some things that are particular: unless they would have us believe, that healthy men should observe the temper of the air, and the season of the year, and that sick people don't need to take that care, to whom all precaution is so much the more necessary, by how much an infirm state of health is more liable to receive injury. Besides, there are very different properties of distempers in the same person. And one, who has been sometimes unsuccessfully tried by medicines, which seemed proper for his disorder, is often recovered by the contrary. There are also many distinctions to be observed in the giving of food, of which I shall only name one instance. A youth bears hunger more easily than a boy; better in a thick, than a clear air; more easily in winter than summer; with more ease, one, that is accustomed to a single meal, than another, who eats a dinner also(15); a sedentary person more easily, than one that takes exercise.

Now generally food ought to be prescribed so much the sooner, as the person is less able to bear the want of it in health. For these reasons I am apt to think, that he, who is not acquainted with the peculiarities, ought only to consider the general: and that he, who can find out the peculiar, ought not to neglect, but take them in too for the direction of his practice. And therefore, where the knowledge is equal, yet a friend is a more useful physician, than a stranger. To return to my point then, my opinion is, that medicine ought to be rational, but to draw its methods from the evident causes, all the obscure being removed, not from the attention of the artist, but from the practice of the art. Again, to dissect the bodies of living men is both cruel and superfluous. But the dissection of dead subjects is necessary for learners: for they ought to know the position and order of the parts, which dead bodies will show better, than a living and wounded man. But as for the other things, which can only be observed in living bodies, practice itself will discover them in the cure of the wounded, somewhat more slowly, but with more tenderness. Having delivered my sentiments upon these points, I shall lay down the proper rules for the management of people in health, and then proceed to what relates to diseases and their cure.

CHAP. I.

RULES FOR THE HEALTHY.

A sound man, who is both in health, and his own master, ought to confine himself to no rules; and neither call for the assistance of a physician nor an iatroalipta(16). 'Tis good for him to diversify his way of life; to be sometimes in the country, sometimes in the city, and frequently in the fields; to sail, to hunt; sometimes to rest, but exercise himself frequently: for indolence enervates the body, labour strengthens it: the first brings on a quick old age, the other makes a long youth. 'Tis also proper to make use sometimes of the warm bath(17), and sometimes of the cold; to anoint sometimes, and at other times to neglect it; to avoid no kind of food, that may be in common use; sometimes to eat in company, at other times to retire from it; sometimes to eat more than is sufficient, and at other times no more; to take food rather twice in the day than once; and always as much as he can, provided he concoct it. But as exercise and food of this kind are necessary, so the exercise and diet of wrestlers are inconvenient: both because the order of exercise being interrupted by some necessary business of life, hurts the body; and because those bodies, which are very high fed, like their's, soonest decay, and are most liable to diseases.

Of Coition.

Coition is neither to be too much desired, nor too much feared. Seldom used, it excites the body; frequent, relaxes. But as the frequency is to be judged of, not by the number of repetitions, but by nature, regard being had to the age and constitution, we may know it not to be useless, when it is neither followed by a languor of the body, nor pain. It is worse in the day-time, but safer in the night; *but the general rule will hold for both*, if neither meat be taken after the first, nor the other be followed by wakefulness and labour. These things are to be observed by strong people; and care must be taken, that the reliefs of sickness be not wasted in good health.

CHAP. II.

RULES FOR VALETUDINARY PEOPLE.

But greater precaution is necessary for the valetudinary; amongst whom are the greatest number of those that live in cities, and almost all that are fond of study: that care may rectify the disorders which arise from their constitution, situation, or study. Any of these then, who has concocted well, will rise in the morning safely; he that finds the concoction not completed, ought to lie still; and if he be under a necessity of rising, to go to sleep afterwards. He that has not concocted at all, should be entirely at rest, and neither venture upon labour, nor exercise, nor business. He that is troubled with crude belching, without pain of the præcordia, ought now and then to drink cold water, and withal to confine himself to certain rules; to live in a house well lighted, that enjoys the summer's breeze and the winter's sun; to avoid the meridian sun, the morning and evening cold, as also the air of rivers and lakes; and by no means to expose himself to the sun breaking out in a cloudy sky, lest he be sometimes affected with heat, and sometimes with cold, which very often occasions gravedoes(18) and catarrhs. These inconveniences are to be guarded against with greater diligence in sickly places, in which they even cause a pestilence. We may know a body to be in health, when every day in the morning the urine is first white, and then of a light red colour: the first shows that the concoction is going on, and the other,

that it is compleated. When any person awakes, he ought to wait a little, and then, unless it be the winter time, to wash his mouth plentifully with cold water; in long days, to take the air in the middle of the day, before meat; or, if he cannot do that conveniently, after it. In winter especially, to rest the whole night; but, if he is obliged to study in the night, to do it not immediately after eating, but after concoction. He, that in the day-time has been employed either in domestic or civil business, ought to set apart some time for the refreshment of his body; the principal part of which is exercise, which ought always to go before meat: in one that has laboured little(19), and has concocted well, it should be stronger; in one who has been fatigued, and has not concocted well, it may be more gentle. Proper exercises are, reading aloud, handling of arms, the ball, running, and walking; which last is better not upon plain ground: for an ascent and descent agitates the body with some variety, unless it be very weak. And it is better in the open air, than in a portico; better in the sun, if the head can bear it, than in a shade; better in a shade formed by walls, or parks, than under a roof; a straight walk is better than a winding. In most cases a beginning sweat should put an end to exercise, or at least lassitude, that does not amount to fatigue; and that sometimes in a less, sometimes in a greater degree. In all these exercises, there should neither be, as among wrestlers, an inviolable rule, nor too violent labour. Exercise is rightly followed, sometimes by unction, either in the sun, or before a fire, at other times by the bath, which is best in a room as high, light, and spacious

as may be. Neither of these should be always done; but either one of them oftner than the other, as agrees best with the constitution. After these, it is necessary to take some rest. When food is to be taken, it is never proper to overload: but too great abstinence is often hurtful: if there be any small excess committed, it is often safer in drinking than eating. It is best to begin with salt fish(20), greens, and such like. After these flesh, which is best roasted, or boiled. All preserves, upon a double account, are hurtful, both because people are tempted by their agreeable taste to exceed in quantity, and though the quantity be moderate, they are of difficult concoction. A desert is not hurtful to a good stomach, but turns sour upon a weak. And therefore one, that is less firm in that part, will do better to use dates, apples, and such fruit for that purpose. After drinking somewhat more than thirst requires, no more should be eaten. With a full stomach a man should set about no action. When one has eat plentifully, the concoction is more easy, if he concludes the meal with a drink of cold water, then continues awake for a little while, and afterwards has a sound sleep. If a person has made a hearty meal in the day-time, he ought not to expose himself after it, either to cold, heat, or labour; for these do not so readily hurt with an empty as a full body. If upon any occasion one is to want food for a time, all labour is to be avoided.

CHAP. III.

SOME OBSERVATIONS SUITED TO NEW INCIDENTS, AND THE DIFFERENT CONSTITUTIONS, SEXES, AND AGES, AND THE SEASONS OF THE YEAR.

What we have delivered above, is nearly of universal extent: but some precautions are necessary for new incidents, and for the constitutions, sexes(21), and ages, and the seasons of the year. For it is neither very safe to remove from a healthy place into a sickly; nor from a sickly into a healthy. It is best to remove from a healthy place to a sickly, in the beginning of winter; from a sickly to a healthy, in the beginning of summer. It is neither fit to overload with food after much fasting, nor is fasting good after too full eating. And those persons endanger themselves, who, contrary to their custom, either once or twice a day eat immoderately. Again, sudden ease is very hurtful after great labour, and sudden labour after too great inactivity. For this reason, when one has a mind to make any change in his way of living, he must accustom himself to it gradually. All kinds of labour are more easily endured even by a boy or an old man, than by a man that is not used to it. And upon this account too, a life over inactive is not good; because there may happen to be a necessity for labour. But if at any time a person altogether unused has occasionally laboured, or even one, that is accustomed to it, has laboured much harder than ordinary, he ought to sleep with an empty stomach; and so much the rather, if he have a

bitter taste in his mouth, or a dimness in his eyes, or his belly be disordered, For then he must not only sleep with an empty stomach, but even continue to fast the following day, unless rest has quickly carried off the disorder. And if that be the case, he should get up, and walk a little at a slow pace. But if a person has been at more moderate labour, so that he was not obliged to go to sleep, nevertheless he ought to walk in the same manner.

What follows is to be generally observed by those, that after fatigue are to eat: when they have walked a little, if they have not an opportunity of bathing, they ought to be anointed in a warm place, either in the sun, or before a fire, and then to sweat. But if they have that conveniency, they should first of all sit down in the tepidarium; next, after they have rested a little, go down into the warm bath; then anoint with a good deal of oil, and rub gently, and again go into the bath; this done wash the mouth with warm water, and then with cold. A very hot bath is not fit for such people. And therefore if any one is so much over fatigued as to be feverish, it is sufficient for him, in a tepid room, to dip himself up to the groin in warm water, with a small mixture of oil: after that, to rub over the whole body, but principally those parts, that have been in the water, with oil, in which there is an addition of wine and a little powdered salt. Afterwards it is proper for all people, that are fatigued, to take food, and that of a moist nature; to be content either with water, or at most a diluted drink, especially such as is diuretic. It is fit also to know this, that drinking cold water is very pernicious to one, that is sweating by labour;

and hurtful to those, that are fatigued by a journey, even when the sweat has abated. Asclepiades believed it to be bad for those too, that had immediately come from the bath. This holds true in those, who are easily purged, but not with safety, and are liable to shudderings, but is not universal; because it is most agreeable to nature, that a hot stomach should be cooled by drinking, and a cold one heated. Which rule when I lay down, I own at the same time, that cold water should not be given to one, that is in a sweat, though occasioned by bathing. It is common also after various food, and frequent diluted drinks, for a vomit to be serviceable, and the following day a long rest, and then gentle exercise. If one be troubled with frequent yawning(22), he should drink wine and water by turns, and seldom make use of the bath. A change of labour also relieves from fatigue; and when any person is distressed by some unusual kind of labour, that which he is accustomed to, refreshes him. It is very safe for a person, who is fatigued, to rest upon a couch, if he has before made it a daily practice; on the contrary, it wearies one, that is not used to it. For whatever is contrary to custom proves hurtful, whether it be indulgence or severity.

There are some methods peculiarly adapted to the case of a man fatigued by walking. Frequent friction, even upon the journey, relieves him; at the end of the journey first sitting down, and then unction; afterwards he may foment with warm water, or use the warm bath, rather to his lower, than his upper parts. But if any one has been scorched in the sun, he must immediately go to the bagnio, and rub over his

body and head with oil, and then go down into the bath, warmed to a good degree; after that, first warm water must be poured over the head, and then cold. But he, that has been chilled with cold, must wrap himself up, and sit down in the laconicum, till he sweat; then anoint, and afterwards bathe; eat moderately, and drink wine unmixed.

He that has been upon sea, and is troubled with a nausea, if he has vomited much bile, ought to abstain from food wholly, or take very little: if he has brought up acid phlegm, he may notwithstanding take food, but lighter than ordinary: if he has had a nausea without vomiting, he should abstain from food, or take a vomit after meat. He that has sat the whole day, either in a chariot or in the theatre, should by no means run, but walk slowly. It has been frequently serviceable to stay a long while in the bath, and then to sup slightly. If one grows hot in the bath, it will refresh him to take vinegar, and hold it in his mouth: if that is not at hand, cold water may be used in the same manner. Above all things it is proper to know the constitution of the body: because some are slender, others fat; some hot, others cold; some moist, others dry; some costive, and others lax. There are very few instances of men, who have not a weakness in some part or other of their body. A person of a slender habit should take methods to gain flesh, one of a plethoric should diminish his bulk; one of a hot temperament ought to cool himself, the cold to warm him; one of a humid should dry, and one of a dry should moisten; he that is loose in the belly should harden it, and he that is bound should relax; and in general, means must

always be used to help that part which is most liable to disorders.

The means of fattening the body.

The body is fattened by gentle exercise, frequent rest, unction, and the warm bath, if it be after dinner; a costive belly, moderate cold in the winter, a full sleep, but not over long, a soft couch, tranquillity of mind, the eating and drinking of sweet and fat things, frequent meals, and as much food as it is possible to digest.

Of extenuating the body.

The body is extenuated by going into warm water(23), and especially if it be salt, the bath with an empty stomach, a scorching sun, and all heat, care, watching, either too short or too long sleep; lying upon the ground in the summer time, and upon a hard couch in the winter; running, much walking, and all violent exercise, vomiting, purging, acid and austere things, and a single meal in the day, also a custom of drinking wine, that's not very cold, upon an empty stomach.

Since I have classed vomiting and purging amongst the methods for extenuating, I must say something in particular about them. I observe, that vomiting is rejected by Asclepiades in that book, which he composed upon the preservation of health; nor do I blame him, if he was offended with the custom of those, who by such daily evacuation endeavour to

procure a voracious appetite. But he has gone something farther. He has also in the same book forbid purging. And indeed this is hurtful, if it be procured by too strong medicines. It can be no universal maxim however, that these should be laid aside entirely; because it is possible, that the nature of constitutions and particular junctures may make them necessary, provided they be used with moderation, and not without necessity; and even he himself has granted, that if any thing be corrupted, it ought to be expelled. So that this method is not to be altogether condemned, but there may be many occasions for it, and it requires a more particular and nice observation.

Of vomits.

A vomit is more useful in the winter than summer, because in that season there is more phlegm, and a greater heaviness in the head. It does no good to those, that are slender, and have a weak stomach; but it is useful to those, that are of a full habit, and all bilious people, if they have either overloaded themselves, or their concoction has been impaired: for if they have taken a greater quantity than can be concocted, they ought not to run the risk of its corrupting; or if it is already corrupted, nothing is more proper than to have it expelled in the most expeditious way possible. For this reason, whenever they are attacked with bitter eructations, attended with pain and weight of the præcordia, they must immediately have recourse to this remedy. It is likewise proper for one, who has a scorching heat in the breast, and a frequent spitting or a nausea, or for

one who has noise in his ears, or a humour in the eyes, or a bitterness in the mouth; as also for one, who changes either his air or situation, and to those, who are troubled with a pain of the præcordia, if they have not vomited for several days. I am sensible, that in these cases rest is prescribed, which cannot always be had by those, who are under a necessity of stirring about; nor indeed has it the same effect in every body. I grant then, that vomits should not be taken with a view of indulging the luxurious appetite: that they are sometimes useful remedies, I believe upon the credit of experience; but I would advise any, who wishes to be healthy, and live to old age, not to make a daily practice of it. When one chuses to vomit after meat, if he does it easily, he should first drink only warm water; if with difficulty, let him add a little salt or honey to the water; but he, that intends to vomit in the morning, should first drink mulse(24), or eat hyssop(25), or radish, and then drink warm water, as has been directed already. All the other things which the ancient physicians prescribed, are hurtful to the stomach. If it is weak after the vomit, a little food is to be taken, but of a proper kind; and if the fauces have been much irritated, three cyathi of cold water may be drunk. He, that has vomited, if it was in the morning, ought to take a walk, then anoint, afterwards sup; but if after supper, on the following day he should bathe, and sweat in the bagnio; he will do well to make the next meal slight, and the bread he uses at it should be stale, wine austere and unmixed, the flesh roasted, and all the food of the driest kind. He that chuses to vomit twice in the month, will find it

answer the purpose better, if he do it for two days successively, than if he were to repeat it on the fifteenth day, unless such an intermission should cause a weight at his breast.

Of purging.

When the belly is costive, so as to evacuate very sparingly, and from that cause flatulencies, dimness of sight, pains of the head, and other disorders of the superior parts, grow troublesome, then ’tis fit to take a purge: for what assistance can rest or abstinence afford in these disorders, of which they are the principal causes? He that wants to be lax, let him first use such food and wine as produce that effect: and if they don’t succeed, let him take aloes. But purging, though it be sometimes necessary, yet, when it is frequent, becomes dangerous; for thus the body will be habitually deprived of its nourishment, and by that means become valetudinary, for a body in a weak state is the most liable to all kinds of distempers.

What heats and cools the body.

The body is heated by unction, salt water, and more so if it be warm; all salt provisions, and austere wine. On the contrary, it is cooled by bitter and fleshy substances, taken with an empty stomach; the bath after meals, and sleep, unless it be too long, and all acids; the coldest water; oil, if it be mixed with water; and lotus(26).

What mois-

tens and dries
the body.

The body is rendered humid(27) by less exercise than ordinary, frequent bathing, a full diet, much drink, a walk after it, and continuing awake. Walking long, and briskly, has of itself the same tendency; and morning exercise, if one does not eat presently after it; and those kinds of food, which come from cold climates, or rainy, or otherwise damp. On the contrary, dryness is caused by immoderate exercise, hunger, unction, heat without moisture, immoderate use of salt, cold water, and the taking of food immediately after exercise, and such particularly as comes from dry and hot climates.

What binds
and relaxes
the belly.

The belly is bound by labour, sitting still, rubbing potter's chalk upon the body, and by diminishing the usual quantity of food, as also if it be taken but once a day by one who is accustomed to it twice; by drinking little, and not till one has eat as much, as he designs for the time; rest after meat. On the other hand, the belly is relaxed by an increase of walking and food, motion after meat, and drinking frequently in the time of meals. 'Tis necessary also to know this that a loose belly is bound by a vomit, and a costive one is loosened by the same: and a vomit immediately after meat binds it; but one that comes some time after, renders it lax.

Of the differ-
ent ages.

As to the different ages, people in middle life bear want of food most easily; young men not so well; least of all boys, and very old men. The more uneasiness one finds from it, he ought to take victuals the oftener; and that frequency is more especially necessary for one, that is growing. Warm bathing is fit both for boys and old men. Wine should be given to boys more diluted, to old men less; but such as occasions flatulencies, to neither of them. It is of less consequence what victuals young men eat, and how dressed. Those that are loose in the belly while young, for the most part are costive when they grow old; such as are costive, in their youth, are often loose in old age. It is best for a young man to have a lax belly, and for an old man to be bound.

Of the seasons.
Winter.

It is necessary also to consider the seasons of the year. It is proper to eat more in the winter; to take a smaller quantity of drink, but less diluted; to make much use of bread, and flesh rather boiled *than roasted*, and greens sparingly; to take food once a day, unless the belly be too much bound. If one dines, it is better to take some trifling thing, and that dry, without flesh, and without drink. In that season of the year, all warm things, or such as promote heat, are best. Nor is venery altogether so hurtful then, as at some other times.

Spring.

But in the spring the quantity of food is to be

lessened, and the drink increased, but more diluted; more use is to be made of flesh and greens, and there must be a gradual change from boiled to roast flesh. Venery is most safe in that season of the year.

Summer.

But in summer the body requires meat and drink more frequently; therefore it is convenient to take a dinner. Flesh and greens are most proper in that season; drink very much diluted, that it may at once remove thirst, and not inflame the body; bathing in cold water; roast flesh, cold food, or such as is cooling. As food must be often taken, so it must be in small quantities.

Autumn.

Now in autumn there is the greatest danger, upon account of the frequent changes of the air. And for this reason one should never go abroad, especially in the colder days, without warm cloaths and shoes, nor sleep in the air in the night-time, or at least be well covered. At this time the diet may be something more full, the drink less, but stronger. Some imagine apples(28) to be hurtful, which for the most part are eaten immoderately through the whole day, while no abatement is made from the more substantial food. Thus the mischief does not proceed from them, but from the aggregate of all that is taken; for none of them contribute less to it than these. But it is not fit to use them oftener than the other kinds. Lastly, it is necessary when an addition is made in this article, to lessen the quantity of the stronger food. Venery is neither good in the summer, nor in autumn; but is

less hurtful in autumn; in summer, if possible, there ought to be a total abstinence from it.

CHAP. IV.

RULES FOR THOSE THAT HAVE A WEAKNESS IN THE HEAD.

Our next business is to consider the cases of those, who have a weakness in any particular part of the body. He, that has a weakness in his head, if he has concocted well, ought to rub it gently with his hands in the morning; and never, if he can avoid it, put any covering upon it, or clip the hair close to the skin; it is proper for him to avoid exposing it to the moon, and more especially before her conjunction with the sun, but never to go out after meat: if he have his hair, to comb it every day; to walk much, but if he can, neither under a roof, nor in the sun; and also to avoid the scorching heat of the sun, particularly after meat or wine. He should rather anoint than bathe, and the unction should be performed, never before a flame, sometimes at a glowing red fire. If he come to the bath, he ought first to wrap himself up, and sweat a little in the tepidarium, anoint there, and then go into the calidarium; when he has sweat, not to go into the bath, but to pour hot water over his head, so that it may run over all his body, then tepid water in the same manner, and lastly cold; and the last longer upon his head than the other parts; after which to rub it for some time; lastly, to dry and anoint. Nothing is so beneficial to the head as cold water; for this reason, he that has a weak head, should every day in the summer hold it for some time under a pretty strong stream. And though he

has anointed without going into the bath, and is not able to bear dipping in cold water, nevertheless he should always pour cold water upon his head. But when he is unwilling to have the other parts of his body touched, he must bend his head forward, so that the water may not fall down into his neck; and that it may not offend his eyes, or any other part, he is to throw it back now and then with his hands, as it runs down. It is necessary for him to use a spare diet, which is easily concocted; and if he finds his head uneasy, when his stomach is empty, he must eat in the middle of the day; if fasting does not injure it, once a day is more eligible. Mild diluted wine is more proper for his common drink than water, that when his head grows worse, he may have some refuge left; and it is neither fit for him to drink wine always, nor water; each of them is a remedy, when used alternately. He must neither write nor read, nor speak with vehemence, especially after supper; at which time neither is thinking very safe for him; but above all things a vomit is hurtful.

CHAP. V.

DIRECTIONS FOR THOSE THAT LABOUR UNDER A LIPPITUDE, GRAVEDO, CATARRH, AND DISORDERS OF THE TONSILS.

Nor is the use of cold water beneficial to those only, who are distressed with a weakness in their head; but also to such as are troubled with constant lippitudes, or gravedoes, catarrhs, and disorders in their tonsils. Such people must not only pour cold water upon their head every day, but also wash their mouth with a large quantity of it; and all, that find relief from this practice, must especially make use of it, when the air has been rendered unwholesome by southerly winds. And as all strong attention or fatigue of mind after meat is hurtful to every body, so it is more particularly to those, who are liable to pains in their head, or windpipe, or any other disorders in their mouth. A person subject to gravedoes and catarrhs, may avoid these disorders by changing his air, place, or water, as little as possible; and by covering his head in the sun, so as it may neither be overheated, nor suffer by cold from the sudden intervention of a cloud; by shaving his head with an empty stomach after concoction, and neither reading nor writing after meat.

CHAP. VI.

THE PROPER REGIMEN FOR PEOPLE LIABLE TO A PURGING.

He, that is frequently troubled with a purging, ought to exercise his upper parts by the ball, and such like motions; to walk, while his stomach is empty; to avoid too great heat from the sun, and constant bathing; to anoint without sweating. He should not use a variety of food, and by no means meat stewed into broth, or vegetables of the leguminous kind, or those greens that pass quickly through the body; in fine, to take all such things as are slowly concocted. Venison, hard fish, and the roasted flesh of tame animals, are very proper. It is never fit to drink salt wine(29), nor even the weak, nor sweet wine, but the austere, of a strong body, and not over old. If he chuses mulse, it must be prepared with boiled honey. If cold drinks don't disturb his belly, he must use them principally. If any thing has disagreed with him at supper, he ought to vomit, and to repeat it the day following; on the third day to eat a small quantity of bread dipped in wine, or eggs fried in oil, or in defrutum(30), and things of a like nature: after that to return to his usual diet. After meat always to rest, and neither apply his thoughts to any subject closely, nor give himself a shock by walking however gently.

CHAP. VII.

RULES FOR THOSE THAT ARE LIABLE TO A PAIN OF THE COLON.

But if the large intestine, which is called colon[AE], is often pained, since that disorder is nothing else but a kind of flatulence, the intention to be pursued is, that concoction may be duly performed; the patient must practise reading, and other exercises, make use of the hot bath, and take his food and drink hot; lastly, let him avoid cold by all means, every thing that is sweet, and leguminous vegetables, and whatever generally causes flatulencies.

CHAP. VIII.

RULES FOR ONE THAT HAS A WEAK STOMACH.

A man, whose stomach is infirm, ought to read aloud, after reading to walk, then to exercise himself with the ball or arms, or any other kind, which agitates the superior parts; upon an empty stomach, not to drink water, but hot wine; to take food twice a day, but in such quantity, as he can easily concoct; to make use of small and austere wine, and to take his drink after meat rather cold. The indications of a weak stomach are paleness, leanness, pain in the præcordia, nausea, involuntary vomiting, a pain of the head, when the stomach is empty: where these signs are not found, the stomach is strong. And we are not to believe our countrymen, who, when they are indisposed, and have a strong inclination for wine or cold water, defend their luxury by pretending the stomach does not do its office. But those that concoct slowly, and whose præcordia on that account are inflated, or who, by reason of any heat, are accustomed to be thirsty in the night-time, before going to rest may drink two or three cyathi of wine through a small pipe. It is good also against a slow concoction to read aloud, then to walk, afterwards to anoint or bathe, to drink always cold wine, and after meat to drink largely, but in the way I mentioned already by a siphon: lastly, to conclude all the drinks with cold water. He, whose food grows sour in his stomach, before he eats, should drink egelid water, and vomit. But if the use of this should

occasion a looseness, whenever he is relieved of that complaint, he should by all means make use of cold drinks.

CHAP. IX.

DIRECTIONS FOR THOSE THAT ARE LIABLE TO PAINS OF THE NERVES.

He that is subject to pains in the nerves, as is common in the gout of the hands or feet, ought as much as possible to exercise the part affected, and expose it to labour and cold; unless the pain has become violent, in which case rest is best. Venery is always hurtful. Concoction is necessary, as well in this, as in all disorders of the body: for crudity injures it more than any thing; and whenever the body is out of order, the diseased part feels it most sensibly. As concoction is an adversary to all diseases, so some again are relieved by cold, and others by heat. Either of which every one ought to procure, according to the habit of his body. Cold is hurtful to an old or slender man, to a wound, to the præcordia, intestines, bladder, ears, hips, shoulders, private parts, teeth, bones, nerves, womb, and brain. It also renders the surface of the skin pale, dry, hard, and black. From this proceed shudderings and tremours. But it is beneficial to young people, and all that are of a full habit. The mind also is more brisk, and the concoction goes on better, when ’tis cold, if due care is taken to guard against it. Cold water poured on, besides being useful to the head, does good to the stomach. It is likewise of service to the joints, and pains, which are not attended with ulcers; also to persons, that are too ruddy, if they be free from pain. Heat helps whatever cold hurts; and those

too that have blear eyes, if they have neither pain nor an effusion of tears; also contracted nerves, and especially those ulcers which arise from cold. It causes a good colour in the body, and promotes the excretion of urine. In too great a degree, it enervates the body, softens the nerves, and relaxes the stomach. But neither cold nor heat is by any means safe, coming suddenly upon persons unaccustomed to it; for cold occasions pains in the sides, and other disorders, and cold water causes scrophulous swellings; heat hinders concoction, prevents sleep, wastes by sweat, and renders the body obnoxious to pestilential distempers.

CHAP. X.

DIRECTIONS IN A PESTILENCE.

There are some rules necessary to be observed in a pestilence by a man, who continues in good health, but cannot however be secure. At that time it is proper to take journies and to sail. When that can't be done, to use gestation, gentle walking in the open air before the heat of the day, and unction with the same moderation; and as has been directed above, to avoid fatigue, crudity, cold, heat, and venery, and confine himself to a strict regimen. If he feel any heaviness hanging about his body, then he is neither to rise in the morning, nor walk barefooted at any time, much less after meat or the bath; nor to vomit either with an empty stomach, or after supper: neither should the belly be purged; and if it grow loose of itself, it must be restrained. Abstinence should rather be observed, if the body is plethoric. Also it is proper to avoid the bath, sweating, sleeping in the middle of the day, especially after meat; which by the way, it is more convenient to take once a day, and that sparingly, lest it should occasion crudity: every other day to drink alternately water and wine. These rules being carefully observed, as little alteration as possible should be made in the usual course of life. And as they are to be practised in every pestilence, so principally in that, which is occasioned by southerly winds. And the very same precautions are necessary for those that take journies, when they have set out from home in a

sickly season of the year, or have come into sickly countries. But if the nature of any engagements should prevent the observance of the other rules, yet it will be necessary to live abstemiously; and thus to change from wine to water, and from that to wine again, in the manner that has been prescribed above.

A. CORNELIUS CELSUS

OF

MEDICINE.

BOOK II.

PREFACE.

Of the approach of a disorder there are many signs. In the explication of which, I shall, without hesitation, make use of the authority of the ancients, and more especially that of Hippocrates; as even the more modern physicians, although they have made alterations in the method of curing, nevertheless confess, that he has delivered the best prognostics from these signs. But before I speak of those antecedents, which give cause to apprehend distempers ensuing; it seems not improper to explain, what seasons of the year, what kinds of weather, what times of life, what constitutions are most safe from, or most obnoxious to dangers, and what kinds

of disorders are most to be feared in each of these. Not but in any weather(1), men of all ages and all habits, fall into all kinds of distempers, and die of them too; but because some events are more frequent than others. And therefore it is useful for every person to know, against what, and when, he should be most upon his guard.

CHAP. I.

OF THE DIFFERENT SEASONS, WEATHER, AGES, CONSTITUTIONS, AND THE DISEASES PECULIAR TO EACH.

The most healthful season then is the spring, next to that the winter, the summer is more dangerous than either, the autumn by far the most dangerous of all. With regard to the weather, that is best, which is equal, whether it be cold or hot: that, which varies most, is the worst. For this reason it is, that the autumn destroys the greatest number. For generally in the middle of the day it is hot, the nights, mornings, and evenings too, are cold: thus the body relaxed by the *preceding* summer, and by the frequent meridian heats *of autumn*, is exposed to sudden cold. But as this is most common in this season, so it is hurtful, whenever it happens. When the weather is equal, serene days are most healthful: rainy are better than those that are only misty or cloudy: and in winter those days are best, that have no wind at all; in summer, that have the westerly breezes. If the winds blow from any of the other quarters, the northerly are more salutary than the easterly or southerly. Nevertheless these sometimes differ according to the situation of countries. For generally in every place a wind, that comes from the inland parts, is healthful; one from the sea is sickly. And not only health is more certain in a good temperature of the weather, but even the more malignant distempers, which happen to come on then, are more

mild and sooner removed. That air is the worst for a sick person, which has occasioned his distemper; insomuch that in such a case, a change for weather in it's own nature worse is favourable.

The middle age is safest, because it is neither endangered by the heat of youth, nor the coldness of old age. Old age is more liable to chronical diseases, and youth to acute ones. The body most promising for health is the square, neither over slender, nor over fat. For a tall stature, as it is comely in youth, so it quickly wears out by age. A slender body is weak, a corpulent heavy.

Whatever disorders arise from the motion of the humours, are generally to be most apprehended in the spring(2); so that, at this season, lippitudes, pimples, hæmorrhages, abscesses of the body, which the Greeks call apostemata[AF], atrabilis, which they name melancholia[AG], madness, epilepsy, angina, gravedoes, and catarrhs, usually occur. Also those distempers in the joints and nerves, which sometimes are troublesome, and sometimes easy, at this time of the year are the most apt both to begin and return. Neither is the summer altogether free from most of the above-mentioned distempers; but adds moreover fevers, either ardent, or tertian, vomitings, purgings, ear-achs, ulcers of the mouth, gangrenes, both in the other parts of the body, and chiefly in the private parts; and all these disorders that waste a man by sweat. There is hardly any of these, that is not found in the autumn; but there arise then, besides irregular fevers, pain of the spleen, dropsical disorders(3), consumption, which the Greeks call phthisis[AH];

difficulty of urine, which they term stranguria[AI]; the distemper of the smaller intestine which they name ileos[AJ], there happens also what the Greeks call lienteria[AK]; pains of the hips, epileptic disorders. And the same season is mortal to those that are worn out with long diseases, and such, as have been oppressed by the preceding summer; and it dispatches some by new distempers, and involves others in very tedious ones, especially quartan agues, which may even continue through the winter. Nor is any season more liable to the plague, of whatever kind it be, however various in its manner of hurting. The winter provokes pains of the head, the cough, and whatever disorder is contracted in the fauces, sides, or bowels.

With regard to the varieties of weather, the north wind raises a cough, exasperates the fauces, binds the belly, suppresses urine, excites shudderings, also pain of the side and breast; yet it braces a sound body(4), and renders it more mobile and brisk. The south wind causes dulness of hearing, blunts the senses, raises a pain of the head, opens the belly, and renders the whole body heavy, moist, and languid. The other winds, by how much they approach more nearly to either of these, produce effects the more similar to each of them. All heat inflames the liver and spleen, enervates the mind, and occasions faintings, and hæmorrhages. Cold causes sometimes convulsions, and sometimes a tetanus, the Greek name for the first is spasmos[AL], and for the other tetanos[AM]: it produces blackness in ulcers, and a shuddering in fevers. In dry weather we meet with acute fevers, lippitudes, dysenteries, stranguries,

pains of the joints; in rainy, tedious fevers, diarrhœas, angina, gangrenes, epilepsies, palsy, which the Greeks call paralysis[AN]. Nor is the present weather only to be considered, but also what has been its course for some time. If a dry winter has been attended with northerly winds, and the spring with southerly, and rains, there most commonly ensue lippitudes, dysenteries, fevers, and these chiefly in more delicate bodies, particularly women. But if southerly winds and rains have prevailed in the winter, and the spring be cold and dry, then indeed pregnant women, whose time is near, are in danger of a miscarriage; and those, that go their full time, bring forth weakly children, not likely to live. Other people are attacked with dry lippitudes, and if they are old, with bad gravedoes and catarrhs. But if the southerly winds have continued from the beginning of winter to the end of spring, people are very quickly taken off by pleurisies, and fevers attended with a delirium, which is called phrenitis[AO]. But when the heat begins with the spring, and continues through the summer, profuse sweating in fevers necessarily follows. But if a dry summer has been attended with northerly winds, and the autumn with rains, and southerly, all the following winter we find coughs, catarrhs, hoarseness, and in some a consumption. But if the autumn too is equally dry, and the same northerly winds blow, all the more delicate bodies, amongst which I placed women, enjoy a good state of health: and for the more robust, they may possibly be attacked with dry lippitudes, and fevers either acute, or tedious, and atrabiliary disorders.

As to the different ages, children, and those a little more advanced, have their health best in the spring, and are most safe in the beginning of summer; old men in the summer, and beginning of autumn; young and middle aged men in the winter. The winter is more hurtful to old men, and the summer to youths. For the peculiar weaknesses, that appear at different times of life, first of all infants and young children will be troubled with spreading ulcers of the mouth, which the Greeks call aphthæ[AP], vomitings, nightly watching, humour in the ears, and inflammations about the navel. The peculiar complaints of such as are teething, are exulcerations in the gums, convulsions, slight fevers, purgings, and these are chiefly troublesome about the cutting of the canine teeth. Infants of the fullest habit, and whose bellies are very much bound, are most liable to these dangers. But when they have grown up a little, there appear disorders of the glands, and different inclinations of the vertebræ, which compose the spine, scrophulous swellings, some painful kinds of warts, by the Greeks called acrochordones[AQ], and many other tubercles. In the beginning of puberty, many of the above-named, and long fevers, and hæmorrhages from the nose. And generally all children are most in danger first about the fortieth day, then the seventh month, then the seventh year, after these at the time of puberty. Moreover any distempers, which commence in infancy, and are terminated neither by puberty, nor in men by their first commerce with women, nor in women by the appearance of their menses, commonly continue long: yet more frequently these puerile disorders of

long standing are removed by these means. Youth is most subject to acute disorders, and epileptic, and to a consumption: and they are commonly young men, who spit blood. After this age, come on pleurisies and peripneumonies, lethargy, cholera, madness, and discharges of blood from certain mouths, as it were, of the veins, by the Greeks called hæmorrhoides[AR]. In old age, difficulty of breathing, and making urine, gravedo, pains of the joints and kidneys, palsies, bad habit of body, which the Greeks call cachexia[AS], nightly watchings, tedious disorders of the ears, of the eyes, and nose, and especially a loose belly, and its consequences a dysentery, or lientery, and other indispositions incident to that habit. Besides these the slender are distressed with consumptions, purgings, catarrhs, and pains of the bowels, and sides. The corpulent generally are oppressed with acute diseases, and difficulty of breathing, and often die suddenly, which seldom happens in a more slender body.

CHAP. II.

OF THE SIGNS OF AN APPROACHING ILLNESS.

Before an illness, as I mentioned above, there appear some signs of its approach. All of them have this in common, that the body alters from its ordinary state; and not only for the worse, but even for the better. For this reason, if one has become more plump, and looks better, and of a more florid complexion than usual, he ought to hold these advantages suspected. For because these things can neither continue at a stay, nor admit further improvement, they generally run backward very fast, like some heavy body tumbling down. But it is a worse sign, when one is emaciated contrary to his natural habit, and has lost his colour and comeliness: because bodies redundant can allow something to be carried off by a distemper; the deficient have not wherewithal to bear the force of the distemper itself. Besides there is cause to be presently alarmed, if the limbs are heavy; if frequent ulcers break out; if the body has grown hotter than common; if sleep be too heavy; if the dreams are tumultuous; if one awakes oftner than usual, and then falls asleep again; if the body of a person asleep sweats in some parts contrary to custom, especially if that be about the breast, or neck, or legs, or knees, or hips; also if the mind is languid; if there is a reluctance to speaking and motion; if the body be indisposed to action; if the præcordia are pained, or the whole breast, or which happens in most people, the head; if the mouth is filled with saliva; if the eyes

feel pain in turning; if the temples be strait bound(5): if the limbs have shudderings; if the breathing is difficult; if the arteries in the forehead are dilated and beat strong; if there be frequent yawnings; if the knees feel tired, or the whole body be afflicted with a lassitude. Several of these things often, some of them always, precede a fever. This, however, ought to be first considered, whether any of these happen frequently to a person without any consequent uneasiness. For there are some peculiarities in the constitutions of particular persons, without the knowledge of which, it is not easy to prognosticate what is to happen. With reason therefore a man is free from apprehensions about those things, which he has often escaped without danger: he only is justly uneasy, to whom these appearances are new, or who has never been secured from their bad effects without proper precautions.

CHAP. III.

GOOD SYMPTOMS IN SICK PEOPLE.

When any person is seized with a fever, it is certain he is not in danger, if he lies either upon his right or left side, as may have been usual with him, with his legs a little drawn up, which by the way is commonly the lying posture of a person in health; if he turns himself with ease; if he sleeps in the night-time, and keeps awake in the day; if he breathes easily; if he does not struggle; if the skin about the navel and pubes be full(6); if his præcordia be equally soft on both sides, without any sense of pain; or although they are a little swelled, yet yield to the impression of the fingers, and are not pained. This illness, though it will continue some time, yet will be safe. The body also, which is every where soft, and in the same degree of heat, and which sweats all over equally, and whose fever is removed by that sweat, is in a fair way of doing well. When the body is recovering its health, sneezing also is amongst the good signs, and an appetite, either continued from the beginning, or even coming after a nausea. Nor should that fever alarm, which terminates in one day; nor indeed that, which though it has prevailed for a longer time, yet has totally intermitted betwixt paroxysms, so as the body became free from all complaint, which the Greeks call eilicrines[AT]. If any thing happens to be discharged by vomiting, it ought to be a mixture of bile and phlegm: and the sediment of the urine white, smooth, equal; so that, if there is

any thing like small clouds swimming in it, that subsides to the bottom. And the stools in one, who is safe from danger, are soft, figured, and evacuated at nearly the same intervals, as was usual in health, and in quantity duly proportioned to the nourishment, that is taken. A loose belly is worse: but even this should not immediately be esteemed dangerous, if the discharge be of a harder consistence in the morning, or gradually turn less liquid, and the excrements be reddish, and their offensive smell don't exceed that of the like discharge of a healthy man. And there is nothing bad in voiding some worms at the end of the distemper(7). If a flatulency has occasioned a pain and swelling in the upper parts without an inflammation, a rumbling of the belly from thence to the lower parts is a good sign; and more so, if it has found an easy passage with the excrements.

CHAP. IV.

BAD SYMPTOMS IN SICK PEOPLE.

On the other hand there is hazard of a dangerous distemper, when the patient lies supine, with his arms and legs extended: when he inclines to sit up during the greatest violence of an acute distemper, especially in a peripneumony: when he is distressed with wakefulness in the night, even although he sleep in the day time. Now sleep, which happens betwixt the fourth hour(8) and night, is worse than that, which is betwixt morning and the same hour. But it is worst of all, if he neither sleep in the night, nor the day time: for that cannot well happen without a constant delirium. Neither is it a good sign to be oppressed with sleep beyond measure: and the worse, the nearer the sleep comes to being continued day and night. It is also a sign of a dangerous distemper to breathe quickly, and with vehemence; for shudderings to have come on after the sixth day; to spit matter; to expectorate with difficulty; to have constant pain; to be much distressed with the distemper; to toss the arms and legs about; to weep involuntarily; to have a glutinous humour sticking to the teeth; for the skin about the navel and pubes to be emaciated; for the praecordia to be inflamed, painful, hard, swelled, tense: the case is worse, if these appearances be more on the right side than on the left: but the danger is still greatly increased, if at the same time the pulsation of the arteries there be violent. Again, it indicates a bad distemper to be too

quickly emaciated; to have the head, feet, and hands cold, with the belly and sides hot; or for the extremities to be cold during the violence of an acute distemper; or to shudder after sweating; or after vomiting to have the hiccough, or the eyes to be red; or after having an appetite for food, or at the end of long fevers, to loath it; to sweat much, and especially a cold sweat; or to have sweats not equally diffused over the whole body, and such as do not terminate the fever. They are also bad fevers, which return every day at the same time; or those, that always have paroxysms equally violent, and which do not remit every third day; or those, that continue so as to increase in their paroxysms, and only remit in their intervals, but never leave the body quite free from disorder. It is worst of all, if the fever does not at all remit, but continues with equal violence. It is dangerous too for a fever to come after a jaundice, especially if the praecordia have continued hard on the right side; or on the left, if attended with pain there. Every acute fever ought to give us no small apprehensions: and always in such a fever, or after sleep, convulsions are terrible. It is also a sign of a bad distemper to wake with a fright, and likewise in the beginning of a fever for the mind to be presently disordered, or any limb to become paralytic. In that case, though the patient escape with life, yet for the most part that limb is debilitated. A vomiting also of pure phlegm or bile is dangerous; and if it be green, or black, it is worse. Urine is bad, where the sediment is reddish or livid; and worse, in which there is a kind of small and white threads: and worst of all, that, which bears the resemblance of small

clouds, composed as it were of particles of bran. Thin and white urine is bad, but especially in phrenitic patients. It is bad to have the belly entirely bound. And a purging too in fevers is dangerous, where it will not allow a man to rest in his bed; especially if the discharge be very liquid, or whitish, or pale, or frothy. Besides these it portends danger, if the excretion be small in quantity, glutinous, smooth, white, and at the same time of a palish colour; or if it is either livid, or bilious, or bloody, or of a more offensive smell than common. An unmixed discharge also, which comes after long fevers, is bad.

CHAP. V.

SIGNS OF LONG SICKNESS.

After the foregoing symptoms have appeared, 'tis known, that a distemper will become tedious: for it must necessarily be so, unless it be mortal. And there is no other hope in violent diseases, than that the patient may escape by eluding the first shock of the distemper, that there may be room for the application of proper methods of cure. But some signs appear in the beginning of a distemper, from which we may gather, that although it does not prove mortal, yet it will last for a considerable time. In fevers not violent, when a cold sweat comes on only about the head or neck; or when the body sweats without the fever intermitting; or when the body is sometimes cold, and sometimes hot, and the colour changes; or when in fevers an abscess, which has been formed in some part, does not prove salutary; or when the patient, considering the time of his illness, is but little emaciated. Also, if the urine at some times is thin and limpid, and at other times has some sediment; and if what subsides be smooth, and white, or red; or if it have the appearance of motes; or if it send up air bubbles.

CHAP. VI.

THE SYMPTOMS OF DEATH.

But though in such circumstances there is reason to fear, yet there remains some hope. But we are sure a person is come to the last stage, when the nose is sharp, the temples shrivelled, the eyes hollow, the ears cold, and languid, and slightly inverted at their extremities, the skin about the forehead hard and tense, the colour either black or very pale; and much more so, if these things happen without any preceding wakefulness, or purging, or fasting: from which causes this appearance sometimes arises, but then it vanishes in one day. So that if it continues longer, it is a forerunner of death. And if it remains the same for three days in a tedious distemper, death is very near: and more especially if besides the eyes can't bear the light and shed tears; and the white part of them grows red; and their small vessels are pale; and humour floating in them at last sticks to the angles; and one eye is less than the other; and they are either very much sunk, or much swelled; and when the eye-lids in sleep are not closed, but betwixt them there appears some part of the white of the eye; provided it be not occasioned by a flux; when the eye-lids also are pale, and the same paleness discolours the lips and nose; and also when the lips, and nose, and eyes, and eye-lids, and eye-brows, or some of these, are distorted, and the patient from pure weakness loses his hearing, or

sight.

Death is also to be expected, when the patient lies supine, and his knees are contracted; when he slides downward now and then towards his feet; when he lays bare his arms and legs, and tosses them about irregularly, and there is no heat in them; when he gapes with his mouth; when he sleeps constantly; when being insensible, he grinds his teeth, and had not that custom in health; when an ulcer, which broke out either before, or in the time of his sickness, has grown dry, and turned either pale or livid, The following symptoms are also deadly; pale-coloured nails, and fingers; a cold breath; or if one in a fever, and acute disease, or madness, or peripneumony, or pain of the head, gathers the wool off the cloaths with his hands, or draws out and smooths their edges, or catches at any small prominences in an adjoining wall. Pains also, that have begun in the hips and lower parts, if they have been translated to the bowels, and suddenly ceased, are sure prognostics of approaching death; and more so, if any of the other symptoms have also concurred. And it is impossible to save that person, who labouring under a fever without any tumour, is suddenly, *as it were*, strangled, or cannot swallow his spittle; or one, whose neck, while the fever and habit of body remain the same, is turned aside, so that it is equally impossible for him to swallow any thing; or him, who at the same time has a continued fever, and extreme weakness of body; or when, without an abatement of the fever, the external surface of his body is cold, and the internal parts so hot as to produce thirst; or one, who, the fever continuing as

in the former case, is distressed at once with a delirium and difficulty of breathing; or one, who, after drinking hellebore, has been seized with convulsions; or one, that has lost his speech after being intoxicated with liquor, for he is commonly carried off by convulsions, unless either a fever has supervened, or he has begun to speak at the time, when the effects of the liquor shall be over. A pregnant woman is also easily destroyed by an acute distemper. And likewise any person, whose disorder is increased by sleep; and one, who in the beginning of a recent disorder, vomits, or voids by stool, atrabilis; and the event is the same, where this has been discharged in either of these ways, when the body has been already extenuated, and wasted by a long illness. A bilious spitting, and purulent, whether they come up separately, or mixed, shew that there is danger of death. And if this appearance has commenced about the seventh day of a disease, the consequence is, that the patient will die about the fourteenth, unless some other symptoms more benign, or malignant, come on: and these after symptoms, the more gentle or violent they are, signify that death will happen so much the later, or sooner. A cold sweat likewise in an acute fever is mortal; and in every disease, a vomiting variegated with different colours; and especially if it be fetid. And it is also extremely bad to vomit blood in a fever. The urine is commonly of a bright yellow colour and thin in great crudity; and often before it has time to concoct, kills the patient. Upon this account, if it continue so for any time, it prognosticates danger of death. But the worst of all

and most deadly is the black, thick, and fetid. And such as this is the worst in men and women; but in children that, which is thin and watery. A variegated discharge also by the belly is very bad; and such as contains strigments(9), blood, bile, and something green, and these either at different times, or all together in a kind of mixture, but so as each of them appear distinctly. Yet 'tis possible for one to endure this somewhat longer. But a speedy death is denoted, when the discharge is liquid, and withal either black, or pale, or fat; especially if besides it have an intolerable stench.

I am sensible I may be asked, how it happens, if the signs of future death are infallible, that some, who are entirely given over by physicians, should recover, and that some are reported to have come to life again, even when they were carried out to be buried? Nay, the justly famed Democritus maintained, that even the marks that life was gone, which physicians had trusted, were not certain: so far was he from allowing, that there could be any certain prognostics of death. In answer to which I shall not insist, that some marks, which bear a great resemblance to each other, often deceive not the able, but the unskilful physicians, (which Asclepiades knowing, when he met a funeral, cried out, that the person, whom they were about to bury, was alive) and that the art is not to be charged with the faults of any of its professors. But I will answer with more moderation; that medicine is a conjectural art, and that the nature of conjecture is such, that although it answers for the most part, yet sometimes it fails. And if a *prognostic* may deceive a person, perhaps in one of a thousand

instances, it must not therefore be denied credit, since it answers in innumerable others. And this I say not only with regard to the mortal, but also to the salutary *symptoms*. For hope too is sometimes disappointed, and one dies, whom at first the physician thought in no danger. And those things, which have been contrived for curing, sometimes occasion a change for the worse. Nor is it possible for human weakness to avoid this, in so great a variety of constitutions. But medicine however deserves credit, which most frequently, and in the greatest number of sick people by far, is of service. Nevertheless we ought not to be ignorant, that the prognostics both of recovery and death are more fallacious in acute distempers.

CHAP. VII.

OF THE SIGNS IN PARTICULAR DISEASES.

Having then mentioned those signs, which belong to diseases in general, I shall now proceed to point out those marks, which may attend the particular kinds of them. Now there are some of these, which happen before, and others in the time of fevers, which discover either the state of the internal parts, or what is likely to follow. Before fevers, if the head be heavy, or there be a dimness in the eyes after sleep, or there be frequent sneezings, some disorder from phlegm about the head may be feared. If a person abound with blood, or be very hot, the consequence is, that there may be an hæmorrhage from some part. If any person is emaciated without an evident cause, he is in danger of falling into a bad habit of body. If the præcordia are pained, or there is a troublesome flatulency, or if the urine is discharged the whole day unconcocted, 'tis plain there is a crudity. Such as have a bad colour for a long time without a jaundice, are either distressed with pains of the head, or labour under a malacia. Those, whose faces long continue pale and swelled, have disorders either of the head, or bowels, or belly. If a boy in a continued fever has no passage in his belly, and his colour is changed and he is deprived of sleep, and is constantly bemoaning, himself, convulsions are to be apprehended. A frequent catarrh in a slender body and tall, gives ground to fear a consumption. When for several days there is no stool, it portends either a

sudden purging, or a slight fever. When the feet swell, and there is a long continued purging, or pain in the bottom of the belly and hips, a dropsical disorder is impending: but this kind of distemper commonly arises from the ilia. Those also are exposed to the same danger, whose belly, discharges nothing, when they have a stimulus, unless with difficulty, and the excrements hard. When there is a swelling in the feet, and when the like tumour, sometimes in the right, sometimes in the left side of the belly alternately rises and falls, that disorder seems to arise from the liver. It is a mark of the same distemper, when the intestines about the navel are pained, which the Greeks call strophos[AU], and pains of the hip continue without being relieved either by time or remedies. If a pain of the joints, for instance in the feet or hands, or in any other part, be attended with a contraction of the nerves there; or if any limb fatigued by slight exercise, is equally distressed by heat and cold, we may expect the gout either in the feet or hands, or that there will be a disease in that joint, where the pain is felt. Such as have had hæmorrhages from the nose, while they were children, which afterwards ceased, must either be afflicted with pains of the head, or have some troublesome exulcerations in their joints, or fall into some languishing distemper. Women, whose menses are suppressed, will be subject to excruciating pains of the head, or a disorder in some other part. And those are liable to the same dangers, who have complaints in their joints, such as pains and swellings coming and going, without the gout, and such-like distempers. Particularly if their temples are

often pained, and their body sweats in the night-time, and their forehead itches, there is fear of a lippitude. If a woman after delivery has violent pains, with no other bad symptoms, about the twentieth day there will either be an eruption of blood from the nose, or some abscess in the lower parts. And *in general* in any person, a violent pain about the temples and forehead, will be removed in one of these two ways: more probably by an hæmorrhage, if the person be young; if somewhat more advanced, by a suppuration. A fever, which goes off suddenly without any apparent reason, without good signs, commonly returns. A person, whose fauces are filled with blood, both in the day-time, and in the night, will be found to have an ulcer there, if neither pains of the head, nor of the præcordia, nor a cough, nor vomiting, nor slight fever have preceded. If a woman is attacked with a slight fever from a disorder in the groin, and the cause does not appear, there is an ulcer in the womb. Thick urine, in which there is a white sediment, implies that there is a pain about the joints, or the bowels, and fear of some impending distemper. When it is green, it shows, that the bowels will be pained, or that there will be a swelling attended with some danger; or at least, that the body is not sound. But if there is blood or pus in the urine, either the bladder or kidneys are ulcerated. If it be thick, and contain in it some small caruncles, or something like hairs; or if it be frothy, or fetid; or sometimes bring off something like sand, and sometimes like blood; and the hips be pained, and those parts, which lie between them, and above the pubes; and besides

these if there be frequent eructations, sometimes a bilious vomiting, and the extremities be cold, and there is a frequent inclination to make water, but great difficulty in it, and what comes away be limpid, or reddish, or pale, and gives some small relief, and the belly be discharged with much wind; in such circumstances the distemper lies in the kidneys. But if the urine drops away slowly, or if blood is discharged with it, and in that some bloody concretions, and it is made with difficulty, and the internal parts about the pubes are pained, the fault is in the bladder. Those, that have calculous concretions, are known by these symptoms. The urine is made with difficulty, and comes away slowly, and by drops, and sometimes involuntarily, is sandy; sometimes blood, or bloody concretions, or something purulent is discharged with it. Some make it more readily standing upright, others lying upon their back: especially those, that have large stones; some even in an inclined posture, and these by drawing out the penis, alleviate their pain. There is also a sensation of weight in that part, which is increased by running, and every kind of motion. Some also in the paroxysm of the pain, cross their feet over one another, often changing them. But women are often obliged to rub the external orifice of their pudenda with their hands: sometimes applying their finger to that part, when it presses upon the neck of the bladder, they feel the stone. But where any expectorate frothy blood, their disorder is in the lungs. A pregnant woman, whose belly is very loose, may possibly miscarry. If the milk flows from her breast, the fœtus is weak. Hard breasts shew the

child to be sound. A frequent hiccough, and of longer continuance than ordinary, is a sign of an inflammation of the liver. If tumours upon ulcers have suddenly disappeared, and this has happened in the back, we may be apprehensive either of convulsions, or a tetanus: but if in the fore part of the body, either a pleurisy or madness is to be expected. Sometimes also a purging, which is the safest of them all, follows such an accident. If the hæmorrhoidal veins, in one used to a discharge of blood from them, suddenly stop, either a dropsical disorder or a consumption ensues. A consumption also comes on, if suppurated matter derived from a pleurisy cannot be carried off within forty days. But where there is a long continued grief attended with long fear and watching, the atrabiliary distemper is the consequence. Those, who have frequent hæmorrhages from the nose, labour under a swelling of the spleen, or pains of the head: and they commonly see imaginary objects floating before their eyes. But those, whose spleens are large, have their gums diseased and a stinking mouth, or an hæmorrhage in some part. If none of these happen, bad ulcers will be formed in their legs, and black cicatrices from them. Where there is a cause of pain and no sense of it, the mind is disordered. If blood has been collected in the abdomen, it is there converted into pus. If a pain removes from the hips and the lower parts into the breast, and no bad symptom has supervened, there is danger of a suppuration in that place. Those, that without a fever have a pain, or itching, with redness and heat, in any part, will have a suppuration there. Limpid urine also

in a valetudinary person portends some suppuration about the ears.

Now as these appearances, even without a fever, contain indications of what is latent or future, they are much more certain when accompanied with a fever; and then symptoms of other disorders also shew themselves. Wherefore when a person speaks more quickly than he used to do in health, and of a sudden talks much, and that with greater confidence than ordinary; or when one breathes slow, and with great force, and the pulse beats high, with hard and swelled præcordia, then there is a fear of approaching madness. Frequent motion of the eyes also, and a darkness arising before them, together with head-ach; or loss of sleep without any pain, and a continual watching day and night; or lying upon the belly contrary to custom, if that is not occasioned by a pain of the belly itself; also an unusual grinding of the teeth, while the body continues strong, are signs of madness. If an abscess has been formed, and subsides before a discharge by spitting comes on, the usual fever still continuing, there will be danger first of madness, and then of death. An acute pain also of the ear, with a continued and strong fever, often disorders the mind: and of this malady younger people sometimes die in seven days; those that are older hold out something longer: because their fevers are not equally violent, nor their distraction so great; so that they last till the distemper is resolved into pus. A suffusion of blood in the breasts of a woman betokens approaching madness. Those, that have long fevers, will either have an abscess formed somewhere, or pains of the joints. Those, whose

breath is greatly straitened in passing through the fauces in fevers, will soon fall into convulsions. If an angina suddenly disappears, the distemper is removing into the lungs; and that is often fatal before the seventh day: and if that does not happen, the consequence is a suppuration in some part. Lastly, after long purgings come dysenteries; after these a lientery; after violent catarrhs a consumption; after pleurisies diseases of the lungs; after which madness; after great heats of the body a tetanus or convulsion; after a wound of the head a delirium; after great torment for want of sleep, convulsions; when the blood vessels above ulcers are in strong motion, there will be an hæmorrhage.

A suppuration is produced many ways(10); for if fevers unattended with pain continue long without any manifest cause, the disorder is transferred upon some particular part: but this happens only in younger people; for in the elderly, a quartan ague is the common consequence of such a disease. A suppuration also happens, if the præcordia being hard and pained have neither carried off the patient before the twentieth day, nor an hæmorrhage from the nose has ensued; and this holds chiefly in youths, especially if in the beginning of the distemper they had dimness of the eyes, or pains of the head: but then the abscess forms in the lower parts *of the body*. But if there be a soft tumour in the præcordia, and it has not ceased within sixty days, and the fever continues all that time, then the abscess forms in the superior parts: and if there is not a discharge of blood from the nose(11) in the beginning, it breaks out about the ears. And as every tumour of long

standing generally tends to suppuration, so one, that is seated in the præcordia is more likely to have that issue, than one that is in the belly: and one, that is above the navel, than one, that is below it. Also if there is a sense of lassitude in a fever, an abscess is formed either in the jaws, or the joints. Sometimes too the urine continues long and thin, and crude, and the other symptoms are good: in this case for the most part an abscess is formed below the transverse septum (which the Greeks call diaphragma). If a peripneumony is removed neither by expectoration, nor by cupping, nor bleeding, nor a proper regimen, it sometimes gives rise to some vomicæ, either about the twentieth day, or thirtieth, or fortieth, and even sometimes about the sixtieth. Now we must date our reckoning from that day, in which the person was first taken with the fever, or seized with a horror, or felt a weight in the part. But these vomicæ are generated sometimes in the lungs, sometimes about the ribs. Where the suppuration is seated, it raises a pain and inflammation, and there is a greater heat there: and if one has lain down upon the sound side, he imagines it loaded with some weight. And every suppuration, that is not yet visible, may be known by the following signs: the fever does not wholly intermit, but is more mild in the day-time, and increases at night, there is plentiful sweating, an inclination to cough, and hardly any thing brought up by it, the eyes are hollow, cheeks red, the veins under the tongue white, the nails of the hands crooked, the fingers, especially their extremities, hot; there are swellings in the feet, difficulty in breathing, loathing of food, pimples breaking out over the

whole body. But if the pain, cough, and difficulty of breathing have come on immediately at the beginning, the vomica will break before, or about the twentieth day. If these have begun later, they must of course increase; but the less quickly they have appeared, the more slowly will they be removed. It is common also in a severe distemper for the feet, hands, and nails to turn black: and if death has not followed, and the other parts of the body are restored, yet the feet fall off.

CHAP. VIII.

WHAT SYMPTOMS ARE DANGEROUS, OR HOPEFUL IN PARTICULAR DISEASES.

Our next business is to explain the particular marks in every kind of distemper, which either afford hope, or indicate danger. If the bladder be pained, and there be a discharge of purulent urine, and also a smooth and white sediment in it, there is no danger. In a peripneumony, if the pain is mitigated by the spitting, although that be purulent, yet if the patient breathes easily, expectorates freely, and is not much distressed with the distemper, he may possibly recover his health. Nor need we immediately give way to fears, if the spittle is mixed with some reddish blood, provided that presently ceases. Pleurisies, that suppurate, when the matter is carried off within forty days, are thereby terminated. If there is a vomica in the liver, and the matter discharged from it be unmixed and white, the patient easily recovers, for that disorder is seated in the membrane. Now these kinds of suppurated tumours are tolerable, which are directed towards the external parts, and rise to a point. But of those, which point inward, the more mild are such, as while close, don’t affect the skin, and suffer it to remain without pain, and of the same colour with the other parts. Also pus from whatever part it is discharged, if it be smooth, white, and uniform, is not at all dangerous; and if after the evacuation of it the fever has presently abated, and the nausea and thirst have ceased to be troublesome.

If at any time also a suppuration falls into the legs, and the patient's discharge by spitting becomes purulent instead of reddish, the danger is less. But in a consumption, he that is to recover, will have his spitting white, uniform, and of the same colour, with out phlegm: and whatever falls down from the head by the nostrils, should be of a like nature. 'Tis far best to be altogether free from a fever: next to this, that it be so gentle, as neither to prevent the taking of food, nor occasion a frequent thirst. In this distemper that state of the belly is safe, in which every day consistent excrements are evacuated, in quantity proportioned to the food; and so is that body, which is least slender, and has the broadest and most hairy chest, and whose cartilage is small and fleshy. In a consumption too, if a woman has had her menses suppressed, and while the pain still remains about her breast, and shoulders, and the blood has of a sudden made its way, the distemper is commonly mitigated: for both the cough is lessened, and the thirst and febricula cease. But in the same patients, if their menses do not return, for the most part the vomica breaks: and the more bloody the discharge from it is, so much the better. A dropsical disorder is the least to be feared, which has begun without any preceding distemper. Of the next favourable sort is that, which succeeds a long distemper, if at the same time the bowels be firm; if the breathing be easy; if there is no pain; if the body is not hot; and is equally lean in its extremities; if the belly is soft; if there be no cough, no thirst; if the tongue even in sleep does grow dry; if there is an appetite for meat; if the belly yields to purging

medicines; if spontaneously it discharges excrements soft and figured; if it grows less(12); if the urine is altered by the change of wine, and by drinking certain medicinal potions; if the body is free from lassitude, and easily bears motion: for where one has all these symptoms, he is altogether safe; where most of them appear, the patient is in a hopeful way. Diseases of the joints, as the gout in the feet or hands, if they have attacked the patients young, and have not brought on a callus, may be removed; and they are most of all allayed by a dysentery, and when by any means the belly becomes loose. Also an epilepsy, that begins before puberty, is easily removed; and where a person sensibly feels the approaching fit first affecting some part of the body. It is best, that it begin at the hands or feet; next to them, at the sides; but worst of all, when it begins at the head. And in these patients also, excretions by the belly are of the greatest service. Now a purging is not in the least hurtful, which is without a fever, if it quickly, ceases; if upon feeling the belly, there is no motion perceived; if wind is discharged at the end of a stool. Nay even a dysentery is not dangerous, if blood and strigments are discharged, provided the patient is without a fever, and the other concomitants of this distemper: insomuch, that a pregnant woman may not only be cured, but her fœtus also preserved. And it is an advantage in this disorder, if the patient has come to some age. On the contrary, a lientery is more easily cured in tender age: especially if the urine begins to be excreted, and the body to be nourished with food. The same age is most favourable in pains of the hip, and arms, and in

every paralytic disorder. Amongst these, the hip, if it be without numbness, if its coldness be slight, although it be greatly pained, yet it is easily and quickly cured; and a paralytic limb, if it continue to be nourished, may be recovered. A palsy of the mouth also is cured by a loose belly. And all purging does good to one labouring under a lippitude. Madness is removed by the appearance of a varicous swelling, or sudden eruption of blood from the hæmorrhoidal veins, or a dysentery. Pains of the arms, which are propagated either to the shoulders, or hands, are cured by vomiting of atrabilis. And whatever pain moves downward, is more easily cured. A hiccough is cured by sneezing. A vomiting stops long purgings. A woman, that vomits blood, is relieved by the flux of her menses. She, whose menses are deficient, if there has been an hæmorrhage from the nose, is free from all danger. And one, that is hysteric(13) or has a difficult labour, is relieved by sneezing. To one, that has a heat and tremour, a delirium is salutary. Dysenteries are of service to splenetic people. Lastly, a fever itself, which may seem very wonderful, is often a remedy *for other distempers*. For it both cures pains of the præcordia, that are not attended with inflammation, and relieves in a pain of the liver; and entirely removes convulsions, and a tetanus, if it comes after them; and where the distemper of the smaller intestine has been occasioned by a difficulty in making urine, if by the heat it promotes urine, it gives ease. Pains of the head attended with dimness of the eyes and redness with an itching in the forehead, are removed by a discharge of blood,

either spontaneous or procured. If pains of the head and forehead arise from being exposed to the wind, or cold, or heat, they are cured by a gravedo, and sneezing. A sudden shuddering puts an end to an ardent fever, which the Greeks call causodes[AV]. When in a fever, there is a deafness, if blood is discharged from the nose, or the belly turns loose, that disorder is entirely removed. Nothing is more prevalent against deafness, than bilious stools. Those, that have small abscesses, which the Greeks call phymata[AW], formed in the urethra, are cured, when pus is discharged from thence. Now as most of these favourable turns happen of themselves, we may conclude, that nature has very great power in these very helps, which are applied by art.

On the contrary, when there is a pain in the head in a continued fever, and it does not at all remit, it is a bad and mortal symptom: and boys from the seventh to the fourteenth year are most liable to this danger. In a peripneumony, if the spitting did not come on in the beginning, but after the seventh day, and has continued above other seven days, it is dangerous: and the more mixed and less distinct the colours are, so much the worse. And yet nothing is worse, than for it to be excreted entirely homogeneous, whether it be reddish, or bloody, or white, or glutinous, or pale, or frothy: but the worst of all colours is black. A cough and catarrh are dangerous in the same disease; also a sneezing, which in other cases is reckoned salutary; and there is the greatest danger of all, if these things have been followed by a sudden purging. Now generally the symptoms, which are either good or bad in peripneumonies, are so in

pleurisies too. A discharge of bloody pus from the liver is mortal. These are the worst kinds of suppurations, which tend inward, and discolour the external skin at the same time. Of that kind, that breaks outward(14), the worst are those, that are largest and flattest. But if the fever has not gone off, when the vomica is broke, or the pus evacuated, or after its ceasing returns again; also if there be a thirst, or a nausea, or a loose belly, or livid and pale pus, if the patient expectorates nothing but frothy phlegm; then there is certain danger. And of these kinds of suppurations, which have been produced by diseases of the lungs, old men commonly die: but those; those that are younger, by the other kinds. But in a consumption, a mixed and purulent spitting, a continued fever, which also destroys the appetite, and torments with thirst, in a slender body are sure prognosticks of immediate danger. If one has lasted under this distemper even for a considerable time, when the hairs first fall off, when the urine has something floating upon it like cobwebs, and the spittle has a fetid smell, and particularly when after these a purging has appeared, he will die soon: and more especially if it be autumn: in which season commonly those, that have got over the other part of the year, come to the close of their life. It is also mortal in this distemper to have expectorated pus, and afterwards for that to have entirely disappeared. It is likewise common for this disease in young people to arise from a vomica or fistula; and they do not readily recover, unless many salutary symptoms have ensued. With regard to others, virgins are the hardest to cure, or those women, that fall into a

consumption from a suppression of the menses. A healthy person who has been taken with a sudden pain of his head, and then fallen into a deep sleep, so as to snore, and does not awake, will die before seven days are expired: and more especially if, when a looseness has not preceded, his eyelids are not closed in sleep, but the white of his eyes appears. Death however is not the certain consequence, if a fever comes on, which may remove the distemper. A dropsical disorder occasioned by an acute distemper, is seldom cured: especially if followed by the opposite symptoms to those above-mentioned. A cough likewise is equally destructive of hope in this distemper: also an hæmorrhage either upward or downward, and a collection of water in the middle of the body(15). Some people too in this disease have swellings, which afterwards subside, and then appear again. Such indeed are more safe than those mentioned before, if they take the proper care: but they commonly perish from a persuasion of their being well. Some people with good reason will wonder, how any thing can at once both be hurtful to our bodies, and in part conduce to their preservation. For whether a dropsy has filled one with water, or a great quantity of pus has been collected in a large abscess, for the whole to be discharged at once is equally mortal, as for a sound person to lose all his blood by a wound. If the joints of any person are pained, so that some tubercles from a callus grow upon them, they are never cured: and the disorders of those parts, which have either begun in old age, or have continued from youth to that time of life, though they may be sometimes

mitigated, yet are never entirely removed. An epilepsy also, that begins after the twenty-fifth year, is difficult to cure: and much more so that, which has begun after the fortieth; so that, although there may be some hope from nature, scarce any thing is to be expected from medicine at that age. In the same disease if the whole body is affected at once, and the patient is not sensible of the fit beginning in any part, but falls down suddenly, whatever his age be, he rarely gets free of the distemper: but if his intellects be injured, or a palsy has come on, there is no room for medicine. In purgings too, if attended with a fever; if with an inflammation of the liver, or præcordia, or belly; if with an intolerable thirst; if the disease has continued long; if the discharge of the belly is variegated; if it is expelled with pain, there is danger even of death: and more especially if with these *symptoms* a dysentery has grown inveterate. And this distemper sweeps off children chiefly to their tenth year: at other times of life, it is more easily endured. A pregnant woman also may be carried off by such a case: and although she herself recovers, yet she loses her child. Moreover a dysentery occasioned by atrabilis is mortal: or a sudden and black discharge from the belly, when the body is already wasted by that distemper. But a lientery is more dangerous, if the purging be frequent; if the belly is discharged at all hours, both with a rumbling, and without it; if it continues with equal violence both night and day; if what is excreted, is either crude, or black, and besides smooth and fetid; if thirst is troublesome; if urine is not made after drinking (the cause of which is, that

all the liquor at that time descends, not into the bladder, but into the intestines) if the mouth is ulcerated; if the face is red, and marked with certain spots of all colours; if the belly is puffed up as it were by fermentation(16), fat and full of wrinkles; and if there is no appetite for food. And as in these circumstances death is the plain consequence; it is much more evidently so, if the disease is already of long standing; especially if withal the patient be old. In the distemper of the smaller intestine, a vomiting, hiccough, convulsion, and delirium, are bad symptoms. In the jaundice it is the most pernicious symptom for the liver to be indurated. Those, that have disorders in the spleen, if they be seized with a dysentery, which afterwards turns to a dropsy or a lientery, it is scarce in the power of medicine to save. The distemper of the smaller intestine arising from a difficulty of urine, unless it be removed by a fever, kills within seven days. If a woman after delivery is seized with a fever, and violent and constant pains of the head, she is in danger of dying. If there is a pain and inflammation in those parts, which contain the bowels, it is a bad sign to fetch the breath often. If a pain of the head continues long without a perceptible cause, and removes into the neck and shoulders, and again returns into the head; or comes from the head to the neck and shoulders, it is dangerous: unless it produce some vomica, so that the pus may be expectorated; or unless there is an hæmorrhage from some part; or scurf break out plentifully in the head, or pustules over the whole body. It is an equally formidable distemper when a numbness and itching wander about; sometimes over the whole head,

sometimes in a part of it; or when there is something like a sensation of cold in the part, and these reach even to the end of the tongue. And though in these cases abscesses are beneficial, yet there is less hope of a recovery by their means, as they are seldom formed after such disorders begin. In pains of the hip, if there is a great numbness, and the leg and hip are cold, and the belly has no passage, but when assisted, and the excrements are slimy, and the age of the person exceed forty, the distemper will be very tedious, and at least of a year's continuance; neither will it be possible to remove it, unless it be either in the spring or autumn. At the same time of life, the cure is equally difficult, when a pain of the arms removes into the hands, or reaches to the shoulders, and produces a torpor and pain, and is not relieved by a bilious vomiting. A paralytic limb in any part of the body, if it has no motion, and pines away, will not recover its former state; and the more inveterate the distemper, and the more advanced in years the patient is, so much the less probable is the cure. And in every paralytic disorder, the winter and autumn are improper seasons for medicine: some benefit may possibly be hoped for in the spring and summer. And this distemper, when moderate, is cured with difficulty; when violent, it cannot be cured at all. Every pain also, which moves upward, yields less to medicine. If the breasts of a pregnant woman have shrunk suddenly, there is danger of a miscarriage. In a woman that has milk, and has neither had a child, nor is pregnant, the menses are suppressed. A quartan ague in the summer is short, but in the autumn commonly long; especially that, which has

come on, when the winter was approaching. If there has been an hæmorrhage followed with madness and convulsions, there is danger of death. Also if a convulsion has seized a person purged by medicines and still empty; or if the extremities are cold in the time of great pain. Nor does a person return to life, who has been hanged, and taken down with a frothing mouth. A black and sudden discharge of the belly, like black blood, whether it be attended with a fever or not, is pernicious.

CHAP. IX.

OF THE CURE OF DISEASES.

Having considered those signs, which may give us hope or fear, we must proceed to the methods of curing diseases. Now these are divided into the general and particular: the general, which relieve several distempers, the particular, which are confined to single disorders. I shall first treat of the general. But there are some of those, that not only support the sick, but conduce to the preservation of the healthy, others are made use of in sickness only.

Now every thing that assists the body, either evacuates somewhat, or adds, or draws, or restrains, or cools, or heats, and at the same time either hardens, or mollifies. Some things also are useful not in one way only, but even in two, that are not contrary to each other. An evacuation is made by bleeding, cupping, purging, vomiting, friction, gestation, and all exercise of the body, abstinence and sweat. Of these I shall now treat.

CHAP. X.

OF BLEEDING.

To let blood by the incision of a vein is not new: but to practise this in almost every distemper is new. Again, to bleed younger people, and women, that are not pregnant, is of ancient use. But to attempt the same in children and old people, and in pregnant women, is not an old practice. For indeed the ancients judged, that the first and last stages of life were not able to bear this kind of remedy; and they were persuaded, that a pregnant woman, who had been thus treated, would miscarry. But afterwards experience proved, that none of these rules were universal, and that some other circumstances were rather to be regarded, by which the intention of the physician was to be directed. For the material point is not, what the age may be, or what is contained within the body, but what degree of strength there is. Upon this account if a young man is valetudinary, or a woman not with child be weak, bleeding is bad: for the remaining strength, is by this evacuation destroyed. Whereas to a stout boy, and a robust old man, and a strong pregnant woman, it may be used with safety. 'Tis true an unskilful physician may be greatly deceived in such patients: because there is commonly less strength at these times of life. And a pregnant woman stands in need of strength after her cure, to support not only herself, but her fœtus also. But whatever requires either attention of mind, or prudence, is not to be immediately rejected: since the

excellency of the art here consists, not in numbering the years, nor in regarding conception alone, but in considering the strength, and collecting from thence, whether there will be left sufficient to support either a boy, or an old man, or two bodies at once in one woman. There is a difference also between bodies strong, and corpulent: and those, that are slender, and infirm. In the slender, blood more abounds, but in those of a fuller habit, flesh. Wherefore the first bear this evacuation more easily: and he, that is over fat, is soonest distressed by it. For this reason the strength of the body is to be estimated rather by the state of the vessels, than from its appearance.

Nor are these the only particulars to be considered, but also what kind of distemper it is: whether a redundancy, or deficiency of matter has been hurtful; whether the body be corrupted or sound. For if there be a deficiency, or the humours be sound, this method is prejudicial. But if either the quantity of matter is hurtful, or it is corrupted, no other remedy is more successful; for this reason a violent fever, when the skin is red, and the veins are full and turgid, requires bleeding: likewise diseases of the bowels, and palsies, and the tetanus, and convulsions; in fine, whatever strangulates the fauces, so as to cause a difficulty in breathing; whatever suddenly stops the speech; any pain, that is intolerable; and any internal rupture, or bruise, from whatever cause; also a bad habit of body; and all acute distempers; provided, as I observed above, they hurt not by weakness, but by redundancy.

But it may possibly happen, that a distemper may indeed require this method, and at the same time the

body may seem hardly able to bear it: but yet if there appears no other remedy, and the patient must perish, unless he shall be relieved even by a rash attempt; in this case, it is the part of a good physician to shew, that there is no hope without bleeding; and to confess what bad consequences may be apprehended even from that remedy; and after that, to bleed if desired. It is by no means proper to hesitate about it in such a situation as this: for it is better to try a doubtful remedy, than none at all. And this ought especially to be practised, when there is a palsy; when one has lost his speech suddenly; when an angina suffocates; when the preceding paroxysm of a fever has almost killed a person, and another equally severe is likely to follow, and the strength of the patient seems unable to bear it.

Though bleeding ought not to be performed in a state of crudity, yet even that does not hold always. For the circumstances will not at all times wait for concoction. So that if any person has fallen front a height, or has received a contusion, or vomits blood from some sudden accident, although he has taken food a little before, yet that evacuation is proper, lest if the matter settle, it distress the body. The same rule will hold in other sudden cases too, where there is a danger of suffocation. But if the nature of the distemper will allow a delay, it must not be done, till all remaining suspicion of crudity is removed. Upon this account, the second or third day of an illness seems most proper for this operation. But as sometimes it is necessary to bleed even on the first day, so it is never good after the fourth, when by time alone, the matter is either dissipated, or has

corrupted the body; so that the evacuation may weaken, but cannot make it sound. But when a vehement fever prevails, to bleed in the time of its violence is killing the patient. Therefore an intermission(17) is to be awaited for: if it does not intermit, when it has ceased to increase: if there be no hopes even of a remission, in that case the only opportunity offered, though less favourable, is not to be neglected.

Further this remedy, where it is necessary, generally were best to be divided into two days; for it is better at the first to lighten the patient, and after that to cleanse him thoroughly, than to run any risk of his life by dissipating all his strength at once. And if this method be found to answer in the cure of a dropsy, how much more must it of necessity answer with regard to the blood?

If the disorder be in the whole body, the evacuation ought to be made from the arm: if in any particular place, from the part affected, or at least as near to it as may be; because it cannot be performed every where, but only in the temples, and in the arms, and near the ancles. I am not ignorant, that it is the opinion of some, that blood should be let at the greatest distance from the part where it does harm; for that thus the course of the matter is diverted; but in the other way it is drawn into that very place, which is distressed. But this is altogether false. For it first empties the part nearest: and the blood flows from the more remote, as long as the evacuation is continued: when this is stopt, because there is no more attraction, it then ceases to come. Yet experience itself seems to have shewn, that in a

fracture of the skull blood is to be let rather from the arm: and if the disorder is in one arm, it must be performed in the other: I suppose for this reason, because if any miscarriage should happen, those parts, which are already hurt(18), are more exposed to injuries. Sometimes also an hæmorrhage breaking out in one part, is stopt by bleeding in another. For it ceases to flow, where we would not have it, when we apply what will stop its course there, and open another passage for it.

Altho' bleeding is very easy to one, who has experience; yet it is very difficult to one, that is ignorant. For the vein lies close to the arteries; and to these the nerves. So that if the lancet has touched a nerve, a convulsion will follow, which destroys a man miserably. And then a wounded artery neither unites again, nor heals; and sometimes it occasions a violent hæmorrhage. If also the vein itself happens to be cut quite through, the two ends are compressed, and discharge no blood. Again, if the lancet is entered with fear, it lacerates the surface of the skin, and does not open the vein. Sometimes too the vein lies concealed, and is not easily found. Thus many circumstances make that difficult to an ignorant person, which is very easy to the skilful.

The vein is to be cut at the middle. And when the blood flows from it, its colour and consistence ought to be observed. For if it be thick and black, it is bad; and therefore the discharge is useful: if red and pellucid, it is sound; and that evacuation is so far from being beneficial, that it may even hurt, and is immediately to be stopt. But such an accident cannot happen to the physician, who knows in what case

bleeding is to be used. It more commonly happens, that it flows on the first day equally black thro' the operation. And altho' it be so, yet if the discharge is sufficient, it must be stopt: and an end must always be put to it, before the person faints.

Then the arm is to be bound up, putting upon it a penecillum(19) dipt in cold water, and squeezed; and on the following day, the vein must be rubbed with the middle finger, that its recent union may be resolved, and it may again discharge blood. Whether it happens on the first or second day, that the blood, which at first flowed thick, and black, has begun to appear red and pellucid, there is then a sufficient quantity taken away, and what remains is pure: so that the arm is to be immediately bound up, and kept so, till the cicatrice is firm; which firmness it very soon acquires in a vein.

CHAP. XI.

OF CUPPING.

There are two sorts of cucurbitals: the one of copper, the other of horn. That of copper is open at the one end, and close at the other; that of horn is likewise open at one end, and at the other has a small hole. Into the copper one burning linen is put, and its mouth is clapt close to the body, and is prest down, till it adhere to it. The horn kind is only applied to the body, and after that, when a person has sucked out the air by the small hole, and that is closed with wax, it sticks, as well as the other. Both of these are made not only of these two materials, but of any thing else. Where no better can be got, a small cup with a narrow mouth is fit enough for the purpose. When it adheres, if the skin has been cut before with a scalpel, it will bring out blood: if the skin is whole, air. Wherefore when the offence is from matter contained within, the first method is to be pursued: when it is only a flatulency, the other is commonly used.

Now the principal use of a cucurbital is, when a disorder is not in the whole body, but only in a part, the emptying of which is sufficient to render it sound. And this very thing is a proof, that in the cure of any member, bleeding by a lancet too is to be performed rather in the part which is already hurt: because no body puts the cucurbital upon a different part, unless to divert the flux of blood thither, but on that, which is diseased, and which is to be relieved.

There may possibly be a necessity for using the cucurbital in chronic distempers (although they be already of some standing) if there be either corrupted matter, or a flatulency. Likewise in some acute distempers, if at the same time the body requires to be lightened, and the strength will not admit of bleeding from a vein. And this remedy, as it is less violent, so it is more safe; and is never dangerous, though it be made use of in the greatest violence of a fever, or even in the time of crudity. For this reason, when there is a necessity for bleeding, if the opening of a vein is very dangerous, or the disorder is fix'd in a noble part of the body, we must also have recourse to this instrument. We must be sensible however, that as it is attended with no danger, so it gives a feebler aid; and that is not possible to relieve a violent distemper, but by an equally violent remedy.

CHAP. XII.

OF PURGING.

In almost every distemper the ancients endeavoured to purge by various medicines and frequent clysters: and they gave either black hellebore, or polypody of the oak, or scales of copper(20), or the milk of sea-spurge(21), a drop of which taken upon bread purges plentifully; or asses, or cow's, or goat's milk, with the addition of a little salt; and this they boiled, and taking away what had been curdled, they obliged the patient to drink what remained like whey.

But generally *purging* medicines injure the stomach. Wherefore aloes is to be mixed with all cathartics. If the purging be severe, or frequent clysters be administered, it weakens a man. For that reason it is never proper in an illness to give medicines with that view, unless there be no fever concomitant: as when black hellebore is given to those that labour under atrabilis, or a melancholy madness, or any paralytic disorder. But where there are fevers, it is better to take such food and drink for that purpose, as may at once both nourish, and prove laxative. And there are some kinds of disorders, with which purging by milk agrees.

Of clysters.

But for the most part the belly is to be opened by clysters. Which method, somewhat censured, though

not entirely laid aside by Asclepiades, I observe to be generally neglected in our own age. That moderation, which he seems to have followed, is most proper, that neither this remedy should be often tried, nor be entirely omitted, but used once, or at most twice, if the head is heavy, or the eyes dim; if there is a disorder of the large intestine, which the Greeks call colon; if there are pains of the lower belly, or in the hips; if any thing bilious be accumulated in the stomach, or even any flux of phlegm or a humour like water thither; if the breathing is difficult; if there is no natural discharge from the belly; especially if the excrements are near the anus, and still remain within; or if the patient, while he has no passage, nevertheless perceives the smell of excrements in his breath; or if the stools appear corrupted; or if an early abstinence has not removed a fever; or when a case may require bleeding, and the strength will not allow of it, and the time for that operation is past; or if one has drank much before an illness; or if a person, who was frequently loose, either naturally or by some accident, is suddenly bound in the belly. But the following rules are to be observed, that it be not used before the third day; nor while any crudity remains; nor in a body weak and exhausted by long sickness; nor to a person, whose belly discharges sufficiently every day, or one that is loose; nor during the paroxysm of a fever; because what is injected at this time, is retained within the belly, and being thrown upon the head, greatly increases the danger. On the day before, the patient ought to fast, that he may be prepared for this remedy. On the day of the

operation to drink, some hours before, hot water, that his superior parts may be moistened; then the injection is to be performed with pure water, if we be content with a gentle medicine; if somewhat more powerful is required, hydromel(22); if a lenient, a decoction of fœnugreek, or ptisan(23), or mallows, in water: if it be intended to restringe, a decoction of vervains(24). Sea-water, or any other water with the addition of salt, is acrid: but both of these are better boiled. A greater degree of acrimony is given by adding either oil, or nitre, or honey also. The more acrid it is, it evacuates the more; but it is not so easy to bear. The injection ought neither to be cold, nor hot; lest it hurt either way. When it is injected, the patient ought to confine himself as much as possible in bed, and not yield immediately to the first stimulus he finds to go to stool; and not till necessity obliges him. And commonly this evacuation by lightning the superior parts mitigates the distemper itself. When a person has fatigued himself by going to stool, as often as he was obliged, he ought to take rest for a little time; and lest he grow faint, even on the same day to take food. The quantity of which ought to be determined by considering the nature of the paroxysm that is expected; or whether there is no danger of any.

CHAP. XIII.

OF VOMITING.

As a vomit even in health is often necessary to persons of a bilious habit; it is likewise so in those distempers, which are occasioned by bile. Upon this account it is necessary to those, that before fevers are distressed with horrors and tremors; to all those, that labour under a cholera; and all, that are attacked with madness, and a concomitant mirth; and those also, who are oppressed with an epilepsy. But if the distemper be acute, as the cholera; if it be a fever, while there are tetani, the rougher medicines are improper, as has been observed above in the article of purging; and it is sufficient to take such a vomit, as I prescribed for people in health. But when distempers are of long standing, and stubborn, without any fever, as an epilepsy or madness, we must use even white hellebore. Which it is not proper to administer in the winter, or summer; it is best in the spring: in the autumn it does tolerably well. Whoever prescribes it, ought first to take care, that the body of his patient be moist. It is necessary to know, that every medicine of this kind, which is given by way of potion, is not always beneficial to sick people, to healthy always hurtful.

CHAP. XIV.

OF FRICTION.

Concerning friction(25), Asclepiades looking upon himself as the inventor of it, has said so much in that book, which he entitled ‘of general remedies,’ that tho’ he mentions only three things, that, and wine, and gestation, yet he has taken up the greatest part of his treatise upon the first. Now as it is not fit to defraud the moderns of the merit either of their new discoveries or judicious imitations, *so it is but just* at the same time to assign those things, which were practised among some of the ancients, to their true authors. It cannot indeed be doubted, that Asclepiades has been both fuller and clearer in his directions, when and how friction ought to be used; but he has discovered nothing, which was not comprized in a few words by the most ancient author Hippocrates; who said, that friction, if violent, hardens the body; if gentle, softens it; if plentiful, extenuates; if moderate, increases its bulk: from whence it follows, that it is to be made use of, when a lax body requires to be braced; or to soften one, that is indurated; or to dissipate where the fulness is hurtful; or to nourish that, which is slender and infirm.

Nevertheless, if a person examine more curiously into these different species (which is not here the province of a physician) he will easily understand that the effects of them all proceed from one cause; that is, the carrying off of something. For a part will

be bound, when that thing is taken away, the intervention of which had caused it to be lax; and another is softened by removing that, which occasioned the hardness; and the body is filled, not by the friction itself, but by that food, which afterwards makes its way to the skin, relaxed by a kind of digestion(26). And the degree of it is the cause of these effects so widely different.

But there is a great deal of difference betwixt unction, and friction. For it is necessary for the body to be anointed, and gently rubbed even in acute and recent distempers; but this must be done in the time of their remission, and before taking food. But to make use of long friction is not proper, either in acute or increasing disorders; except when the intention of it is to procure sleep in phrenitic patients. This remedy is very agreeable to inveterate distempers, and where they have abated somewhat of their first violence. I am not ignorant that some maintain, that every remedy is necessary for distempers, while they are increasing, not when they are going off spontaneously. But this is not just; for a distemper, though it would come to a period of itself, may notwithstanding be sooner terminated by the application of remedies. The use of which is necessary upon a double account, both that the health may be restored as soon as possible; and that the disorder, which remains, be not irritated again by any slight cause: for a distemper may be less violent, than it has been, and yet not entirely removed; but there may be some remains of it, which the use of remedies may dissipate.

But though friction may be used in the decline of an

illness, yet it is never to be practised in the increase of a fever; but if possible, when the body is entirely free of it; if that can't be done, at least when there is a remission. It ought also to be performed sometimes over the whole body, as when we would have an infirm person take on flesh; sometimes in particular parts, either because the weakness of that part itself, or of some other, requires it. For both inveterate pains of the head are mitigated by the friction of it (yet not during their violence) and any paralytic limb is strengthened by rubbing it: but much more commonly, when one part is pained, a different one is to be rubbed; and particularly, when we want to make a derivation from the upper or middle parts of the body; and with this intention we rub the extremities. And these people are not to be regarded, who prescribe to a certain number, how often a person is to be rubbed: for that is to be estimated from his strength. Thus if one is very weak, fifty times may be sufficient: if of a more robust habit, it may be done two hundred times. And then *in different proportions* betwixt these two according to the strength. Whence it also happens, that the motion of the hands in friction must be less frequent in a woman than a man; less frequent in a boy or an old man, than a young man. Lastly, if particular parts are rubbed, they require much and strong friction. For the whole body cannot be quickly weakened by a part, and there is a necessity for dissipating as much of the matter as we can, whether the intention be to relieve the part we brush, or another by means of it. But where a weakness of the whole body requires this treatment all over, it ought to be shorter and

more mild; so as only to soften the surface of the skin, to render it more apt to receive new matter from fresh nourishment. A patient is known to be in a bad situation, when the surface of his body is cold, and the internal part is hot with a concomitant thirst, as I observed above. But even in this case friction is the only remedy, which, if it have brought out the heat, may make way for the use of some medicine.

CHAP. XV.

OF GESTATION.

Gestation is most proper for chronic distempers, and those that are already upon the decline. And it is useful both to those, who are quite free of a fever, but yet are not able to exercise themselves; and those, that have the slow relicks of distempers, which are not otherwise expelled. Asclepiades said, that gestation was to be used even in a recent and violent, and especially an ardent fever, in order to discuss it. But that is dangerous; and the violence of such a distemper is sustained better by remaining quiet. Yet if any person will make trial of it, he may do it under these circumstances, if his tongue is not rough, if there be no tumour, no hardness, no pain in his bowels, nor head, nor præcordia. And gestation ought never to be used at all in a body that is pained, whether in the whole, or in any part, unless the pain be in the nerves alone; and never in the increase of a fever, but upon its remission.

There are many kinds of gestation: in the use of which the strength and circumstances of the patient are to be considered; that they may neither dissipate too much a weak man, nor be out of the reach of one of small fortune. The most mild kind of gestation is in a ship, either in a port, or a river; or in a litter, or a chair; more brisk in a chariot; more violent in a ship on the ocean. And each of them may be rendered both more sharp, and more mild. If none of them can be done, the bed must be suspended and

moved to and fro. If even that can't be accomplished, at least a prop is to be put under one foot(27) of the bed, and thus the bed moved back and forward by the hand. And indeed the mild kinds of exercise agree with the weakest; the stronger with those, who have been for several days free from the fever; or those, who feel the beginnings of severe distempers, but are yet without a fever (which is the case in a consumption, and indispositions of the stomach, and a dropsical disorder, and sometimes in a jaundice) or when some distempers, such as an epilepsy or madness, continue, though for a considerable time, without any concomitant fever. In which disorders, these kinds of exercises also are necessary, which were mentioned in that place, where we prescribed rules for the conduct of sound, but weakly men.

CHAP. XVI.

OF ABSTINENCE.

There are two kinds of abstinence. One, when the patient takes no food at all: the other, when he takes only what is proper. The beginnings of diseases call for fasting and thirst: after that in the distempers themselves moderation is required, so that nothing but what is proper be taken, and not too much of that; for it is not fit after fasting, to enter immediately upon a full diet. And if this be hurtful even to sound bodies, that have been under the necessity of wanting food for some time, how much more is it so to a weak, not to say a diseased one? And there is nothing which more relieves an indisposed person, than a seasonable abstinence. Intemperate men amongst us chuse for themselves the seasons of eating, and leave the quantity of their food to the physicians. Others again compliment the physicians with the times, but reserve the quantity to their own determination. Those fancy themselves to behave very genteelly, who leave every thing else to the judgment of the physicians, but insist upon the liberty of chusing the kind of their food; as if the question was, what the physician has a right to do, not what may be salutary to the patient; who is greatly hurt as often as he transgresses either in the time, measure, or quality of his food.

CHAP. XVII.

OF SWEATING.

A sweat is procured in two ways; either by a dry heat, or a bath. A dry heat is raised by hot sand, the laconicum, and clibanum(28), and some natural sweating places, where a hot vapour exhaling out of the earth is inclosed by a building, as there is at Baiæ amongst the myrtle groves. Besides these, it is solicited by the sun and exercise. These kinds are useful, wherever an internal humour offends, and is to be dissipated. Also some diseases of the nerves are best cured by this method. And the others may be proper for weak people: the heat of the sun and exercise agree only with the more robust; when they are falling into a disorder, or even during the time of distempers not violent, provided they be free of a fever. But care must be taken, that none of these be attempted either in a fever(29), or in the time of crudity.

But the use of the bath is twofold. For sometimes after the removal of fevers, it is a proper introduction to a fuller diet and stronger wine for the recovery of health: sometimes it removes the fever itself. And it is generally used, when it is expedient to relax the surface of the skin, and solicit the evacuation of the corrupted humour, and to change the habit of the body. The ancients used it with greater caution: Asclepiades more boldly. And there is no reason to be afraid of it, if it be seasonable: before the proper time, it does harm. Whoever has been freed of a

fever, as soon as he has escaped the fit for one day, on the day following, after the usual time of its coming on, may safely bathe. And if the fever used to be periodical, so as to return upon the third or fourth day, whenever it has missed, the bath is safe. And even during the continuance of fevers, if they be of the slow kind, and the patients have splenetic disorders of long standing, it is proper to make trial of this remedy: on this condition however, that the præcordia be not hard nor swelled, nor the tongue rough, and there be no pain either in the trunk of the body or in the head, and the fever be not then increasing. And in these fevers indeed, which have a certain period, there are two opportunities for bathing; the one, before the shuddering; the other, after the fit is ended. In those again, who are long distressed with slow febriculas, either when the fit is entirely off; or if that does not happen, at least when it has remitted, and the body is as sound, as it generally is in that kind of illness.

A valetudinary man, that is going into the bath, ought to be careful not to expose himself to any cold before. When he has come to the bagnio, he is to stand still a little, and try whether his temples are bound, and if any sweat breaks out: if the first has happened, and the other not followed, the bath will be improper that day: he must be anointed slightly, and carried back, and by all means avoid cold, and be abstemious. But if his temples are not affected, and a sweat begins, first there, and then elsewhere, he must wash his mouth with plenty of warm water, then go into the bath; and there he must observe, whether at the first touch of the warm water he feels

a shuddering upon the surface of his skin; which can scarcely happen, if the circumstances above-mentioned were as they should be: however, this is a certain sign of the bath's being hurtful.

One from the state of his health may know, before he go into the warm water, whether it be proper to anoint himself after it. However for the most part (except in cases where it shall be expressly ordered to be done after) upon the beginning of a sweat the body is to be anointed gently, and then to be dipped in the warm water. And in this case also regard must be had to his strength; and he must not be allowed to faint by the heat, but must be speedily removed, and carefully wrapped up in cloaths, lest any cold get to him; and there also he must sweat, before he take any food.

Warm fomentations are millet-seed, salt, sand: any of these heated, and put into a linen cloth: even linen alone, if there be less heat required; but if greater, extinguished coals, wrapt up in cloths, and applied round a person. Moreover bottles(30) are filled with hot oil: and water is poured into earthen vessels, which from their resemblance in shape are called lenticulæ(31): and salt is put into a linen bag, and dipt into water well heated, then set upon the limb that is to be fomented. And at the fire are placed two ignited pieces of iron, with pretty broad heads: one of these is put into dry salt, and water is sprinkled lightly upon it; when it begins to grow cold, it is carried back to the fire: the other is made use of in the same manner; so each of them alternately: and in the mean time, the hot and salt liquor drops down through the cloth, which relieves the nerves

contracted by any disease. All of them have this property in common of dissipating that, which either loads the præcordia, or suffocates the fauces, or is hurtful in any limb. When each of these sorts of fomentations is to be used, shall be directed under the particular kinds of distempers.

CHAP. XVIII.

OF THE DIFFERENT KINDS OF FOOD AND DRINK.

Since we have treated of those things, which relieve by evacuation, we must now proceed to those, which nourish us, that is, our food and drink. Now these are not only the common supports in all distempers, but even of health too. And it is of importance to be acquainted with the properties of them all: first, that the healthy may know, in what manner they are to make use of them: secondly, that in treating of the method of curing diseases, it may suffice to mention in general the species of what is to be taken, without being under the necessity of naming each particular upon every occasion.

It is fit to know then, that all leguminous vegetables, and those grains, which are made into bread, are of the strongest kind of food (I call that the strongest, in which there is the most nourishment) also every quadruped, that is tame, all large wild beasts, such as the wild goat, deer, wild boar, wild ass; every great bird, such as the goose, peacock, and crane; all large fishes, the cetus(32), and others of a like size; also honey, and cheese. So that it is no wonder that particular kind of bread(33) should be very strong, which is made of corn, fat, honey, and cheese. Of a middle nature ought to be reckoned those pot-herbs, whose roots or bulbusses we use for food; amongst quadrupeds the hare; all birds, from the least upwards to the phœnicopter(34); also all fish, that will not bear salt, or such, as are salted whole. Of the

weakest kind are all potherbs, and whatever grows on a stalk, such as the gourd, and cucumber, and caper, and all the apple kind, olives, snails(35), and also conchylia(36).

But although these are thus distinguished, yet there are great differences between things even of the same class; and one is either more substantial, or weaker than another. For instance, there is more nourishment in bread, than in any thing else. Wheat is more firm than millet: and that again than barley: and the strongest kind of wheat is the siligo(37); after that the finest flour; next, that which has nothing taken from it, which the Greeks call autopyron[AX]: still weaker than these is the second flour: the weakest is grey bread. Amongst the leguminous vegetables the bean or lentil is more substantial than pease. Amongst the potherbs, turnep and navew gentle, and all the bulbous kind (in which I rank the onion also, and garlick) are more substantial than the parsnip, or that which is particularly called radicula (garden radish.) Also cabbage, and betes, and leeks, are stronger than lettuce, or gourd, or asparagus. But amongst the fruits of the surculous tribe, grapes, figs, nuts, dates, apples properly so called, are of the firmer kind. And amongst these the juicy are stronger than the mealy(38) fruits. Also of these birds, which are of the middle kind, those are stronger, which make more use of their feet, than their wings: and of those, that trust more to flying, the larger birds are stronger than the small ones, as the beccaficos, and thrush(39). And those also, which live in the water, afford a lighter food than those, which cannot swim. Amongst the tame animals pork is lightest; beef

heaviest. Also of the wild, the larger any animal is, so much the stronger food it is. And of those fishes also, which are of the middle kind, the heaviest, though we make most use of them, are first all those, that are made salsamenta(40), such as the lacertus(41); next such, as though more tender than the other, yet are in themselves hard, as the aurata, corvus, sparus, oculata; in the next rank are the plani fish, after which lighter still are lupi and mulli: and then all rock fish.

And there is not only a difference in the classes of things, but also in the things themselves; which arises from their age, the different parts of their body, the soil, air, and the case they are in. For every four footed animal(42), that is sucking, affords less nourishment; also a dunghill fowl, the younger it is. In fish too, the middle age, before they have reached their greatest bulk. *For the parts*, the heels, cheeks, ears, and brain of a hog; of a lamb or kid, the whole head with the petty toes, are a good deal lighter than the other parts; so that they may be ranked in the middle class. In birds, the necks or wings are properly numbered with the weakest. As to the soil, the corn, that grows upon hilly parts, is stronger than what grows upon a plain. Fish got in the midst of rocks, is lighter than those in the sand; those in the sand, than those in the mud. Whence it happens, that the same kinds either from a pond, or lake, or river, are heavier: and that, which lives in the deep, is lighter than one in shoal water. Every wild animal also is lighter than a tame one: and whatever is produced in a moist air, than another in a dry. In the next place, all the same foods afford more

nourishment, fat than lean; fresh more than salt; new than stale. Again, the same thing nourishes more, when it is stewed into broth, than roasted, more roasted than fried. A hard egg is of the strongest kind; soft, or sorbile(43) of the weakest. And though all grains, made into bread, are most firm, yet some kinds washed, as alica(44), rice, ptisan, or gruel made of the same, or pulse(45), and bread moistened with water, may be reckoned with the weakest.

With regard to drinks, whatever is prepared from grain, also milk, mulse, defrutum, passum(46), wine either sweet or strong, or must, or very old wine, are of the strongest kind. But vinegar, and wine a few years old, or austere, or oily, is of the middle kind. And therefore none of these should be given to weak people. Water is weakest of all. And the drink, that is made of grain, is stronger in proportion to the hardness of the grain itself: and that wine, which is produced in a good soil, more so than in a poor soil; or in a temperate air, than one, which is either over moist or too dry, and either over cold or too hot. Mulse, the more honey it contains, defrutum, the more it is evaporated in boiling, and passum, the drier the grape is from which it is prepared, are so much the stronger. Rain water is lightest; next spring water, then river water, then that of a well; after these snow, or ice; water of lakes is heavier than these; and that of fens heaviest of all. The trial is both easy and necessary to those, that want to know its nature. For the lightness appears from weighing it; and amongst those, that are of equal weight, the sooner any of them grows hot or cold, and the more quickly herbs are boiled in it, the better it is.

It is a general rule, that the stronger each kind is, so much the less easily it is concocted; but when once concocted, it nourishes more. Wherefore the nature of the food must be determined by the degree of one's strength; and the quantity proportioned to the kind. Upon this account weak men must make use of the weakest things; a middle kind best supports those, that are moderately strong; and the most substantial is fittest for the robust. Lastly, A person may take a greater quantity of what is lighter: but in what is most substantial, he ought to moderate his appetite.

CHAP. XIX.

GENERAL PROPERTIES OF DIFFERENT FOODS.

And these above-mentioned are not the only distinctions; but some things afford good juices, others bad, which two kinds the Greeks term euchyma and cacochyma[AY]; some are mild, others acrid; some generate in us a thicker phlegm, others a more fluid; some agree with the stomach, others not; likewise some produce flatulencies, others have not that property; some heat, others cool; some readily turn sour in the stomach, others are not easily corrupted there; some open the belly, others bind it; some promote urine, others retard it; some are soporiferous, others excite the senses. Now all these must be known for this reason, that different things are proper in different constitutions or states of health.

CHAP. XX.

OF THINGS CONTAINING GOOD JUICES.

Good juices are afforded by wheat, siligo, alica, rice, starch(47), tragum(48), milk, soft cheese, all venison, all birds of the middle class; of the larger kind also, those that we mentioned above; the middle kind betwixt tender and hard fishes, as the mullus, and lupus; pot-herbs, lettuce, nettle, mallows, cucumber, gourd, purslane, snails, dates; any of the apple kind, that are neither bitter, nor acid; wine sweet or mild, passum, defrutum, olives, or any of this fruit preserved in either of the two last mentioned liquors; the wombs(49), cheeks, and legs of hogs, all fat flesh, and glutinous, all livers, and a sorbile egg.

CHAP. XXI.

OF FOODS CONTAINING BAD JUICES.

Of bad juices are millet, panick, barley, leguminous vegetables, the flesh of tame animals very lean, and all salt meat, all salt fish and garum(50), old cheese, skirret, radish, turneps, navew gentle, bulbusses(51), cabbage, and more especially its sprouts, asparagus, betes, cucumber, leek, rocket, cresses, thyme, catmint, savory, hyssop, rue, dill, fennel, cumin, anise, dock, mustard, garlick, onion, spleens, kidneys, intestines, every kind of apple, that is acid or bitter, vinegar, every thing, that is acrid, acid, or bitter, oil, also rock-fish, and those, that are of the tenderest kind, or those again, which are either too hard and strong tasted, as those found in ponds, lakes, or muddy rivers generally are, or those, that have grown to an excessive bulk.

CHAP. XXII.

OF MILD AND ACRID THINGS.

The following are mild; gruel, pulse, pancake(52), starch, ptisan, fat flesh, and all glutinous flesh, such as we have in all tame animals, but especially in the heels, and legs of swine, the petty-toes, and heads of kids, calves, and lambs, and the brains of them all. Also milk, and what are properly called sweets, defrutum, passum, pine-nuts.

Things acrid are, whatever is too austere, all acids, all salt provisions; and even honey, which is the more so, the better it is: likewise garlick, onion, rocket, rue, cresses, cucumber, bete, cabbage, asparagus, mustard, radish, endive, basil, lettuce, and the greatest part of pot-herbs.

CHAP. XXIII.

OF THOSE THINGS WHICH GENERATE A THICK AND A FLUID PHLEGM.

A thick phlegm is generated by sorbile eggs, alica, rice, starch, ptisan, milk, bulbous roots, and almost every thing that is glutinous.

The contrary effect is produced by all salted, and acrid, and acid substances.

CHAP. XXIV.

OF WHAT AGREES WITH THE STOMACH.

Whatever is austere or acid, or whatever is moderately sprinkled with salt, is agreeable to the stomach: also un-leavened bread, and washed alica, or rice, or ptisan; and all birds, and all venison; and both of these either roasted or boiled: amongst the tame animals, beef; if any of the rest is made use of, rather lean than fat; in a swine the heels, cheeks, ears, and barren wombs; amongst pot-herbs endive, lettuce, parsnip, boiled gourd, skirret; of the apple kind, the cherry, mulberry, service fruit, mealy pears, such as are either those called crustumina(53) or næviana, also those called tarentina, or signina; the round apples, or scandiana, or amerina, or quinces, or pomegranates, wormwood(54), jar raisins, soft eggs, dates, pine-nuts, white olives preserved in strong brine or tinctured with vinegar, or the black kind, which have grown thoroughly ripe upon the tree, or been kept in passum or defrutum; austere wine, although it be grown rough, also resinated(55); hard fish of the middle class, oysters, pectines(56), murex and purpura(57), periwinkles; food and drink either cold or hot.

CHAP. XXV.

OF THINGS HURTFUL TO THE STOMACH.

The stomach is offended by every thing tepid, all salt provisions, all meat stewed into broth, every thing too sweet, all fat substances, gruel, leavened bread, and the same made either from millet or barley, oil, roots of pot-herbs, and whatever greens are eaten with oil or garum, honey, mulse, defrutum, passum, milk, all cheese, fresh grapes, figs both green and dry, all leguminous vegetables, and things, that usually prove flatulent; also thyme, catmint, savory, hyssop, cresses, dock, nipplewort, and walnuts. From this account it may be inferred, that it is no rule that what affords a good juice, agrees with the stomach; nor that what agrees with the stomach, is for that reason of good juice.

CHAP. XXVI.

OF THOSE THINGS, WHICH OCCASION FLATULENCIES, AND THE CONTRARY.

Flatulencies are generated by almost all the leguminous vegetables, every thing fat, or over sweet, all stewed meat; must, and even any wine, that has not got age: amongst pot-herbs, garlick, onion, cabbage, and all roots (except skirret and parsnip) bulbusses, dry figs too, but more especially the green, fresh grapes, all nuts, except pine-nuts, milk, and all cheese, and lastly, whatever is too crude.

Little or no flatulency is occasioned by venison, wild fowl, fish, apples, olives, conchylia, eggs either soft or sorbile, old wine. But fennel and dill even relieve flatulencies.

CHAP. XXVII.

OF THOSE THINGS WHICH HEAT AND COOL.

Heat is excited by pepper, salt, all flesh stewed into soup, garlick, onion, dry figs, salt fish, wine which is the more heating, the stronger it is.

Those greens are cooling, whose stalks are eaten without boiling, as endive, and lettuce: likewise coriander, cucumber, boiled gourd, bete, mulberries, cherries, austere apples, mealy pears, boiled flesh, and especially vinegar mixed either with meat or drink.

CHAP. XXVIII.

OF WHAT IS EASILY CORRUPTED IN THE STOMACH, AND THE CONTRARY.

The following kinds easily corrupt in the stomach, leavened bread, and such as is made of any other grain than wheat, and all kinds of the sweet bread mentioned before(58), milk, honey, also sucking animals, and tender fish, oysters, greens, cheese both new and old, coarse or tender flesh, sweet wine, mulse, defrutum passum; lastly, whatever is either juicy, or too sweet, or over thin.

But unleavened bread, birds, especially the harder, hard fish, and not only the aurata for instance, or scarus(59), but even the lolligo, locusta, polypus, do not easily corrupt; also beef and all hard flesh: the same is preferable if it be lean, and salted; and all salt fish; periwinkles, the murex and purpura, austere wine, or resinated.

CHAP. XXIX.

OF WHAT OPENS THE BELLY.

The belly is opened by leavened bread, and the more so if it be coarse, or made of barley; cabbage if it be not well boiled, lettuce, dill, cresses, basil, nettle, purslane, radishes, capers, garlick, onion, mallows, dock, bete, asparagus, gourd, cherries, mulberries, all mild apples, figs even dry, but more especially green, fresh grapes, fat small birds, periwinkles, salt fish and garum, oysters, pelorides(60), sea-urchins, muscles, and almost all shell fish, and chiefly the liquor of them, rock fish, and all tender fish, blood of the cuttle fish; and any fat meat, and the same stewed, or boiled; birds that swim; crude honey, milk, all sucking animals, mulse, sweet or salt wine, soft water(61), every thing tepid, sweet, fat, boiled, stewed, salt, or diluted.

CHAP. XXX.

OF WHAT BINDS THE BELLY.

On the contrary the belly is bound by bread made of the siligo, or flour of wheat; especially if it be unleavened; and more so if it be also toasted: and this virtue is even increased, if it be twice baked: pulse made either from alica, or panick, or millet; also gruel prepared from the same; and more so, if these have been toasted first. Lentils with the addition of betes, or endive, or cichory, or plantain, and more so, if these have been toasted before: endive also by itself or cichory toasted, with plantain; small greens, cabbage twice boiled; hard eggs, and more so if roasted; small birds, black bird, ring-dove, especially boiled in vinegar and water, crane and all birds that run, more than they fly; hare, wild goat; the liver of those animals, that have suet, especially that of beef, and the suet itself; cheese, which is grown strong by age, or by that change, which we observe in the foreign kind; or if it be new, boiled with honey or mulse; also boiled honey, unripe pears, fruit of the service-tree, more especially those that they call torminalia(62), quinces and pomegranates, olives either white or early ripe, myrtle-berries, dates, the purpura and murex, wine either resinated or rough, and wine undiluted, vinegar, mulse, that has been boiled, also rough defrutum, passum, water either tepid or very cold, and hard, that is, such as keeps long without stinking, therefore particularly rain water, every

thing hard, lean, austere, rough, and scorched, and the same flesh rather roasted, than boiled.

CHAP. XXXI.

OF DIURETIC MEATS AND DRINKS.

The urine is promoted by whatever grows in the garden of a good smell, as smallage, rue, dill, basil, mint, hyssop, anise, coriander, cresses, rocket, fennel. Besides these, asparagus, caper, catmint, thyme, savory, nipplewort, parsnip, especially the wild kind, radish, skirret, onion; of venison principally the hare; small wine, pepper both round and long, mustard, wormwood, pine-nuts.

CHAP. XXXII.

OF SOPORIFEROUS AND EXCITING THINGS.

Sleep is procured by the poppy, lettuce, especially the summer kind, when its stalk is replete with milk, mulberries, and leeks.

The senses are excited by catmint, thyme, savory, hyssop, particularly pennyroyal, rue and onion.

CHAP. XXXIII.

OF THOSE THINGS, WHICH DRAW, REPEL, OR COOL, OR HEAT, OR HARDEN, OR SOFTEN.

Many things are powerful in drawing out matter: but as these consist principally of foreign medicines, and not so much adapted to the cases of those who are to be relieved by diet, I shall postpone the mention of them for the present: and shall only name those things, which are commonly at hand, and are fit for corroding, and thus extracting whatever is hurtful in those distempers, concerning which I am presently to treat. This virtue resides in the seeds of rocket, cresses, radish; but most of all mustard. The same power is also found in salt, and figs.

Sordid wool(63) dipt either in vinegar, or wine, with an addition of oil; bruised dates, bran boiled in salt water or vinegar, are all at the same time both restringent and emollient.

But the following things both restringe and cool, the wall herb (which they call parthenium or perdicium, *feverfew*) serpyllum, pennyroyal, basil, the blood herb (which the Greeks call polygonon[AZ],) purslane, poppy-leaves, and clippings of vines, coriander-leaves, henbane, moss, skirret, smallage, nightshade (which the Greeks call struchnos)[BA], cabbage-leaves, endive, plantain, fenel-seed, mashed pears or apples, chiefly quinces, lentils; cold water, especially rain water, wine, vinegar; and bread, or meal, or sponge, or pieces of cloth, or sordid wool, or

even linen, moistened in any of these liquors; Cimolian chalk(64), tarras(65), oil of quinces(66), or myrtles(67), or of roses(68), bitter oil(69), leaves of vervains bruised with their tender stalks; of this kind are olive, cypress, myrtle, mastich-tree, tamarisk, privet, rose, bramble, laurel, ivy, pomegranate.

Boiled quinces, pomegranate bark, a hot decoction of vervains, which I mentioned before, powder from the lees of wine, or myrtle-leaves, bitter almonds, all restringe without cooling.

A cataplasm made from any meal is heating, whether it be of wheat, or of far(70), or barley, or bitter vetch, or darnel, or millet, or panick, or lentil, or beans, or lupines, or lint, or fenugreek; the meal after being boiled is laid on hot. But every kind of meal boiled in mulse is more effectual for this purpose, than the same prepared with water. Besides these, Cyprine oil(71), or iris(72), marrow, fat of a cat, mixed with oil, especially if it be old, salt, nitre(73), git, pepper, cinquefoil.

And *we may observe* in general, that those things, which both restringe violently and cool, are hardening: and those which heat and dissipate, are softening: but the most powerful cataplasm for softening is made from the seeds of lint or fenugreek.

Now physicians make use of all these things variously, both by themselves, and mixed; so that we rather see what each of them was strongly persuaded of, than what upon certain trial he found to be useful.

A. CORNELIUS CELSUS

OF

MEDICINE.

BOOK III.

CHAP. I.

GENERAL DIVISION OF DISTEMPERS.

Having already considered all that relates to distempers in general, I come to treat of the cure of each distinctly. Now the Greeks divided them into two kinds, the one they called acute, the other chronic. And because their process was not always the same, for this reason some ranged the same distempers among the acute, which others reckoned in the number of the chronic. From whence it is plain, that there are more kinds of them. For some are short and acute, which either carry off a person quickly, or are themselves soon terminated. Others are of long continuance, from which there is neither

a speedy recovery, nor speedy death. And the third kind are those, which are sometimes acute, and sometimes chronic; and this happens not only in fevers, where it is most frequent; but also in other diseases. And besides these, there is a fourth kind; which can neither be called acute, because they are not mortal; nor yet chronic, because if remedies are used, they are easily cured. When I come to treat of each, I shall point out to what kind they belong.

Now I shall divide all of them into those, that seem to affect the whole body, and those, which occur in particular parts. After a few general observations upon them all, I shall begin with the first. Though there is no distemper in which fortune can pretend to more power than art, or art than nature; since medicine can do nothing in opposition to nature: yet a physician is more excusable for want of success in acute, than in chronic disorders. For in the first, there is but a small space, within which, if the remedies do not succeed, the patient dies: in the other case, there is time both for deliberation, and a change of medicines; so that very seldom, where a physician is called at its beginning, an obedient patient is lost without his fault. Nevertheless, a chronic distemper, when it is firmly rooted, becomes equally difficult with an acute one. And indeed the older an acute distemper is, so much the more easily it is cured; but a chronic one, the more recent it is.

There is another thing we ought not to be ignorant of; that the same remedies don’t agree with all patients. Whence it happens, that the greatest authors extol some one remedy, some another, each recommending his own as the only one, according as

they had succeeded with themselves. It is fit therefore, when any thing does not answer, not to pay so much regard to the author of it, as to the patient, and to make trial of one thing after another. *Remembering* however, that in acute distempers, what does not relieve, must be quickly changed: in the chronic, which time both causes, and removes, whatever has not immediately done service, is not to be hastily condemned; much less must that be discontinued, which does but give a small relief, because its good effects are completed by time.

CHAP. II.

GENERAL DIAGNOSTICS OF ACUTE AND CHRONIC, INCREASING AND DECLINING DISEASES; THE DIFFERENCE OF REGIMEN IN EACH; AND PRECAUTIONS NECESSARY UPON THE APPREHENSION OF AN APPROACHING ILLNESS.

It is easy to know in the beginning, whether a distemper be acute, or chronic: not in those only, that are always the same; but in those also, that vary. For when the paroxysms and violent pains without intermissions distress, the disease is acute. When the pains are gentle, or the fever slow, and there are considerable intervals betwixt the fits, and those symptoms accede, which have been explained in the preceding book, it is plain, that the distemper will be of long continuance.

It is necessary also to observe, whether the distemper increases, or is at a stand, or abates: because some remedies are proper for disorders increasing, more for those, that are upon the decline. And those, which are suitable to increasing disorders, when an acute distemper is gaining ground, ought rather to be tried in the remissions. Now a distemper increases, while the pains and paroxysms grow more severe; when the paroxysms return after a shorter interval, and last longer than the preceding did. And even in chronic disorders, that have not such marks, we may know them to be increasing, if sleep is uncertain, if concoction grows worse, if the intestinal excretion is more fetid, if the senses are more heavy, the

understanding more slow, if cold or heat runs over the body, if the skin grows more pale. But the contrary symptoms to these are marks of its decrease.

Besides in acute distempers, the patient must not be allowed nourishment so soon, not till they be upon the decline; that fasting by a diminution of matter may break its violence; in chronic disorders, sooner, that he may be able to endure the continuance of the disease. But if the distemper happens not to be in the whole body, but only in a particular part, yet it is more necessary to support the strength of the whole body, than of the part; since by means of that *strength* the diseased parts may be cured. It also makes a great difference, whether a person has been properly or wrong treated from the beginning: because a method of cure is less successful, where it has been often applied unsuccessfully. If one has been injudiciously treated, but still possesses his natural strength, he is quickly restored by a proper management.

But since I began with those symptoms, which afford marks of an approaching illness, I shall commence the methods of cure from the same period. Wherefore if any of those things(1), which have been mentioned, happen, rest and abstinence are best of all: if any thing is drunk, it should be water; and sometimes it is sufficient to do that for one day; sometimes for two days, if the alarming symptoms continue; and immediately after fasting, very little food must be taken, water must be drunk; the day after, wine; then every other day by turns water and wine, till all cause of fear be removed. For by these

means often a dangerous distemper impending is averted. And a great many are deceived, while they hope upon the first day immediately to remove a langour either by exercise, or bathing, or a gentle purge, or vomiting, or sweating, or drinking wine. Not but this may sometimes happen, or answer their expectations, but that it more frequently fails; and abstinence alone may cure without any danger. Especially as that may be regulated according to the degree of one's apprehensions: and if the symptoms are slight, it is sufficient only to abstain from wine; a diminution of which assists more than lessening the quantity of food: if they are somewhat more dangerous, it may serve the turn not only to drink water (*as in the first case*), but to forbear flesh too: and sometimes to take less bread than ordinary, and confine one's self to moist food, especially greens. And it may be sufficient then only to abstain entirely from food, wine and all motion, when violent symptoms give the alarm. And without doubt scarce any body will fall into a distemper, who does not neglect it, but takes care by these means to oppose its beginning in due time.

CHAP. III.

OF THE SEVERAL KINDS OF FEVERS.

These are the rules to be observed by such as are in health, that are only apprehensive of the cause. We next proceed to the cure of fevers, which is a kind of disease, that affects the whole body, and is the most common of all. Of these one is a quotidian, another a tertian, and a third a quartan. Sometimes some fevers also return after a longer period, but that seldom occurs. With regard to the former, they are both diseases *in themselves*, and a cure *for others*.

But quartan fevers are more simple. They begin commonly with a shuddering; then a heat breaks out; after the paroxysm is over, the patient is well for two days. So that it returns upon the fourth day.

Of tertians again there are two kinds. One of them both beginning and ending like the quartan; with this difference only, that there is one day's intermission, and it returns upon the third. The other kind is much more fatal, which indeed returns upon the third day, but of forty-eight hours, thirty-six are occupied by the fit (and sometimes either less or more,) nor does it entirely cease in the remission; but is only mitigated. This kind most physicians call semitertian[BB].

But quotidians are various, and different in their appearances. For some of them begin with a heat, others with a coldness, others with a shuddering. I

call that a coldness, when the extremities of the limbs are chilled; a shuddering, when the whole body trembles. Again, some end, so as to be followed by an interval quite free from indisposition; others so, as that though the fever somewhat abates, yet some relicks remain, till another paroxysm comes on; and others often remit little or nothing, but continue as they began. Some again are attended with a very vehement heat, others more tolerable; some are equal every day, others unequal, and alternately milder one day and more severe another: some return at the same time the following day, others either later or sooner: some by the fit and the intermission take up a day and a night, some less, others more: some, when they go off, cause a sweat, others do not; and in some a sweat leaves the patient well, in others it only renders the body weaker: sometimes also one fit comes on each day, sometimes two or more. Whence it frequently happens, that every day there are several both paroxysms and remissions; yet so as that each of them answers to some preceding one. Sometimes too the fits are so irregular, that neither their durations nor intermissions can be observed. Nor is it true, which is alledged by some, that no fever is irregular, unless it arise from a vomica, or an inflammation, or an ulcer. For the cure would always be easier, if this were fact. For what is occasioned by the evident causes, may also proceed from the occult. Nor do those dispute about things, but words, who alledge, that when feverish paroxysms come on in different manners in the same distemper, these are not irregular returns of the fever, but new and different

fevers successively arising. Which however would have no relation to the method of cure, though it were true. The intervals also are sometimes pretty long, at other times scarce perceptible.

CHAP. IV.

OF THE DIFFERENT METHODS OF CURE.

This then is the general nature of fevers. But the methods of cure differ, according to their different authors. Asclepiades says, that it is the duty of a physician to effect the cure safely, speedily, and with ease *to the patient*. This is to be desired: but generally too great haste and too great indulgence both prove dangerous. What moderation must be used in order to obtain all these ends as far as possible, the principal regard being always had to the safety *of the patient*, will come into consideration, when we treat of the particulars of the cure.

And the first inquiry is, how the patient is to be treated in the beginning of the distemper. The ancients by the use of some medicines endeavoured to promote concoction; for this reason, that they were extremely afraid of crudity: next they discharged by frequent clysters that matter, which seemed to hurt. Asclepiades laying aside the use of medicines, ordered clysters not so frequently as they, but in almost every distemper. And he professed his principal cure for a fever was the disease itself. He thought also, that the strength of the patient was to be worn out by light, watching, and great thirst: insomuch that he would not even allow the mouth to be washed in the first days. So much are those mistaken, who imagine the whole of his regimen to be agreeable. For indeed in the advance of the distemper he even administered to the luxury of the

patient; but at the beginning he acted the part of a tormentor.

Now I grant that medicinal potions and clysters, ought to be used but sparingly. And yet I do not think these are to be administered with a view to destroy the patient's strength: because the greatest danger arises from weakness. Wherefore it is proper only to diminish the redundant matter; which is naturally dissipated, when there is no new accession to it. For this reason the patient must abstain from food in the beginning, and in the day-time be kept in the light, unless he be weak, because even that contributes to the discharge. And he ought to lye in a very large room.

As to thirst and sleep, the best mean is, that he be awake in the day-time, and rest in the night, if possible; and neither drink plentifully, nor be too much tormented with thirst. His mouth also may be washed, when it is both dry, and has a fetid taste; although such time is not seasonable for drinking. And Erasistratus very justly observed, that often the mouth and fauces require moisture, when there is no want of it in the internal parts; and that it is of no consequence, that the patient is uneasy. Such then ought to be the treatment at first.

Now the best medicine is food seasonably administered: when that must be given first, is a question. Most of the ancients were slow in giving it; often on the fifth or sixth day: and that perhaps the nature of the climate in Asia or in Egypt admits of. Asclepiades, after he had for three days fatigued the patient in every way, appointed the fourth for food.

But Themison of late considered, not when the fever had begun, but when it had gone off, or at least was abated; and waiting for the third day from that time, if the fever had not returned, he gave food immediately; if it did come on, when it had ceased; or if it continued constantly, when at least it was mitigated.

Now none of these rules is always to be followed. For it may be proper to give food on the first day, it may on the second, it may on the third, it may not before the fourth or fifth; it may after one fit, it may after two, it may after several. For the qualities of the distemper, constitution, air, age, and season of the year make some difference. And no time can be universally fixed in things so widely different from each other. In a distemper that weakens more, food must be sooner allowed; also in an air that is more dissipating. Upon this account in Africa for no day it seems proper to prescribe fasting. It should be given also sooner to a boy, than a young man; more quickly in summer, than winter. This one thing must be practised always and every where, that a physician sitting by should now and then observe the strength of the patient, and as long as that continues, encounter the disease by abstinence; if he begins to apprehend weakness, support him by food. For it is his business to be careful neither to load the patient by superfluous matter, nor when he is weaker, to kill him by fasting. And this I find in Erasistratus, who though he did not direct, when the belly, when the body itself was to be evacuated, yet by saying that these were to be regarded, and that food was to be given, when the body stood in need of it, has plainly

enough shewn, that it ought not to be given, while there w as a sufficient quantity of strength, and that care should be taken, that it was not too much exhausted.

From these things it may be inferred, that many people cannot be attended by one physician; and that the man to be trusted is he, that knows his profession, and is not much absent from the patient. But they, that practise only from views of gain, because their profits arise in proportion to the number of patients, readily fall in with such rules, as do not require close attendance; as in this very case. For it is easy even for such, as seldom see the patient, to count the days and the fits: but it is necessary for him to sit by his patient, who would form a true judgment what is alone fit to be done; when he will be too weak unless he get food. In most people however the fourth day is usually the most proper for beginning to give food.

But there is still another doubt about the days themselves, because the ancients chiefly regarded the odd days, and called them critical[BC], as if on these a judgment was to be formed concerning the patients. These days were the third, fifth, seventh, ninth, eleventh, fourteenth, and twenty-first; so that the greatest influence was attributed to the seventh, next to the fourteenth, and then to the twenty-first. And therefore with regard to the nourishment of the sick, they waited for the fits of the odd days: then afterwards they gave food, expecting the approaching fits to be easier; insomuch that Hippocrates, if the fever had ceased on any other day, used to be apprehensive of a relapse.

This Asclepiades justly rejected as idle, and said that no day was more or less dangerous to the patients, by its being either even or odd. For sometimes the even days are worse; and food is given more properly after the paroxysm of the fevers: sometimes also in the same distemper the quality of the days is changed: and that becomes more severe, which had used to be more mild: and the fourteenth day itself is even, upon which the ancients laid a great stress. And when they maintained, that the eighth was of the same nature with the first, because the second number of seven began from it, they were inconsistent with themselves in not taking the eighth, or tenth, or twelfth day, as the more important: for they attributed more to the ninth and eleventh. When they had done this without any plausible reason, they passed on from the eleventh, not to the thirteenth, but to the fourteenth. It is a remark of Hippocrates too, that the fourth day is worst to him, that is to be relieved on the seventh. So that even by his own account, upon an even day both the fever may be more violent, and a sure indication given of what is to follow. And the same author elsewhere takes every fourth day to have the strongest influence with regard to both events; that is the fourth, seventh, eleventh, fourteenth, seventeenth: in which he passes from the odd to the even reckoning. Neither in this indeed has he kept to his point: since the eleventh is not the fourth, but the fifth day after the seventh. Whence it appears, in whatever light we consider the number, no true reasoning can be found in his doctrine. But with regard to these the ancients were misled by the Pythagoric numbers at that time

in great vogue: whereas here as well as in other cases a physician ought not to count the days, but to consider the paroxysms themselves; and upon them to found his conjecture when food is to be given.

But this is of more importance, to know whether the proper time for giving food be, when the tumultuous motion of the vessels has pretty much subsided, or while some relicks of the fever still remain. For the ancients prescribed nourishment, when the body was in the soundest state: Asclepiades, upon the decline of the fit, but before it was over; his reason for which was weak; not but that food is to be given sometimes more quickly, if another paroxysm is apprehended soon; but because certainly it ought not to be given, but when the body is in its best condition: for what is received by a body free from disorder is less liable to corruption. Neither is it true, which Themison imagined, if a patient was to be well for two hours, that it would be better to give it then, that it might be digested(2), while the body was in health. Indeed if it could be so speedily digested, that would be best. But as so short a time is not sufficient, it is better that the beginning of food should be upon the end of one paroxysm, than that any of it should lie in the stomach, when another begins. Thus if a pretty long interval is to follow, it is to be given, when the person is freest of all indisposition; if but a short one, before the patient be quite well. What has been said of the sound state during an intermission, holds likewise with respect to the greatest remission we find in a continued fever. But it is also a question, whether it is necessary to wait so many hours, as use to be taken up by the fit; or whether it is sufficient to

pass over the first part of them, that those patients may be more easy, who sometimes have not a perfect intermission. But it is most safe to suffer the whole time of the fit to be over first: although when the paroxysm has been long, the patient may be indulged sooner; nevertheless so that at least the one half be suffered to elapse first. And this is not only to be observed in the kind last mentioned, but in all fevers.

CHAP. V.

PARTICULAR DIRECTIONS FOR THE GIVING OF FOOD IN THE DIFFERENT SPECIES OF FEVERS.

These observations are of a more general nature belonging to all kinds of fevers: I shall now descend to the particular species of them. Wherefore if there has been only one fit, which has gone off, and that arose either from the inguen(3), or from fatigue, or from heat, or from some such accident, so that there is no reason to apprehend danger from any internal cause, the following day, when the time of the fit has passed without any disorder, food may be given. But if the heat come from within; and a heaviness of the head or præcordia has followed; and there is no apparent cause for the disturbance of the body; although health has followed one fit, yet because a tertian may be apprehended, the third day is to be expected; and when the time for the fit is over, food is to be given, but very little of it; because a quartan may also be feared. But upon the fourth day, if the body is well, it may be freely used. If indeed the paroxysm has followed upon the second, third, or fourth day, then we may conclude it to be a disease. But the method of cure in tertians and quartans (whose periods are certain, whose fits leave no indisposition, and the intervals are in a good measure calm) is easier: of which I shall speak in their proper place.

At present I shall treat of those, which distress every day. Wherefore it is most convenient to give food to

the patient every third day; that the abstinence of one day may lessen the fever, on the other nourishment may recruit the strength. But when the fever is quotidian, and goes entirely off, it ought to be given as soon as the body becomes well. But if though there are not distinct fits immediately succeeding each other, yet there are feverish heats without intermission, and these daily increase without going entirely off, then *it is to be allowed at that point of time*, when a greater remission is not to be expected: if on one day the fit is more severe, and on another milder, after the most severe. Now commonly a more severe fit is followed by an easier night: whence it happens also, that a more troublesome night precedes a severer fit.

But if the fever is continued, and is never mitigated, and there is a necessity for giving food, the proper time for doing this is much disputed. Some, because patients are commonly easier in the morning, think that the opportunity. Which if it be so, is a proper time, not because it is the morning, but because the patients then have a remission. If even at that time the patient has no ease, since upon this very account that time is worse, that whereas from its own nature it ought to be better, from the force of the distemper it is not so; and likewise because the middle of the day follows, after which as almost every patient grows worse, there is room to fear, lest he be then more distressed, than he used to be: therefore, some give food to such a patient in the evening. But since at that time sick people are commonly worst, there is cause to be afraid, lest if we raise any commotion then, the disorder may be increased. For these

reasons others defer it(4) till midnight, when the severest is just over, and while the same is at the greatest distance. It is more safely given before day-light, when most sick people get the quietest sleep; next to that in the morning, the time which is naturally the easiest of all.

But if the fits are irregular, because in such a case there is room to fear, that they may follow immediately after food; whenever a patient is relieved from the paroxysms he ought to eat. But if several paroxysms come on the same day, it is necessary to consider, whether these be in all respects equal (which can scarcely happen) or unequal. If they be in every point equal, food ought rather to be given after that fit, the end of which does not fall betwixt mid-day and the evening. If they are unequal, it must be considered what the difference is. For if one is more severe, and the other more mild, it ought to be given after the more severe fit: if the one is longer, and the other shorter, after the longer: if one is more severe, and the other of longer continuance, it must be examined, which of the two distresses most, the one by its violence, or the other by its continuance; and it must be given after the most weakening. But it is plainly the most important point of all, how great the remissions are, and of what nature, which happen between the fits. For if an uneasiness remains after one paroxysm, and the body feels no indisposition after the other; when the body is well, it is the fitter time for food.

If a feverishness always continues, but yet one remission is longer than the other, that is rather to be chosen: so that when the fits are continued, food

may be administered immediately upon the decline of the first. For this is an universal rule, and may serve for directing all our measures in this article, to give food at the greatest distance always from a future fit; and with this caution to give it in the best state of the body. Which must be observed not only between two fits, but also amongst several. But whereas it is most generally proper to give food every third day, yet if the body is weak it must be given every day: and much more so, if the fevers are continued without any remission: and it is the more needful, the more they weaken the body; or if two or more fits attack on the same day. Which occurrence also requires the giving of food every day immediately from the first, if the pulse has presently sunk; and oftener on the same day, if in the midst of several fits the strength of the body now and then fails. Yet in these this observation must be regarded; that after such fits less food be given, where if the strength of the body would admit, none would be given at all. Now as a paroxysm must either be instantly expected, or beginning, or increasing, or at its height, or abating; and again in its abatement either at a stand, or entirely gone off; it is certain the best season for food is, when the fever is ended; next to that, when in its abatement it stops; thirdly, if there be a necessity, whenever it begins to abate: all other times are dangerous. But if upon account of weakness there is an absolute necessity for it, it is better to give somewhat, when its increase is at a stand, than while it still increases; better when it is instantly expected, than when it is beginning. Nevertheless no time is improper for supporting one,

who faints for want.

Nor indeed is it sufficient for a physician to regard only the fevers, but also the state of the whole body, and direct his cure by that; whether the patient has a sufficient measure of strength or not, whether some troublesome passions affect the mind. And as the sick should always be in a state of tranquillity, that they be distressed in body only, and not in mind at the same time; so it is more especially necessary immediately after food; so that if there be any thing, which would render them uneasy, it is the best way, while they are sick, to conceal it from them; if that cannot be done, at least to forbear after food; and after their time of sleep, and when they have awaked, then to communicate it.

CHAP. VI.

THE PROPER TIMES FOR GIVING DRINK TO PERSONS IN FEVERS, AND THE KINDS OF ALIMENT SUITED TO THE SEVERAL STAGES OF THE DISTEMPER, TOGETHER WITH SOME GENERAL OBSERVATIONS.

But patients are more easily managed with regard to food; because in spite of some inclination of their own, the stomach then refuses it. But in the article of drink the struggle is hard; and the more violent, the higher the fever is: for this inflames the thirst, and demands water most importunately, when it is most dangerous. But the patient is to be informed, that when the fever has abated, the thirst also will immediately decline; and that the paroxysm will be longer, if any nourishment be given to him: and that he that drinks none, is sooner freed from the thirst. However as even people in health can bear hunger a good deal easier than thirst, it is necessary to indulge the sick more with regard to drink than food. But on the first day no moisture ought to be given, unless the pulse has suddenly sunk so low, that there is a necessity for giving food also; but on the second and following days likewise, where food is not to be allowed, yet if the thirst be violent, drink may be given.

What was said by Heraclides of Tarentum is not altogether without reason; that when either bile or crudity make a patient uneasy; it is expedient by a moderate quantity of a drink to mix new matter with

the corrupted. This rule ought carefully to be observed, that the same times be chosen for drink as for food: when it is to be given without the other, let it be at a time, when we would desire the patient to sleep, which commonly thirst prevents. It is generally allowed, that as too much moisture is hurtful to every person in a fever, it is especially so to such women, as have fallen into fevers after child-bearing.

But as the fever and the manner of its remission direct to the proper seasons for food and drink, so it is not very easy to know, when the patient has a fever upon him, when he is better, or when his strength fails; without which these cannot be properly administered. For we principally trust the pulse, a most fallacious mark; because this is often slower or more quick from the age, and sex, and difference of constitutions. And generally when the body is in good enough health, if the stomach be weak, sometimes also in the beginning of a fever, it rises and sinks; so that the person may seem to be weak, when he can very well stand a severe fit that is just approaching. On the other hand, the pulse is often raised, and the vessels relaxed by the influence of the sun, and the bath, and exercise, and fear, and anger, and any other passion of the mind. So that, when a physician first comes in, the anxiety of the patient, doubtful how he may think him, accelerates the pulse. For this reason it is the business of a skilful physician not to take hold of the patient’s arm with his hand, as soon as he comes in; but first to sit down with a cheerful countenance, and ask him how he does; and if he has any apprehension, to encourage him with plausible discourse: then to apply his hand

to his wrist(5). Now if the sight of the physician quickens the pulse, how easily may a thousand other accidents disorder it! Another mark, to which we trust, is heat, equally deceitful; for this is excited by warmth, labour, sleep, fear, and anxiety.

Wherefore it is fit to consider those things; but not to trust entirely to them. And we may at once assure ourselves that a person has no fever, whose pulse moves regularly, and who has such a heat as is common to people in health; and that a fever is not necessarily breeding, when there is heat and motion; but only with these circumstances, if the surface of the skin, be unequally dry; if there be a heat in the forehead, and at the same time arising from the internal part of the præcordia; if the breath rushes out of the nostrils very hot; if the colour be changed either for a redness or an unusual paleness; if the eyes are heavy, and either very dry or somewhat moist; if when a sweat comes on, it is partial; if the pulse does not beat at equal intervals. Upon this account the physician ought to sit down neither in the dark, nor at the patient's head, but in a light place opposite to him, that he may take all the marks from the countenance of the patient as he lies.

Now where there has been a fever, and it has decreased, it is, proper to take notice, whether the temples or other parts of the body grow a little moist, so as to portend an approaching sweat. And if there is any prognostic of it, upon that to give warm water to drink, the effect of which is salutary, if it diffuse a sweat over the whole body. For this purpose the patient ought to keep his hands under a good quantity of clothes; and to cover his legs and feet in

the same manner. By laying on such a load many people mismanage patients in the very height of the fever, and especially where it is of the ardent kind. If the body begins to sweat, it is necessary to warm a linen cloth, and slowly to wipe every part. But when the sweat is entirely off, or if it have not come on, when the patient is warmest, and seems fit for food, he is to be gently anointed under the clothes, then wiped, and after that food is to be given him.

Liquid food is most proper for persons in fevers, at least as near as possible to liquids, and that of the lightest kind, particularly gruel; and even this, if the fever be violent, ought to be very thin. Clarified honey also is properly added to it, that the body may be more nourished: but if that offends the stomach, it should be omitted; and so should the gruel itself in like case. Instead of it may be given either intrita,(6) mixed with hot water, or washed alica; if the stomach is firm, and the belly bound, with hydromel; or if the first is weak, and the other loose, with vinegar and water. And this kind of food is sufficient for the first day: but on the second day something may be added, yet of the same nature, either greens, or conchylia, or apples. And while fevers are increasing, this is the only proper food. But when they either go off, or abate, we must always begin with something of the lightest nature, and make an addition of the middle kind, having in the mean time a regard both to the strength of the patient, and of the disease.

To set a variety of food before a patient (as Asclepiades directs) is never proper, but when he is oppressed with a nausea, and his strength fails; that

by tasting a little of each he may escape being famished. But if the patient wants neither strength nor appetite, he must be tempted by no variety; lest he take more than he is able to concoct. Neither is that true, which he alleges, that food of various kinds is more easily concocted; it is indeed taken in more easily; but to concoction the genus and quantity of the food are material. Neither is it safe during great pains, nor in an encreasing distemper, for a patient to fill himself with food; but when there is already a turn towards recovery.

There are also other observations necessary to be made in fevers: and that indeed must be considered, which some regard solely, whether the body be bound or loose: the one of which suffocates, and the other dissipates. For if it is bound, the belly must be opened by clysters, urine promoted, and a sweat sollicited by every method. In this kind of disorder it is serviceable even to let blood, to agitate the body by strong gestations, to keep the person in the light, to enjoin fasting, thirst, and watchfulness. It does good also to take the person into the bath, first to plunge him into the warm bath, then anoint him. Then he should return to the warm bath, and foment his groin plentifully with water; sometimes mix oil in the bath with warm water; take food more seldom, and at greater distances than ordinary, and such as is slight, simple, soft, warm, and small in quantity; especially greens, such as dock, nettles, mallows, or the broth of shell-fish, or muscles, or locustae; and eat no flesh, but what is boiled. But the quantity of drink ought to be more liberal, both before meat, and after it, and while eating too, beyond what thirst

will require. And after the bath may be given even fat broth, or wine of the sweeter kind: during which course once or twice salt Greek wine may be used.

But on the contrary, if the body incline to discharge excessively, then sweat must be restrained, and rest enjoined; and the patient may have his room darkened, and go to sleep, whenever he shall chuse it; the body is not to be agitated, unless by a gentle gestation, and to be relieved according to the nature of its disorder. For if the belly is loose, or the stomach does not retain, when the fever has abated, it is proper to give warm water to drink plentifully, and make him vomit; unless there is a pain either in the fauces, or praecordia, or side, or the distemper be inveterate.

If again a sweat prevails, the skin must be hardened, either by nitre or salt, mixed with oil. But if that disorder is more slight, the body must be anointed with pure oil: if more violent, with oil of roses, or of quinces, or of myrtles, with an addition of austere wine.

Whoever is disordered by any discharge, upon coming to the bath, must first be anointed, and then go in. If the disorder is in the skin, it will be better for him to use cold water than warm. As to his meals, his food should be substantial, cold, dry, simple, and the least liable to corruption, toasted bread, roasted flesh, austere wine, or at least inclining to austerity; and if the belly is loose, let him drink it hot; if sweating be the disorder, or vomiting, it must be cold.

CHAP. VII.

OF THE CURE OF PESTILENTIAL AND ARDENT FEVERS.

The case of pestilential fevers demands attention and a peculiar treatment. In this it is by no means good to try fasting, or medicines, or clysters. If the strength will admit, it is best to let blood; especially if the fever be attended with a burning heat. If that is not safe, when the fever is either abated, or less violent, to cleanse the breast by a vomit. But there is a necessity to order the bath sooner in this than in other distempers; to give wine strong and hot, and every thing glutinous; amongst which flesh of the same kind. For the more quickly that such constitutions of the air destroy, so much the sooner must remedies be laid hold of, even with a degree of rashness. But if he be a boy, that labours under it, and have not sufficient strength for bleeding, he must be cupped, and have a clyster either of water, or the cream of ptisan; then lastly he is to be nourished by light food. It is a general rule, that boys ought to be treated altogether in a different method from men. Wherefore in this, as well as in every other kind of distemper, greater caution must be used at that age in the following articles: not to bleed, not to give a clyster without necessity, nor to torment by watching, or fasting, or excessive thirst, nor to attempt the cure by wine. The patient must vomit after the fever: then the lightest kind of food is to be given; after that he is to sleep: the day following, if the fever continue, he must fast; on the

third day return to the same diet. And we must endeavour, as much as possible in the midst of a seasonable abstinence to nourish him by food at proper times, laying aside every thing else.

Of an Ardent fever.

If an ardent fever is very violent, no medicinal potion is to be given; but during the paroxysms the patient must be cooled by water and oil: which are to be agitated together, till they grow white. He is also to be kept in a spacious room, where he can draw a great deal of pure air; and not be suffocated by many cloaths, but be covered very lightly. Vine leaves also dipped in cold water may be put upon his stomach. And he is not to be tormented with excessive thirst. He is to be allowed nourishment sooner; that is after the third day: and before meat he must be anointed all over with the above-mentioned liquor. If there is a collection of phlegm in his stomach, upon the decline of the paroxysm he must be forced to vomit; and then he must eat cold greens, or fruit of the apple kind, such as agrees with the stomach. If the stomach remains dry, there must be immediately given the cream either of ptisan, or alica, or rice, boiled with recent fat. When the distemper is at the height, but not before the fourth day, after a great thirst preceding, cold water is to be given copiously, that he may drink even beyond satiety; and when the belly and praecordia are filled above measure, and sufficiently cooled, he ought to vomit. Some indeed do not insist upon vomiting; but make use of cold water as a medicine, given only to satiety. After

either of these methods he is to be well covered with cloaths, and laid so as to go to sleep. And commonly after long thirst and wakefulness, after being satiated with full draughts, after a remission of the heat, a sound and long sleep comes on; by means of which a great sweat breaks out, and that is a most immediate relief; but only in those, who have the burning heat, but no pains, nor tumour of the praecordia, and nothing to prevent it in the lungs, or fauces; or have had no ulcer, nor faintings, nor looseness of the belly. But if one in such a fever as this coughs gently(7), he ought neither to struggle with a violent thirst, nor drink cold water; but to be treated in the same manner, as is directed in other fevers.

CHAP. VIII.

THE CURE OF A SEMITERTIAN.

But where there is that kind of tertian, which the physicians call semitertian, it requires careful observation to prevent being deceived. For it has generally more frequent paroxysms and intervals, so as it may seem a different kind of distemper; and the fit is protracted to twenty-four hours(8) and thirty-six: that what is really the same, does not seem to be so. And it is highly necessary both that food should not be given, unless in that remission, which is certain: and as soon as that comes, to give it immediately. And many patients die suddenly by the mistake of their doctor either way. And unless there is some important reason against it, blood ought to be let in the beginning; and then food should be given, such as will not raise the fever, and yet support under its long continuance.

CHAP. IX.

THE CURE OF SLOW FEVERS.

Sometimes too we find slow fevers continuing without remission, and no room left either for food or any remedy. In this case it ought to be the care of the physician to change the distemper: for perhaps it may become more easy to cure. For this reason the body of the patient is often to be gently rubbed with cold water with oil infused, because sometimes it thus happens, that a shuddering arises, which may be some beginning of a new commotion; after that, when the body has grown hotter, a remission may follow too. In these cases friction with oil and salt seems to be a useful method.

But if coldness of the extremities, and numbness, and restless changes of postures continue long, it is not amiss, even during the fever, to give three or four cyathi of mulse, or well diluted wine together with food. For the fever is often encreased by it; and a greater heat arising at the same time both removes the former disorders, and affords hope of a remission, and from that of a cure.

And indeed the method of cure is not new, to make use of contrary medicines, by which at this time some recover patients committed to their charge, who were long under the care of more cautious physicians. For even amongst the ancients before Herophilus and Erasistratus, but after Hippocrates, was one Petron, who, as soon as he was called to a

person in a fever, laid a great many cloaths upon him, that he might at once excite a great heat and thirst. After that, when the fever began to be a little abated, he gave cold water to drink; and if it once raised a sweat, he pronounced the patient to be out of danger: if it had not procured that discharge, he gave still more cold water, and then obliged him to vomit. If by either method he freed the person from the fever, he immediately gave him roast pork and wine. If it did not give way to these methods, he boiled water with salt, and obliged him to drink it, that by vomiting he might cleanse his belly(9).

And these particulars made up his whole practice. Which was not less acceptable to those, whom the successors of Hippocrates had not recovered, than it is to those in this age, who have been long unsuccessfully treated by the followers of Herophilus or Erasistratus. Nor is this kind of medicine upon this account not to be esteemed rash; because if it has been pursued from the beginning, it kills more, *than it cures*. But since the same things cannot agree with every body, those commonly, who are not restored by a rational method, are relieved by temerity; and for that reason physicians of that class manage another's patients better than their own. But it is a practice not unbecoming even the man of circumspection, at times both to change a distemper, and to increase one, and to inflame fevers; because where the disorder, that is present, does not admit of a cure, another may, which is to succeed in its place.

CHAP. X.

REMEDIES FOR THE CONCOMITANT SYMPTOMS OF FEVERS.

It is necessary also to consider, whether fevers are simple, or whether other disorders are not likewise concomitant; that is, whether the head be pained, the tongue rough, or the præcordia tense. If there be pains in the head, it is proper to mix oil of roses with vinegar, and to apply that(10); then to have two pieces of cloth, which are as broad and as long as the forehead; to have one of these alternately in the vinegar and rose-oil, and the other on the forehead; or to put on sordid wool dipped in the same. If vinegar is offensive, pure oil of roses must be used. If even the rose-oil is offensive, bitter oil. If these do little service, dry iris, or bitter almonds, or any of the cooling herbs may be powdered. Any of them mixed with vinegar and laid upon the part lessens the pain: but in some one of these is more successful, and in others another. Relief is also procured by bread laid on with poppies, or with oil of roses, cerus, or litharge. It is also not improper to smell at either serpyllum or dill.

But if there is an inflammation and pain in the præcordia, in the first place restringent cataplasms must be applied; and not the hotter kind, lest there should be a greater flux of matter thither. After that, as soon as the inflammation has abated, recourse must be had to hot and moist, in order to discuss what remains. Now the marks of inflammation are

four, redness, and swelling, together with heat, and pain. So much was Erasistratus mistaken, when he declared there was no fever without it.

Wherefore if there is pain without inflammation, nothing is to be applied at all; for the fever itself will presently remove that. But if there is neither an inflammation, nor fever, but only a pain of the præcordia, warm and dry fomentations may be immediately used. If the tongue is dry and scabrous, it is first to be wiped with a penecillum dipped in hot water; and then anointed with a mixture of rose-oil and honey. The honey cleanses, and the oil of roses restringes, and at the same time does not suffer it to grow dry. But if it is not rough, but only dry, after wiping it with the penecillum it ought to be anointed with rose-oil mixed with a little wax.

CHAP. XI.

REMEDIES AGAINST A COLDNESS OF THE EXTREMITIES PRECEDING A FEVER.

It is common also for a coldness to precede fevers, which of itself is a very troublesome kind of disorder. When it is expected, the patient must be forbid all drink: for giving this a little before much increases the malady. He is also to be timely covered with many cloaths. Dry and hot fomentations are to be used to those parts, for which we are apprehensive; in such a manner that the most violent heat may not begin immediately, but increase gradually. And those parts are to be rubbed with the hands anointed with old oil, and some of the warming medicines may be added to it. And some physicians are content with one friction with any kind of oil. In the remissions of such fevers some give three or four cyathi of gruel, while the fever still continues; and then, when it is quite over, refresh the stomach with cold and light food. I think this ought to be then tried, when food once given, and that after the fever, does little service.

But great care must be taken, that we be not deceived as to the time of the remission; for even in this kind of distemper, often the fever seems to abate, and again increases. Wherefore we must trust no remission, but that, which both continues, and lessens the restlessness, and excessive heat of the body, which the Greeks call(11) zesis[BD]. This is a rule generally received, if every day the fits are

equal, to give a little food every day: if unequal, food must be given after the most severe; after the milder hydromel.

CHAP. XII.

THE CURE OF A SHUDDERING BEFORE FEVERS.

A shuddering commonly precedes those fevers, that have a certain period, and a perfect remission, and for this reason are the most safe, and most easily admit of a cure: for where the periods are uncertain, neither clysters, nor the bath, nor wine, nor any other remedy can be duly administered. For it is uncertain when the fit will come: so that if it come on suddenly, the greatest detriment may happen to accrue from that, which was intended to give relief. And nothing else can be done, than that the patient practise a strict abstinence in the first days of the disease: then upon the decline of that fit, which is most severe, let him take food.

But where the period is certain, all these things are more easily tried; because we can more readily inform ourselves of the succession both of the fits and the intervals. Now in this kind, when they are of long standing, fasting is not good: in the first days only we are to make use of it to oppose the distemper; after that the cure is to be divided, and first the shuddering, then the fever is to be removed. Wherefore as soon as a person has shuddered, and after the shuddering has grown hot, it is fit to give him warm water to drink a little salt, and force him to vomit: for generally such a shuddering arises from something bilious oppressing the stomach. The same method is to be pursued, if at the next period also it has again appeared: for thus it is often removed. And

by this time one may find out the species of the fever.

Wherefore when the third fit is expected, which may possibly come on, the patient must be brought to the bagnio, and care must be taken that he be in the bath at the time of shuddering. If he have felt it there also, let him do the same nevertheless, when the fourth fit is expected: for by this repetition it is often removed. If the bath proves unsuccessful, before the fit let him eat garlick, or drink hot water with pepper: for these too raise a heat, which repels the shuddering. After that, before the shuddering has time to come on, let him cover himself up in the manner above directed under the article of coldness: and it is proper immediately to apply all round his body pretty hot fomentations, and chiefly extinguished tiles, and coals wrapped up in cloths.

If notwithstanding the shuddering has broke out, he must be anointed within the cloaths plentifully with hot oil; to which also may be added some of the warming substances: and friction may be used, to as great a degree as he is able to bear, and especially in his hands and feet, and let him hold in his breath. And it must not be given over, although the shuddering do return: for often the perseverance of the physician overcomes the distemper of the body.

If he has vomited, warm water must be given, and he obliged to vomit again; and the same methods must be repeated, till the shuddering is removed. But beside these a clyster must be given, if the shuddering gives way slowly: for that has a good effect by exonerating the body. The last remedies

after these are gestation and walking. Now in distempers of this kind, the fittest food is such as may prove laxative, and glutinous flesh. When wine is given, let it be austere.

CHAP. XIII.

THE CURE OF A QUOTIDIAN FEVER,

Now these observations relate to the periodical returns of all fevers: but the several species of them are to be distinctly treated, according to their different natures. If it be a quotidian, for the first three days by all means abstinence should be observed; then food be taken every other day. If the distemper has become inveterate, after the fit it is proper to try the bath and wine, especially if, when the shuddering is removed, the fever remains.

CHAP. XIV.

THE CURE OF A TERTIAN FEVER.

But if the fever be either a tertian, which has a perfect intermission, or a quartan, on the intermediate days, it is proper to walk, and make use of other exercises and unctions. Cleophantus, one of the more ancient physicians, in these distempers used to pour a great quantity of hot water upon the head of the patient long before the fit, and then to give him wine. Yet Asclepiades, though he adopted most of his precepts, has justly omitted this: for it is of doubtful effect.

When there is a tertian fever, he says it is proper to administer a clyster the third day after the fit; on the fifth, after the shuddering to procure a vomiting; then after the fever, according to Cleophantus's practice, to give the patients food and wine, while they are yet hot; on the sixth day to keep them in bed: for thus it will happen, that the fit will not return on the seventh day. That this may often answer is very probable. Yet it is safer in this order to make trial of these three remedies, vomiting, purging by clysters, and drinking of wine, for three days, that is, on the third, and fifth, and seventh; and not to drink wine, till after the fit upon the seventh day.

But if the distemper is not removed in these first days, and it grows inveterate, on the day the fit is expected, let the patient keep his bed; after the fit be

rubbed; and after eating let him drink water: the day following, when he takes no food, let him intermit his exercise and unction, and rest content with water alone. And this indeed is best. But if his weakness bear hard upon him, he ought both to take wine after the fit, and a little food on the intermediate day.

CHAP. XV.

THE CURE OF A QUARTAN FEVER.

The same method is to be followed in a quartan. But since this is very slowly terminated, unless it have been removed in the beginning, greater accuracy must be observed in prescribing from its first appearance, what ought to be done it. Wherefore if a person is attacked with a fever and shuddering, and it has gone off, all that day and the following, and the third, he ought to confine himself to a stricter regimen, and on the first day drink only warm water after the fever; the two following days to abstain from that as much as possible; on the fourth day, if the fever returns with the shuddering, to vomit, as has been directed before; then after the fit, to eat sparingly, and drink a quadrans of wine; the day after that, and the third to abstain; taking only warm water if he be thirsty. On the seventh day he should prevent the coldness, by going into the bath before its time, fast and observe the former regimen strictly(12); if the fever has returned, have a clyster: when the body has rested after that, he should be anointed and brushed briskly; take food and wine in the same way, and for the two following fast, not neglecting the friction. On the tenth day he must try the bath again; and if the fit has come on after, brush in the same manner, and drink wine more plentifully. And thus the consequence is, that a rest of so many days, and abstinence, with the practice of the other injunctions, may remove the fever.

If notwithstanding these it continues, another method of cure entirely different is to be pursued; and all our measures must be directed to this point, that the body may easily bear what is to be long endured. For this reason the practice of Heraclides of Tarentum ought to be less approved, who prescribed clysters in the beginning, after that fasting to the seventh day. Which course though a person should be able to undergo, yet when he is even freed of the fever, he will scarcely have strength to recruit; and so if the fever frequently returns, he must sink under it. Wherefore if the distemper shall continue upon the thirteenth day, the bath must neither be tried before the fever nor after it, unless sometimes when the shuddering is already removed. Now the shuddering is to be repelled by the same means, as have been directed before. Then after the fever it is proper to be anointed, and rubbed briskly; to eat heartily of substantial food; to take as much wine as he inclines; the day following, when he has rested sufficiently, to walk, take exercise, be anointed, and stoutly brushed; to take food without wine; on the third day to abstain.

On the day that he shall expect the return of the fever, it is proper for him to rise before *its hour*, and exercise himself, and to endeavour to have its time coinciding with his exercise: for thus it is often dispelled. But if it has seized him in the midst of his exercise, in that case to give over. In a disorder of this kind the remedies are unction, friction, exercise, food and wine. If the belly is bound, it must be opened.

Now these things are easily performed by the more

robust; but if the patient be grown weak, gestation must stand instead of exercise. If he cannot even bear this, yet friction must be used. If this also when vehement distresses him, the cure must be confined to rest, unction, and diet: and care must be taken, lest any crudity change the distemper into a quotidian. For a quartan kills no body: but if it be changed into a quotidian, the patient is in a bad way: which however never happens, unless by the fault either of the patient or the physician.

CHAP. XVI.

THE CURE OF A DOUBLE QUARTAN.

But if there are two quartans, and those exercises, which I have prescribed cannot be used, there is a necessity either entirely to rest, or if that is difficult, to walk gently, then sit down, with the feet and head carefully wrapped up; as often as the fit has come on, and gone off, to eat sparingly, and drink a little wine; at other times, unless the weakness be very great, to abstain. But if there is hardly any intermission between two fits, to take food after both are over: then in the interval both to move a little, and after unction to eat. Now since an inveterate quartan is very seldom cured unless in the spring, in that season especially attention must be given, that nothing be done, which may obstruct the recovery of health. And it is of service in an old quartan to alter now and then the manner of living, to change from wine to water, from water to wine, from mild food to such as is acrid, and on the contrary; to eat radish, then vomit, or open the belly by chicken broth; to add warming medicines to the oil for friction; before the fit to take two cyathi of vinegar, or one of mustard, with three of Greek salt wine; or pepper, castor, laser(13), and myrrh, mixed in equal proportions, and diluted with water; for by these, and such like the body must be agitated, that so a change may be made from its present state.

If the fever has disappeared, it is proper to be long mindful of its periodical day; and on that day to

guard against cold, heat, crudity, and fatigue: for it easily returns, unless it be feared for some time after the recovery of health.

CHAP. XVII.

THE CURE OF A QUOTIDIAN ARISING FROM A QUARTAN.

But if a quotidian is formed from a quartan, when that has happened in the beginning(14), it is proper to abstain for two days; in the evening to make use of friction, and give only water to drink. On the third day it often happens, that the fit does not come. But whether it has appeared or not, food must be given after the time for the fit: and if it continue, the strictest abstinence possible must be enjoined for two days, and friction used every day.

CHAP. XVIII.

OF THE SEVERAL KINDS OF MADNESS AND THEIR CURE.

I have now gone through the treatment of fevers. There remain other disorders of the body, which come on after them: some of which, that cannot be assigned(15) to any certain part, I shall immediately subjoin. I shall begin with madness, and treat of the first kind of it, which is both acute, and happens in a fever; the Greeks call it phrenitis[BE].

First of all it is necessary to know, that sick people sometimes in a febrile paroxysm lose their judgment, and talk incoherently. Which, though it be not trifling, and cannot happen unless in a violent fever, yet is not equally dangerous; for it is commonly of short continuance: and when the violence of the fit is abated, the judgment presently returns. Nor does this kind of distemper require any other remedy, than what has been already directed for curing a fever.

It becomes then a phrenitis, when the delirium begins to continue without interruption; or when the patient, though he still have his reason, yet forms to himself some vain images: it is perfect, when the mind gives itself up to these images. Now there are several kinds of it: for amongst phrenitic people some are merry, others sad; some are more easily commanded, and their disorder goes no farther than words; others grow outrageous, and do acts of violence; and of these last again some only employ force, others even make use of cunning, and present

a specious appearance of judgment, while they are catching at opportunities of doing mischief; but they are discovered by the issue.

Such of them as only rattle, or do no harm but in trifles, it is needless to load with severe restraints. Those, who are more violent in their actions, it is proper to bind, lest they should hurt either themselves or any other person. Nor should we trust any of them, if in order to get rid of his chains he pretends to be well, though he speak sensibly, and make lamentable complaints; because this is nothing else but the cunning of a mad person.

Generally the ancients kept such patients in the dark; for this reason, that it hurts them to be terrified: and they judged, that darkness of itself contributed something to the quiet of the mind. But Asclepiades, alleging that darkness itself strikes terror, ordered them to be kept in the light. But neither of these holds always. For one person is more disturbed by the light, and another by darkness: and some are to be met with, in whom no difference can be found either the one way or the other. Therefore it is best to try both methods; and to keep him, that has a horror at darkness, in the light; and him, that is afraid of light, in darkness. But where there is no such difference, if the patient have strength, he must be confined in a light place; if not, in a dark one.

To make use of remedies in the greatest violence of the phrenzy is needless: for at the same time the fever also increases. Wherefore nothing is to be done then, besides confining the patient. But when the circumstances allow, speedy help must be

administered. Asclepiades asserted, that to bleed such was just the same as to murder them: upon this principle, that there was no madness, but when the fever was very high; and that bleeding could not be properly performed, unless in its remission. He himself endeavoured to procure sleep in such cases by much friction. But since both the violence of the fever prevents sleep, and friction is not useful unless in its remission, he ought to have omitted this remedy too. What then is to be said to this case? Many things are properly done in imminent danger, which should not be practised on any other occasion. And even a continued fever has times, in which, though it does not remit, nevertheless it does not increase. And this though not the best, yet is a pretty favourable season for the application of remedies. And if the strength of the patient admits of it, he may also lose blood.

There may be the same reason(16) for doubting whether a clyster should be administered. Then after the interval of a day, it is fit to clip the hair of the head close to the skin; then to foment it with a decoction of some of the restringent herbs; or to foment it first, after that clip, and foment it again; and lastly to embrocate the head and nostrils with oil of roses; to hold also to the nostrils rue bruised with vinegar, and to provoke sneezing by medicines efficacious for that purpose. These things however are to be done only to persons, who don’t want strength. If there be a weakness, the head is only to be moistened with oil of roses, adding to it serpyllum or something of the like nature. Also whatever be the degree of strength, two herbs are useful, nightshade

and the wall-herb, if the head be bathed with the expressed juice of them both. When the fever has remitted, friction must be used; but more sparingly in those, that are too merry, than in those, that are too sad.

It is necessary to apply to the minds of people thus mad in a manner suitable to the temper of each. For the groundless apprehensions of some are to be alleviated: as was done to a very rich man in fear of starving, whom they relieved by frequent accounts of estates bequeathed to him. The audaciousness of others must be restrained, as is practised in the case of those, who require even stripes to keep them under government. The unseasonable laughter of some must be checked by chiding and threats. The sorrowful thoughts of others must be dispelled: for which purpose concerts of music, and cymbals and noise are useful. Yet these patients must be oftener humoured than contradicted: and the mind is to be led by slow degrees, and not evidently, from their irrational assertions to better notions. Sometimes also the attention of the person must be strongly engaged; a method taken with studious men, to whom a book is read, either with propriety of accent, if they be pleased with it, or with an improper tone of voice, if that offends them: for by correcting they begin to give their attention. Moreover they must be obliged to repeat any thing they may remember. Some also have brought those to eat, that had no inclination for it, by placing them in the midst of people at a feast.

To every body thus affected, sleep is both hard to be obtained, and highly necessary; for by this most of

them recover. For this purpose, and at the same time for composing the mind, the ointment of saffron(17) with that of iris rubbed upon the head is useful. If notwithstanding they continue wakeful, some endeavour to procure them sleep by giving them to drink a decoction of poppies or henbane; others put mandrake apples under their pillow: others apply to their forehead either amomum or sycamine tear. This name I find among the physicians. But why do the Greeks call the mulberry-tree sycaminus[BF], when there is no tear of the mulberry-tree? But this name they give to the tear of a tree growing in Egypt, which they call sycomorum[BG]. Many physicians now and then foment the face and head with a sponge dipt in a decoction of poppy-heads.

Asclepiades affirmed these things to be hurtful: because they often change the distemper into a lethargy. His advice is, that the first day the patient should abstain from meat, drink, and sleep; on the evening water should be given him to drink; then friction should be used so gentle, that even the hand that rubbed, should not press strongly; the day after, all these things being repeated, on the evening gruel and water should be allowed him, and the friction again repeated: for by this we would procure sleep. This sometimes happens; insomuch that by his own confession, too much friction may even endanger a lethargy. But if by these means sleep is not obtained, then at last it must be procured by the medicines above-mentioned: still with the same moderation, which is also necessary in this case; lest it be not in our power afterwards to wake the person, whom we desire to sleep. A fall of water near is also some help

to sleep; or gestation after meat, and in the night time; especially the motion of a suspended bed.

Nor is it improper, if bleeding has not gone before, and the understanding be still disturbed, and there be no sleep, to make an incision in the occiput, and apply a cucurbital: because this, by lessening the distemper, may bring on sleep. Moderation must also be used as to his diet: for the patient must neither be full-fed, lest he grow outrageous, nor must he be tormented with hunger, lest from his weakness he fall into a cardiac disorder. He must use weak food, and especially gruel, and drink hydromel, three cyathi of which are sufficient in winter, and four in summer.

There is another kind of madness, which continues a longer time; because generally it begins without a fever, afterwards excites slight feverish fits; and goes no farther than a sadness, which seems to proceed from atrabilis. In this bleeding is useful. If there be any reason against that, the first remedy is abstinence; the second to purge by white hellebore and vomiting: after either of these friction is to be used twice a day; if the patient be pretty strong, frequent exercise too, a vomit fasting, food of the middle kind is to be given without wine. As often as I mention this kind of food, I would be understood, that it may be given even of the weakest, provided one be not confined to that alone: that only the strongest is to be refrained. Besides, the belly is to be kept as soft as possible: terrors are to be dispersed, and rather good hopes are to be given. Entertainment must be sought in amusing stories and diversions, such as the person in health used to be most pleased

with. If there are any works of his performing, they must be commended, and placed before his eyes. His groundless sorrow is to be mildly reprimanded. Arguments must be offered now and then to persuade him, that in those very things, which disturb him, there is more matter for joy than anxiety. If a fever has also come on, it must be cured in the same manner as other fevers.

The third kind of madness is the longest of all; insomuch that it does not shorten life. Which kind is most incident to people of strong constitutions. Now there are two species of this: for in some the deception arises from *false* images, not from the understanding: such a madness the fables of the poets represent that of Ajax, or Orestes(18): others are disordered in their judgment. If imaginations mislead, first of all it must be observed, whether they be melancholy or merry. If melancholy, black hellebore ought to be given as a purge; in the merry kind, the white as an emetic. And if the patient will not take it in a potion, it must be added to bread, that it may the more easily deceive. For if he be thoroughly purged, it will in a great measure lessen the distemper. And therefore if hellebore once given has done little service, after a proper interval it ought to be repeated. And it should be known that this distemper is more mild, when attended with laughter, than with gravity. And this rule also is universal in all diseases, when any person is to be purged in the inferior parts(19), that the belly be first opened; when the superior parts, it must be bound.

But if the madness affect the judgment, the patient is best treated by some kind of tortures. When he has

said or done any thing wrong, he is to be punished by hunger, chains, and stripes: he must be forced both to attend and get something by heart, and retain it in his memory. For thus it will happen, that gradually by fear he may be obliged to consider, what he does. It is also serviceable in this disorder to be put into sudden consternation and fear; and the same tendency commonly has every thing, that disturbs the mind greatly; for some change may be brought about, when the mind is withdrawn from that state, in which it was before. It likewise makes a difference, whether the patient laugh now and then without cause, or be sorrowful and dejected. For the merriment of a mad person is better cured by those terrours, which I mentioned above. If sadness be his extreme, gentle, but long friction twice a day is useful; also pouring of cold water upon the head, and dipping the body in water and oil.

The following are general rules: that mad people ought to be strongly exercised; to make much use of friction; to take neither fat flesh nor wine; to take food, after purging, of the middle kind, and as light as possible; that they should neither be alone, nor amongst strangers, nor those which they either despise, or look upon with indifference: they ought to go into other countries, and, if their judgement returns, to take a journey into distant parts once a year.

Sometimes, though seldom, a delirium arises from fear; which kind of madness is of a similar species, and is to be cured by a like diet: except that in this kind of madness alone wine is properly given.

CHAP. XIX.

OF THE CARDIAC DISORDER AND ITS CURE.

That kind of distemper, which by the Greeks is called cardiacus[BH], is directly contrary to the last mentioned; although phrenitic people often fall into it: for the mind in that is disordered, in this it is sound. This is nothing else but an excessive weakness of the body; which from a languishing stomach is dissipated by immoderate sweating. And one may immediately know that this is the disease, when the pulsations of the arteries are small and weak, and sweat uncommon both in degree and continuance, breaks out from the whole breast, and neck, and even from the head, the feet only and legs being more dry and cold. This distemper is of the acute kind.

The first step in the cure is to apply restringent cataplasms to the præcordia; the second to restrain the sweat. That is accomplished by bitter oil, or that of roses, or quinces, or myrtles. With any of these the body is to be gently anointed; and then a cerate of some one of them is to be applied.

If the sweat nevertheless prevails, the person is to be rubbed over with gypsum, or litharge, or Cimolian chalk, or to be sprinkled now and then with the powder of these. The same purpose is answered by the powder of dry myrtle or bramble-leaves, or the dried lees of austere and strong wine. And there are a great many more things of the same nature, which

if they cannot be had, sprinkling of common dust will have a good effect. And besides these, that the body may sweat less, the person ought to be covered with a light garment, and set in a place not hot, with the windows open, so that he may be even sensible of the stream of air.

The third remedy is to succour the weakness of the patient by eating and wine. Food is not to be given in great quantity indeed, but often, both in the night and day; so as it may nourish, and not load. It ought to be of the weakest kind, and agreeable to the stomach: and unless there be a necessity, we ought not to be in haste to give wine. If there is reason to fear the person is fainting, then both intrita with wine, and wine itself, austere but small, and somewhat diluted, with the cold taken off it, may be given pretty frequently and freely; with the addition of polenta(20), provided the patient takes little food. And the wine ought to be neither very weak nor very strong: and the patient in a day and a night may very well drink two or three heminæ; if it be a person of a large make, even more: if he has no appetite for food, it is fit first to anoint him, then to pour cold water all over him, and then give it him.

But if his stomach be so relaxed, that it hardly retains, both before meat and after it, he ought to vomit spontaneously(21); and again after vomiting to take food. If even that do not stay, to sup a cyathus of wine, and at the distance of an hour to eat again. If the stomach return that too, the whole body must be rubbed over with bruised bulbous roots(22): when these have grown dry, the effect is, that the wine may be retained in the stomach, and from that, the

heat may return to the whole body, and the tone of the vessels be restored.

The last remedy is to inject by way of clyster(23) the cream either of ptisan or alica, for that also will support the strength. Nor is it amiss to hold something refreshing, such as rose oil and wine, to the nose of the person, when he is restless and hot: and if there is any coldness in the extremities, to cherish them with hands anointed and warm. By which means if we have been able to gain these points, that the violence of the sweat abates, and life is prolonged, time itself now begins to work a cure. When he seems to be out of danger, yet we must be cautious, that he do not relapse quickly into the same weakness. Therefore omitting only the wine, he ought every day to take more substantial food, till his body recover sufficient strength.

CHAP. XX.

OF THE LETHARGY, AND ITS CURE.

There is also another distemper, which in a different way is opposite to the phrenitic one. In phrensies sleep is hardly obtained, there is a disposition to fool-hardy enterprises: in this there is a languor, and an almost invincible necessity of sleeping. The Greeks call it lethargus[BI]. This too is of the acute kind, and unless it is cured, kills quickly.

Therefore some endeavour to rouse such patients by holding to *their nose* those things, which provoke sneezings, and such as excite by their offensive smell; for instance, burnt pitch, sordid wool, pepper, hellebore, castor, vinegar, garlick, onion. They also burn galbanum by them, or hartshorn; if this is not to be got, any other horn; for when these are burnt, they stimulate by their offensive smell.

But a certain *author*, Tharrias, affirmed, that this disposition to sleep is concomitant upon a *febrile* paroxysm, and that it abates, when the latter is gone off: and therefore that such practitioners, as rouse them frequently, give them unnecessary pain. Now it makes a considerable difference whether the patient awakes upon the termination of the fit, or whether the weight of sleep oppresses him, when the fever is abating, or even after its going off. For if he awakes, it is needless to treat him as one asleep: for he is not made better by being awake; but if he be better, he will keep awake of himself. If his sleep is continual,

he must in such a case be roused; but at those times, when the fever is lowest, that he may discharge somewhat, and take food. Cold water suddenly poured on excites more powerfully than any thing. After the remission therefore the whole body must be anointed over with a great quantity of oil, and three or four amphorae of water must be poured upon the head, so as to stream over all the body. But this we shall make use of, if the patient's breathing be equal, if the præcordia be soft. But if the case shall be different, the other remedies are preferable, which were mentioned before. And as to the sleep, this method is the most suitable.

With regard to the cure *of the distemper*, the head must be shaved; then fomented with a decoction of bay-leaves, or of rue in vinegar and water. And the day after, castor must be applied, or rue bruised with vinegar, or bay-berries, or ivy with rose-oil and vinegar. And mustard is of singular use, both held to the nostrils in rouzing the patient, and if applied to the top of the head or forehead, in removing the distemper itself. Gestation is also useful in this distemper, and especially food seasonably given, that is, in the greatest remission, that can be found. Now gruel is most proper till the distemper begins to decline. And if every day there is a severe fit, this may be given daily: if every other day, gruel after the most severe; after the milder hydromel. Wine also given with seasonable food is of no small use.

But if such a torpor has come after long fevers, all the other rules are to be observed: but three or four hours before the fit, if the belly be bound, castor with a mixture of scammony must be given; if that is

not the case, castor alone must be given with water. If the præcordia are soft, the diet must be pretty full; if hard, we must keep to the gruels above-mentioned; something being applied to the præcordia, which can at once repel and soften.

CHAP. XXI.

OF THE SEVERAL SPECIES OF THE DROPSY AND THEIR CURE.

The foregoing is an acute distemper; but the case of those, who are troubled with water under the skin, may turn to a chronical disease: for unless it is speedily cured, such patients fall into what the Greeks call hydrops[BJ] (*dropsy*). There are three species of it; for at times the belly is very tense, and there is a frequent rumbling within from the motion of the air: sometimes the surface of the body is unequal, with tumours of different sizes rising over the whole: sometimes water is confined within the abdomen, and upon the body's being moved, it moves in such a manner, that the course of it may be seen. The first the Greeks call tympanites[BK]; the second leucophlegmatia, or hyposarca[BL]; the third ascites[BM]. An excess of moisture however is common to them all: for which reason ulcers in such patients are not easily healed. This disease often begins of itself; and often succeeds another distemper of long standing, and especially a quartan.

It is more easily cured in slaves, than in free people; because as it requires fasting, enduring of thirst, and a thousand other hardships, and long patience, such are more readily relieved, that are easily commanded, than those, whose liberty is hurtful to them. But even those, that are under the authority of another, if they cannot entirely command themselves, are not to be recovered. And upon this

account no inconsiderable physician, a disciple of Chrysippus, residing with king Antigonus, declared that a certain friend of that prince, of known intemperance, though not very ill of this disease, could not possibly be cured: and when another physician, Philip of Epirus, undertook to cure him, he answered, that the other considered only the distemper of the patient; he, his dispositions. And he was not deceived; for though he was watched with the greatest diligence not only by the physician, but even by the king too, yet by devouring his malagmas(24), and drinking his own urine, he quickly killed himself.

However at the beginning the cure is not very difficult, if rest, thirst, and fasting be strictly enjoined. But if the disease has continued long, it is not removed without great trouble. Yet they tell us, that Metrodorus, a disciple of Epicurus, when he was afflicted with this distemper, and could not patiently endure the necessary thirst, after refraining long, used to drink, and then vomit it again. Now if whatever has been taken, be brought up again, it lessens the uneasiness considerably: if it is retained in the stomach, it increases the disorder; therefore it must not be attempted in every one.

But if it be attended with a fever, that in the first place must be removed by such means as have been prescribed for the cure of that distemper. When the patient is free of a fever, then we may apply the usual remedies of the dropsy. And with regard to this, whatever species it is, if it has not got too deep root, the very same remedies are necessary. The person must walk much, run sometimes, and his

superior parts especially must be rubbed, so as to bring a warmth into the skin. In the mean time he must keep in his breath. Sweat is likewise to be procured, not by exercise only, but also by hot sand, or the laconicum, or clibanum, and such like means: and natural and dry sweating places are very beneficial: such as we have at Bajæ amongst the groves of myrtles. The bath and all moisture is hurtful. Catapotia(25), composed of two parts of wormwood and one of myrrh, are properly given to the patient fasting.

The food ought to be of a middle nature, but of the harder kind of it. No more drink given than to support life: and that is best, which provokes urine. It is better to attempt that by diet(26), than medicine. However, if there is a necessity, some of the things, which have that effect, must be boiled, and the decoction of them given to drink. This faculty seems to be possessed by the iris, nard(27), saffron, cinnamon, cassia, myrrh, balsam(28), galbanum, labdanum, flower of the wild vine, panaces(29), cardamom(30), ebony, cypress seed, stavesacre, which the Greeks call staphis agria[BN], southernwood, rose-leaves, acorum(31), bitter almonds, goat's marjoram, storax, costus, the flower of long and round cyperus(32); the first of these the Greeks call cyperus[BO], and the other schœnus[BP]. Whenever I mention these, I intend not such as grow here, but those that are imported amongst the spices. However the mildest of these must be tried first, that is the rose-leaves, or spikenard. Austere wine also, but very weak, is good.

It is convenient likewise to measure the belly every

day with a thread, and to put a mark upon this, where it meets: and each succeeding day to observe, whether the bulk be enlarged or diminished; for that which lessens, feels the effect of the medicine. And it is not improper to measure the patient's drink, and his urine; for if more moisture is excreted, than is taken, in such a case there is hope of recovery. Asclepiades tells us in his writings, that to a person, who had fallen into a dropsy after a quartan, he prescribed abstinence for two days, and friction; on the third he gave him food and wine, finding him free both of the fever and dropsy. Thus far general rules may be laid down for all the species of the distemper: if the malady rises to a greater height, different methods of cure are required in each.

Wherefore if there is a flatulency, and from that frequent pain, a vomit after meat every day, or every other day, is of service. After that dry and warm fomentations must be used. If the pain is not removed by these means, cupping without scarification is necessary. If the pain does not even yield to that, the skin must be cut, and the cucurbitals applied again. The last remedy, if the cupping has done no service, is to inject into the belly plenty of warm water, and to take it back again. Moreover it is necessary to make use of friction three or four times a day, with oil and some heating medicines. But in this friction the belly must be avoided; mustard must be applied to it frequently, till it corrode the skin; and several ulcers must be made in the belly with hot irons, and these kept open for some time. Boiled squils also bound upon the skin(33) are good. But for a long time after these

flatulencies all windy food must be avoided.

But if the distemper be what is called leucophlegmatia, it is fit to expose the swelled parts to the sun; but not too much, lest it inflame the fever. If the sun is too powerful, the head must be covered, and friction made use of, the hands being only moistened with water mixed with salt, and nitre, and a little oil; and that by the hands either of a child or a woman, as their touch is softer: and if the strength will allow, it may be continued a whole hour in the forenoon; in the afternoon for half an hour. Restringent cataplasms also are good; especially if the body be pretty tender. An incision must likewise be made on the inside of the leg, about four fingers breadth above the ancle; from which for some days a good quantity of water may be discharged, and it is proper also to make deep gashes in the tumours: and the body must be well agitated by frequent gestation; and when the wounds are cicatrized, the exercise and food must be increased, till the body return to its former habit. The food ought to be strong and glutinous, and chiefly flesh. The wine pretty sweet, if the stomach will bear it; but in this course, that alternately for two or three days together, sometimes water and sometimes wine be drunk. It is proper also to give the seed of sea spurge, which grows large near the sea, to drink with water. If the person be strong, boiled squills may be tied upon his belly at the same time. And many authors advise, that the tumours be beat with inflated bladders.

But if the disease be of that kind, in which there is a large collection of water within the abdomen, it is fit

to walk, but more moderately; to keep a discutient malagma applied to the part, with a triple cloth above it, and to bind it on with a roller, though not too tight. Which practice, introduced by Tharrias, I observe is still continued by the greatest number of physicians. If it is evident, that the liver or spleen is affected, it is proper to apply over it a mellow fig bruised, with the addition of honey. If by such remedies the belly is not dried, but the water notwithstanding abounds, a more speedy method must be taken to relieve, that is, to discharge it by the belly itself. Nor am I ignorant, that Erasistratus disapproved of this method of cure: for he imagined this to be a distemper of the liver; and therefore that means should be used to restore that part to a sound state, and that it was to no purpose to draw off the water, which, while that bowel is distempered, Would be presently collected again. But in the first place, this bowel is not only the seat of this disease: for it arises both in the case of an affected spleen, and a bad habit of the whole body. And secondly, supposing it to have begun thence, yet unless the water be discharged, which stagnates there preternaturally, it hurts both the liver and the other internal parts. And it is granted, that care should be taken nevertheless to cure the whole body. For discharging of the water does not work a cure, but makes room for the operation of medicine, which that obstructs, while it remains there. Neither does this admit of any dispute, that all in this disease are not to be thus treated: but robust young men may, who are either entirely free of a fever, or at least have pretty long intermissions: for those, who have a

vitiated stomach, or have fallen into this disorder from the atrabilis, or those, who are in a bad habit of body, are not fit subjects for this treatment. On the day, that the water is first discharged, giving of food is improper, unless the patient feels a want of strength. In the following days indeed wine not much diluted ought to be given, but not in a large quantity, and the patient must be again gradually accustomed to exercises, frictions, the heat of the sun, sweatings, fatigues, and proper food, till he be entirely well. The case requires seldom bathing, and frequent vomits when fasting. If it be the summer-time, it is proper to swim in the sea. For a long time after his recovery venery is hurtful.

CHAP. XXII.

OF THE SEVERAL KINDS OF CONSUMPTION AND THEIR CURE.

A consumption is a distemper often of longer continuance, and attended with greater danger. And of this also there are several species. One of them is, where the body is not nourished, and as something is naturally always flying off, and nothing comes in to supply its place, the person becomes extremely emaciated, and unless it be removed, it proves mortal. This the Greeks call atrophia[BQ]. It commonly proceeds from one of two causes: for one man through excessive fear takes less, another from too great voraciousness takes more food, than he ought to do: so that either the defect of aliment weakens, or what is redundant is corrupted.

There is another species, which the Greeks call cachexia[BR], where the habit of the body is bad, and therefore all the aliments are corrupted: which commonly happens, when bodies depraved by a long distemper, although they have got quite rid of it, yet do not receive any recruit; or when the body has been disordered by bad medicines; or when one has long wanted the necessaries of life; or has made use of victuals to which he is not accustomed, and bad, or from some such accident. In this last case besides the consumption it sometimes happens, that the skin is exasperated with frequent pimples(34), or ulcers, or some parts of the body swell.

The third and by far the most dangerous species is that, to which the Greeks give the name of phthisis[BS]. It generally takes its rise from the head(35): and thence falls down upon the lungs. From this an exulceration proceeds, and there comes a slight fever, which, although it may have abated, yet returns; in this also there is a frequent cough, and pus expectorated, and sometimes something bloody. Whatever comes up, if it be thrown upon the fire, has a bad smell. Therefore those, that are doubtful of the distemper, try it by this mark.

As these are the several species of a consumption, it is necessary first to consider, which of them is the disease of the patient. Then if it appears, that the body is only not supplied with nourishment, to attend to the cause of that; and if the person has taken less food, than he ought to have done, it is proper to make an addition: but gradually, lest, if he overload the body unaccustomed to it by too great a quantity at once, the stomach be oppressed, and and that retard concoction. If a person has been used to take more than what was proper, he should fast for one day; then begin with a little food; making every day some small addition, till he come to a just measure. It is like-wise proper to walk in places as cold as possible, and avoid the heat of the sun; to use those exercises, which employ the hands: if he is weaker, to use gestation, unction, and friction, by his own hands rather than other if he be able, frequently in the day, both before meat and after it; and sometimes to add some of the warming medicines to the oil, till he sweats. It does service too when he is fasting to take hold of his skin in many parts, and to

draw it out, that it may be relaxed; or to do the same by often impressing a bit of resin upon it, and quickly pulling it away again. Bathing also is sometimes good, but after a small meal; and even in the bath itself, some food is properly given; or if without the bath friction has been used, it may be immediately after. The food ought to be of that kind, which is easily concocted and most nourishing. Therefore the use of wine also, but austere, is necessary to promote urine.

But if the habit of the body is bad, the first thing to be done is to fast; then a clyster must be administered; next we should give food, adding exercises, unctions, and frictions. Frequent bathing is more beneficial to such, but when they are fasting, even till they sweat. Their diet should be plentiful and varied, of good juices, and such as does not very easily corrupt, and austere wine. If these methods do not relieve, blood must be let; but by small quantities, and every day for some days together, the other rules above laid down being also observed.

But if the distemper is more violent, and there is a true phthisis, it is necessary to oppose its beginnings: for if this distemper continue long, it is not easily overcome. If the patient's strength allow, he must take a long voyage, change his climate, taking care to remove into a grosser air, than that he leaves; and therefore from Italy to Alexandria is a very agreeable change. And generally at the beginning the body may be well supposed able to stand that fatigue, since this distemper generally comes on at the strongest age, that is, from the eighteenth year to the thirty-fifth. If the weakness will not admit of that, it

is very proper however to sail in a ship, but not far. But if any circumstance render the sailing unfit, the body must be moved in a litter or some other way; then business must be laid aside, and every thing, which disturbs the mind; sleep must be indulged; catarrhs avoided, lest they exasperate, what may have been mitigated by care; and for that reason crudity must be guarded against, and at the same time both the heat of the sun and cold, the face defended, the throat wrapped up, and the cough removed by its peculiar remedies. And as long as the fever continues to attack, it must be treated sometimes by abstinence, sometimes also by seasonable food: and at such time water must be drunk. Milk likewise, which is poison in pains of the head, and acute fevers, and excessive thirst, occasioned by these, and when the præcordia are swelled, or the urine is bilious, or in hæmorrhages; yet in a phthisis, as well as in all tedious and obstinate febriculas, it may very well be given.

But if a fever does not yet come on, or has already remitted, recourse must be had to moderate exercise, and especially walking and gentle friction. The bath is hurtful. The food at first ought to be pungent, such as garlick, leeks, and the same in vinegar, or in the same way endive, basil, lettuce; afterwards mild, as gruel(36) made from ptisan, or alica, or from starch, with the addition of milk. Rice also, and, if there is nothing else, far will answer the same end. Then these two sorts of food are to be alternately used; and something of the middle kind is to be added, and especially brains(37), and small fish, and such like. Flour also mixed with mutton or goat's suet, and

boiled, serves for a medicine. Wine ought to be taken light and austere.

Thus far the distemper is combated with no great difficulty. If it is more grievous, and neither the fever nor the cough abate, and the body appears to be wasting, there is a necessity for more powerful remedies. An ulcer must be made with a hot iron in one place under the chin, another in the throat, two at both breasts, and under the extremity of the blade-bones, which the Greeks call omoplatæ[BT]; and these ulcers must not be allowed to heal, unless the cough should cease: which, it is plain, must also require a distinct method of cure. Then the extremities are to be brushed briskly three or four times a day; the chest must be rubbed gently with the hand; after meat, at the interval of an hour, the legs and arms must also be rubbed. After ten days the patient is to be put into a bath consisting of warm water and oil. On the other days he is to drink water; at that time wine must be given to drink cold, if the cough is gone; if it is not, with the cold taken off. It is proper also in the remissions to give food every day; to make use of friction and gestation in like manner; on the fourth or fifth day to take sometimes the blood herb with vinegar, or to eat plantain. The juice of plantain alone, or that of horehound boiled up with honey, is a remedy; of the first of which a cyathus may be supped, and a spoonful of the other may be licked at times; or one part of turpentine, and another of butter and honey, mixed together and boiled. But the most material of all these things, are the diet, gestation, sailing, and gruel. A loose belly is particularly to be avoided. A frequent vomiting in

this distemper, and especially of blood, is pernicious. When a person begins to grow a little better, he ought to increase his exercises, friction and food; and then keeping in his breath to rub himself; to abstain long from wine, the bath, and venery.

CHAP. XXIII.

OF THE EPILEPSY AND ITS CURE.

Amongst the best known distempers is that, which is called comitial(38), or the greater. A man falls suddenly down, foams at the mouth; then after some time returns to himself, and rises of his own accord. This disorder more frequently attacks men than women; and it commonly continues long, even to the dying day, and is not dangerous to life. Sometimes however, when it is recent, it kills a person; and if it has not been removed by remedies, it is often cured in boys by their first venereal liberties, in females by the first appearance of the menses. Sometimes a person falls down with a convulsion of the limbs or nerves, sometimes without it.

Some endeavour to rouze these by the same means as lethargic people; which is quite needless: both because even a lethargic person is not cured by this method; and because he may never awake, and thus perish for want, whereas the other returns to himself.

When one falls down, if *the fit* be not attended with a convulsion, blood ought to be let immediately: if it is, that is not to be done, unless other circumstances also encourage it. But it is necessary to give clysters, or to purge with black hellebore, or to do both, if the strength will allow; then to clip the hair of the head *close*, and anoint it over with oil and vinegar; to give food the third day after, as soon as the hour, at which the patient fell down, is past. Neither are

gruels, or victuals otherwise soft and easy of digestion, or flesh, and least of all pork, fit for such persons; but diet of the middle kind: for the case requires strength; and crudities are to be guarded against. At the same time they should avoid the heat of the sun, the bath, fire, and every thing heating; also cold, wine, venery, the sight of a precipice, and every thing that terrifies, vomiting, lassitude, anxieties, all business; and when food has been given on the third day, they should intermit the fourth, and so on every other day; observing the same hour for food for fourteen days. When the distemper has proceeded so far, it has lost the force of an acute one; and if it continues, it must be treated as a chronic.

But if a physician has not been called on the day, that the person first fell, but has a man recommended to his care, who is already used to these falling fits; first of all the regimen above prescribed being followed, the day is to be expected, on which the fit may return: and then either bleeding must be used, or a clyster, or black hellebore, as has been already directed. Then in the following days, he is to be nourished by the food mentioned before, omitting all such as I said were to be avoided.

If the distemper should not be removed by these means, recourse must be had to the white hellebore; and that must be used three or four times, at the distance of a few days betwixt doses; provided however that he never repeat it, unless the fit have recurred. On the intermediate days his strength must be supported by adding some other things to those, which have been mentioned before. When he has waked in the morning, his body may be gently

rubbed over with old oil, excepting his head and belly; then let him take a walk, as long and as straight as possible; after the walk let him be rubbed, in a tepid place briskly and long, and not less than two hundred times; unless he be infirm; then let a good quantity of cold water be poured over his head; let him eat a little; and rest; take a walk again before night; be briskly rubbed a second time, without touching either his belly or head; afterwards let him take supper, and with intervals of three or four days, let him for a day or two together make use of a pungent diet.

If the patient should not be cured even by these means, let his head be shaved, anointed with old oil, adding to it vinegar and nitre, and salt water poured upon it; when he is fasting, let him drink castor and water; make use of no water for drink, unless it has been boiled. Some have cured themselves of such a disorder by drinking the warm blood of a gladiator slain. With such people a miserable remedy is rendered tolerable by a more miserable distemper. As to the assistance of medicine, the last remedy is to let a little blood from both legs near the ancle; to make an incision on the back of the head, and apply cucurbitals; with a hot iron also to make an eschar in two places, in the back of the head, and below, where the first vertebra is joined to the head; that by these the noxious humour may be discharged. If by this method the distemper has not been removed, it will probably continue for life. To alleviate it, exercise must only be used, and such food, as has been directed above; and especially every thing avoided, against which we have given cautions.

CHAP. XXIV.

OF THE JAUNDICE AND ITS CURE.

The distemper is equally known, which is called sometimes arquatus(39), sometimes regius. If this comes on after the seventh day of a fever, Hippocrates pronounces the patient to be safe, provided only the præcordia be soft. Diocles declares without reserve, that if it comes after a fever, it even does good; if a fever follows it, it is mortal. Now this distemper is discovered by the colour, especially of the eyes, in which, what ought to be white, becomes yellow. And it is generally attended by a thirst, pain of the head, frequent hiccough, hardness of the præcordia on the right side; and upon violent motion, a difficulty of breathing, and relaxation of the limbs: and when the distemper continues long, the whole body turns white, with a certain sickly paleness.

For the first day it is proper to enjoin the patient to abstinence; on the second to give a clyster; then if there is a fever, to remove it by proper diet; if there is not, to give scammony to drink, or white betes shred in water, or in hydromel bitter almonds, wormwood, anise, but of the last the smallest quantity. Asclepiades ordered also the drinking of salt water, and that for two days, with an intention to purge, rejecting the use of diuretics. Some omitting the former, by the latter and extenuating diet affirm they obtain the same purpose.

For my part if there be sufficient strength, I prefer the stronger medicines; if but little, the weaker remedies. If the patient has been purged, after that it is fit for the three first days to eat sparingly food of the middle kind, and drink Greek salt wine, that the belly may continue lax; then for other three days to eat more substantial food and some flesh too; and hold to the use of water for drink; then to return to the former diet, only eating more freely of it; and omitting the Greek, to drink black austere wine; and vary this course by using sometimes acrid food, sometimes returning to the salt wine. But through the whole time exercise and friction must be used, and if it be winter, the bath, if summer, swimming in cold water; a bed and room elegant, company, place, diversions, frolicks, and every thing else, that has a tendency to exhilarate the mind: upon which accounts it seems to be called the royal distemper. A discutient malgama also applied to the præcordia has a good effect; or a dry fig laid on there, if the liver or spleen be affected.

CHAP. XXV.

OF THE ELEPHANTIASIS, AND ITS CURE.

That distemper, which the Greeks call elephantiasis[BU], is almost entirely unknown in Italy, but in some countries is very common, and is ranked amongst the chronic kind. The whole body is affected with it in such a manner, that even the bones are said to be spoilt. Upon the surface of the body are spots and tumours. Their redness by degrees degenerates into a black colour, the skin is unequally thick and thin, hard and soft, and is roughened with something resembling scales, the body wastes, the face, legs, and feet swell. When the distemper is inveterate, the fingers and toes are hid under the swelling; a slight fever comes on, which easily destroys the person sunk under so many maladies.

Wherefore without delay, at the beginning of the disease, blood ought to be let two days successively; or the belly purged with black hellebore. For three days the person should fast, or eat no more than is necessary to support him; then the strength is to be recruited a little, and a clyster administered. After that, when he is somewhat relieved, exercise must be used, especially running; sweat must be procured, first by pure labour, and then by dry sweating-rooms; friction applied; but these with such moderation, that the strength may be preserved; bathing should be rare; the food without any thing fat, or glutinous, or flatulent. It is fit to allow wine, but not in the first

days of the disorder. Plantain bruised and rubbed upon the body seems to be an excellent defence for it.

CHAP. XXVI.

OF APOPLECTIC PATIENTS, AND THEIR CURE.

In this country we *sometimes*, *though* rarely see apoplectic people, who are stupified both in body and mind. It happens sometimes from being thunderstruck, sometimes from a distemper. The last case the Greeks call apoplexia[BV]. Such people must be bled. And either white hellebore be made use of, or a clyster given. Then friction is to be applied; and food taken of the middle kind, by no means fat; some of the acrid kinds too; and wine must be refrained.

CHAP. XXVII.

OF THE PALSY, AND ITS CURE.

But a relaxation of the nerves is a distemper every where common. But sometimes it attacks the whole body, sometimes particular parts. Ancient authors called the first apoplexia, the other paralysis: now I observe the name of paralysis is given to both. And it is common for those, who have all their limbs extremely relaxed, to be quickly carried off. And if they are not snatched away, they live indeed for some time, but yet seldom recover their health; and for the most part draw out a miserable life, with the loss of their memory too. When it is partial, it is sometimes an acute distemper, often chronic, generally incurable.

If all the limbs are greatly affected, bleeding either kills or cures. Any other method scarcely ever restores health; often only delays death; in the mean time renders life uneasy. After bleeding, if both motion and the judgment don’t return, there is no hope left: if they do return, there is a prospect of recovery.

But where a particular part is relaxed, either blood is to be let, or a clyster administered, according to the strength of the body and the distemper. All the other methods to be pursued are the same in both cases. For the principal thing is to avoid cold: and the patient must return gradually to exercise, so as immediately to apply to walking, if he can. If the

weakness of his legs be too great for that, he may either use gestation, or be agitated by moving his bed *to and fro*: then that member, which is diseased, may be moved of itself if possible; if that cannot be done, let another person move it, and so return it to its ordinary habit by a kind of force. It does good also to irritate the skin of the benumbed limb, either by beating it with nettles, or keeping mustard upon it, till the part begins to grow red; when they may be removed. Bruised squills likewise, or bulbous roots bruised with frankincense, are proper applications. Neither is it amiss, to vellicate the skin with resin for some time every third day, and that in several places; and sometimes to make use of cupping without scarification. Old oil is fittest for unction, or nitre mixed with vinegar and oil. Further, it is highly necessary to foment with warm sea-water; or if that is not to be got, with salt-water at least. And if any where there is a natural or artificial place for swimming in this kind of water, by all means to make use of it; and the limbs, which are most disordered, are to be principally agitated there. If that conveniency cannot be had, nevertheless the bath is useful. The food ought to be of the middle kind, and chiefly venison; the drink warm water, without wine. But if the distemper is of long standing, Greek salt wine may be given as a purge every fourth or fifth day. A vomit after supper is good.

Of pain of the nerves.

Sometimes there occurs also a pain of the nerves. In

this case it is not convenient, either to vomit, or promote urine by medicines, or sweats by exercise, a practice advised by some *physicians*. Water must be drunk twice a day. The body must be rubbed all over gently in bed for a pretty long time; then the upper parts especially are to be moved, keeping in the breath even in the time of the exercise. Bathing must be seldom practised. The air must be changed now and then by travelling. If there is a pain in any part, it must be anointed with nitre and water without oil, then wrapped up, and a small quantity of live coals with sulphur held below it; and thus it is to be fumigated; and this is to be continued for some time, but when the patient is fasting, and after he has concocted well. Cucurbitals also are to be often applied to the part pained, and the same place is to be beat gently with inflated ox-bladders. It is good also to mix suet with the powdered seed of cummin or nettle, in equal quantities, and apply that; to foment with a decoction of sulphur in water. Bottles filled with warm water are also proper to be clapped on, or bitumen mixed with barley. Violent gestation must be used, especially in the very article of the pain, which in other pains is very pernicious.

Of a tremour of the nerves.

A tremour of the nerves is equally increased by vomiting, and diuretic medicines. The bath and dry sweatings also are hurtful. Water must be drunk; the patient must walk briskly, also anoint, use friction, chiefly performed by himself; his superior parts must be opened by playing at the ball and the like

exercises. He may take any food he chuses, only consulting the concoction. After meat he must avoid cares; make very little use of venery. If at any time he falls into that, after it he ought to be rubbed for a long time in his bed with oil, by the hands of a boy rather than a man.

Of internal suppurations.

As for suppurations(40), which happen in any internal part, when they begin, our first business is to endeavour by repellent cataplasms to prevent a hurtful collection of matter; and then, if these have no effect, to disperse it by discutient malagmas. If we fail in that, it follows that it be encouraged; next, that it be maturated. And then the end of every vomica is, that it breaks; and the symptom of this is an evacuation of matter, either by the mouth or anus. But nothing ought to be done, by which a full discharge of the pus may be prevented. Gruels and warm water must be chiefly used. When the pus has ceased to be discharged, we are to change to such food, as is indeed of easy *concoction*, but yet more substantial and cold; also cold water, but beginning with taking the cold off both: and at first some things may be eaten with honey, as pine-nuts, or sweet almonds, or hazel-nuts. Afterwards even the honey must be omitted, that a cicatrix may be the sooner formed. At that time the proper medicine for the ulcer is taking the juice of leeks or horehound, and adding leeks to every meal. It will be convenient also to use frictions in those parts, that are not affected, and gentle walks. And care must be taken not to

irritate the healing ulcers either by struggling or running, or any other means; for in this distemper, a vomiting of blood is destructive, and therefore by all means to be guarded against.

A. CORNELIUS CELSUS

OF

MEDICINE.

BOOK IV.

CHAP. I.

OF THE INTERNAL PARTS OF THE HUMAN BODY.

Thus far we have spoken of those kinds of distempers, which so affect the whole body, that no certain seats can be assigned to them: I shall now treat of those which belong to particular parts. Now the diseases of all the internal parts, and their method of cure will be more easily understood, when I shall have first given a short description of the parts they afflict.

The head then and what is contained in the mouth are bounded not only by the tongue and palate, but by the external parts, which lie exposed to view. On

the right and left side about the throat are large veins, which are called sphagitides[BW]; and arteries, named carotides[BX], running upwards, which reach beyond the ears. And in the neck itself are placed small glands, which sometimes swell, and are painful. Then two passages begin: one of which is called the aspera arteria, or wind-pipe; the other the gullet. The wind-pipe is more external, and goes to the lungs; the gullet more internal, and leads to the stomach. The former receives the breath, the latter the food. Their courses being different, where they meet there is something like a small tongue(1) in the wind-pipe at the entrance of the fauces: when we breathe this stands erect; when we take meat or drink, it shuts the wind-pipe. Now the wind-pipe being hard and cartilaginous, is prominent in the throat; and elsewhere falls back. It is composed of certain circles formed like the vertebræ in the spine, yet so, that it is rough on the external part, on the internal smooth like the gullet; and thus descending to the præcordia it is connected with the lungs: these are of a spongy nature, and therefore capacious of air; and behind being joined to the spine, they are divided into two lobes like an ox's hoof. With these the heart is connected, being muscular, situated in the thorax under the left breast: and it has what we may call two ventricles. But under the heart and lungs is the transverse septum, consisting of a strong membrane equally nervous, which divides the abdomen from the præcordia, many vessels also being dispersed over it: it separates from the superior parts not only the intestines, but the liver and spleen too. These bowels are next to it, but placed below it,

the one on the right side, and the other on the left. The liver having its origin under the præcordia from the very septum itself, on the inside is concave, and the outside gibbous. This projecting rests gently upon the stomach, and is divided into four lobes. On the lower part, the gall-bladder adheres to it. But in the left side the spleen is not connected with the septum, but to an intestine; it is of a soft and loose texture, of a moderate length and thickness; and this proceeding a little beyond the region of the ribs into the abdomen, is chiefly covered by them. And these indeed are joined. But the kidneys are divided: which adhere to the loins below the last ribs(2), and the sides next these are round, on the other they turn inward; they are both stocked with vessels, and covered over with coats(3). These then are the situations of the bowels. But the gullet, which is the beginning of the intestines, arises nervous from the seventh vertebra of the spine, and about the præcordia is united with the stomach. The stomach, which is the receptacle of food, consists of two coats, and is placed betwixt the spleen and liver, each of these going a little over it. There are also some fine membranes, by which these three are connected together, and are joined to the transverse septum above-mentioned. After that the lower part of the stomach turning a little to the right side grows narrower, till it meet the first intestine. This juncture the Greeks call pylorus[BY]; because like a gate it emits into the lower parts, what we are to discharge by excrement. There begins the intestine jejunum, not much folded: this name is given to it, because it never retains what it has received; but immediately

transmits it into the lower parts. Next to this, is the smaller intestine, very much folded into sinuses: each of whose rings are by small membranes connected with the more internal, which being turned toward the right side, and ending at the right hip, yet fill more the superior parts. Then this intestine is joined with another thicker, and running across; which beginning on the right side, towards the left is open and long; to the right is not so; and therefore it is called cæcum. But that, which is open, is of large compass and sinuous, and less nervous than the former intestines, on both sides rolled different ways, but occupying more of the left and lower parts, it touches the liver and stomach: then it is joined with some small membranes, that come from the right kidney; and there turning to the right, it is directed downward, where it discharges the excrements: and therefore at that place it takes the name of the intestinum rectum. All these parts are covered by the omentum, which on the lower part is smooth and contracted, and on the upper softer. Fat also grows to it, which like the brain and marrow is insensible. From each kidney proceeds a tube of a white colour to the bladder; the Greeks call them ureteres[BZ], because by them they believe the urine to be distilled into the bladder. The bladder in its sinus is nervous and double; in the neck full and fleshy, and joined by veins to the intestine and to that bone, which is under the pubes: itself is loose, and more at liberty. It is differently placed in men and in women: for in men it is close to the intestine rectum, rather inclined to the left side: in women it is situated above their genital parts, and as it hangs, is sustained

by the womb. Then in men the passage of the urine is extended longer and narrower from its neck to the penis: in women it is shorter, and wider, and shows itself above the neck of the womb. Now the womb in virgins is very small: in women, when not pregnant, not much larger, than to be held in the hand. It begins with a straight and small neck, which is called the vagina[CA], in a line with the middle of the belly, then is turned a little to the right hip; then mounting above the intestine rectum, its sides are connected to the ilia of the woman. The ilia are situated betwixt the hips and pubes in the lower belly. From which and the pubes the abdomen reaches upwards to the præcordia; on the external side the skin appears; on the inside it is lined by a thin membrane, which is joined to the omentum, and is called by the Greeks peritonæum[CB].

CHAP. II.

OF THE DISORDERS OF THE HEAD, AND THEIR CURE.

Having as it were presented these parts to view, as far as it is necessary for a physician to know them, I shall proceed to the remedies of the disorders of each, beginning with the head: under which name I now intend that part, which is covered with hair: for pains of the eyes, ears, and teeth, and such like, will be treated of elsewhere.

Of pains of the head, and a hydrocephalus.

Now in the head there is sometimes an acute and dangerous distemper, which the Greeks call cephalæa[CC]. The marks of which are a strong shuddering, relaxation of the nerves(4), dimness of the eyes, delirium, vomiting, and withal a suppression of the voice; or an hæmorrhage from the nose, and with that a coldness of the body, and fainting; besides these an intolerable pain, especially about the temples, or occiput. Sometimes too there is a long weakness of the head, but neither severe nor dangerous, through the whole life. Sometimes the pain is more violent, but short, yet not fatal; which is contracted either by drinking wine, or crudity, or cold, or heat of a fire or the sun. And all these pains are sometimes accompanied with a fever, and sometimes not: sometimes they afflict the whole

head, at other times a part of it; sometimes the pain extends to a contiguous part of the face. Besides these there occurs another disorder, which may continue long: where a humour inflates the skin, and it swells, and yields to the impression of the finger. This the Greeks call hydrocephalus[CD].

I have already spoken of the treatment of the second of these kinds, while it is slight, where I laid down rules to be observed by men in health, troubled with a weakness in any part. What remedies also are proper, when the pain is attended with a fever, has been shewn in that place, where the cure of fevers was considered. Now I shall treat of the rest.

That, which is acute, and that, which rises to an unusual height, and that, which proceeds from some sudden cause, and though not mortal, yet is very violent, demands venesection for the first step in the cure. But unless the pain be intolerable, that is needless. And it is better to abstain from food; if possible, from drink too; if not, to drink water. If the pain continues the following day, to give a clyster, to procure sneezings, to take nothing but water: for this discipline often removes it in a day or two, especially if the origin be from wine, or crudity.

But if these methods afford small relief, it is proper to clip the hair close to the skin: then it must be considered, what was the cause of the pain. If heat, it is expedient to pour a great quantity of cold water over the head, to apply a concave sponge frequently dipped in cold water and squeezed, to anoint with rose-oil and vinegar, or rather to apply sordid wool dipped in these, or some other cooling cataplasms.

But if cold has brought on the disorder, it is proper to pour upon the head sea water, or at least salt water warm, or a decoction of laurel; then to rub the head briskly; next to embrocate it with warm oil, and to cover it. Some even bind it up; others clap on cervicalia(5) and cloaths, and thus are relieved; others are assisted by hot cataplasms. And therefore, where the cause is not known, it is proper to try, whether cooling things, or heating give most relief, and to use those, which upon experiment shall be found best.

But if the cause cannot be discovered, it is proper to pour over the head first warm water, as has been prescribed, or salt water, or a decoction of laurel, then cold vinegar and water. The following methods are of general use in all inveterate pains of the head: to excite sneezings, to rub the lower parts briskly, to use gargarisms of such things as promote saliva, to apply cucurbitals to the temples and back of the head, to sollicit an hæmorrhage from the nose, to vellicate the temples now and then with resin, and by applying mustard to ulcerate those parts, that are affected, first putting linen below, that it may not corrode too severely, or to make ulcers where the pain is, by hot irons, to eat always moderately, and drink water; when the pain is abated, to go into the bath, there to pour over the head first a great quantity of hot water, and then cold. If the pain is wholly removed, to return even to the use of wine; but ever after to drink water before any thing else.

That kind is different, where a humour is collected within the head. In this it is necessary to clip to the skin; then to apply mustard, so as to ulcerate it; if

that does not prove effectual, the knife must be made use of. The management must be so far the same with dropsical cases, that the patient must be exercised, sweated, briskly rubbed, and take such food and drink, as are powerful diureticks.

Of the cynicus spasmus.

There is a distemper incident to the face, which the Greeks call cynicus spasmus[CE]. It comes on an acute fever. The mouth is turned aside with a kind of grin, and therefore it is nothing else than a distortion of the mouth. There is also a frequent change of colour in the face and the whole body, and a great propensity to sleep.

It is very proper to let blood in this disorder. If it is not removed by this, to give a clyster. If it does not yield even to that, to vomit by white hellebore. Besides it is necessary to avoid the heat of the sun, fatigue, and wine. But if it is not cured by these methods, running must be used, and gentle and long friction upon that part, which is diseased; in the other parts shorter, but brisk. It does service also to procure sneezings, to shave the head, and to pour upon it hot, either sea water, or at least salt water, with sulphur added to it: after this bathing, to rub again, to chew mustard, and at the same time to apply cerate to the parts of the face that are affected, and to the sound parts mustard, till it corrode them. The most proper diet is of the middle kind.

Of a palsy of the tongue.

But if the tongue be paralytick, which sometimes happens of itself, sometimes is occasioned by distemper, so that the pronunciation is indistinct; it is necessary to use a gargarism of a decoction of thyme, or hyssop, or catmint; to drink water; to rub briskly the head, mouth, and the parts under the chin, and the neck; to rub the tongue itself with laser; to chew the most acrid things, such as mustard, garlick, onion; to make strong efforts to articulate words clearly; to take exercise, keeping in the breath; to pour cold water upon the head often; sometimes to eat plentifully of radishes, and then to vomit.

Of a catarrh
and gravedo.

A humour distils from the head sometimes into the nose, which is a slight disorder; sometimes upon the fauces, which is worse; sometimes even upon the lungs, which is worst of all. If it have fallen upon the nose, a thin rheum flows from the nostrils, the head is slightly pained, a weight is felt in it, and there are frequent sneezings. If upon the fauces, it irritates them, and raises a slight cough. If upon the lungs, beside the sneezings and cough, there is also a weight in the head, lassitude, thirst, heat, and bilious urine.

Another (though not very different) disorder is a gravedo. This obstructs the nostrils, blunts the voice, raises a dry cough: at the same time the saliva is salt, there is a sounding in the ears, the veins of the head move, and the urine is turbid. All these disorders Hippocrates calls coryzæ[CF]. I observe that this is now by the Greeks appropriated to the gravedo: and

catarrhs are called by them catastagmi[CG]. These are common, and of short continuance; but if they be neglected, are usually lasting. None of them is dangerous, but such as ulcerate the lungs.

When we perceive any such symptoms, we ought immediately to avoid the heat of the sun, the bath, and venery(6). And at the same time nevertheless unction may be used, and the ordinary diet. The patient should take a straight, but not too quick walk; and after it the head and face must be rubbed above fifty times. And it seldom happens, if we have restricted ourselves for two days or three at most, that the disorder is not mitigated. When it is abated, if in the catarrh the phlegm turns thicker, or in a gravedo, if the nostrils are more open(7), the bath is to be used, and the face and head fomented plentifully first with hot water, and then with egelid; after that, the patient may eat heartily and drink wine. But if on the fourth day the phlegm is equally thin, or the nostrils appear equally obstructed, austere Arminæan wine(8) is to be taken; then again for two days successively water; after which the person may return to the bath, and his usual way of living.

Neither even on these days, in which some things are to be refrained, is it proper to live like sick people; but in all other respects the same liberties may be taken as in health, except by one, who uses to be long and severely afflicted with these disorders; for such a person requires a management somewhat nicer. Therefore if the defluxion be upon his nose or fauces, besides what I mentioned before, he ought immediately in the first days of his indisposition to

walk much, to rub the inferior parts briskly, the friction must be more gentle upon the thorax, and gentler still upon the head, the ordinary diet must be diminished to half the quantity, eggs must be used, starch, and such like things, which generate a thicker phlegm; thirst, as much as he can bear, must be one part of the cure. When by these means one has been rendered fit for the bath, and has used it, a small fish, or flesh is to be added to his diet; with this caution however, that he do not immediately take his ordinary quantity of victuals. Pure wine must be used pretty plentifully.

But if it distils also upon the lungs, there is a much greater necessity for walking and friction, still observing the same rules in diet. If these have not the desired effect, he must use the more acrid kinds, indulge sleep more, and abstain from all business, sometimes try the bath, but not soon.

In a gravedo it is necessary for the first day to rest, neither to eat nor drink, to cover the head, and put wool round the throat; the day following to rise, to abstain long from drinking, or if he is obliged to do it, not to take above a hemina of water; on the third day to take a little soft bread with a small fish or some light flesh, and to drink water. If a person should not be able to forbear eating heartily, he must vomit: when he comes into the bath, he is to foment his head and face plentifully with warm water, till he sweat, then return to the use of wine. After which it can scarcely happen, that the same indisposition will continue. But if it remain, use must be made of cold, dry, and light food, as little moisture as possible, friction and exercise being still continued, which are

necessary in every indisposition of this nature.

CHAP. III.

OF THE DISEASES OF THE NECK, AND THEIR CURE.

From the head we proceed to the neck, which is liable to very severe diseases. Nor is there a more troublesome or more acute distemper than that, which by a kind of spasm of the nerves draws sometimes the head to the shoulders, sometimes the chin to the breast, sometimes stretches the neck *and holds it* straight and immoveable. The first the Greeks call opisthotonus[CH], the second emprosthotonus[CI], and the last tetanus[CJ], although some with less accuracy make use of these names indiscriminately. They often kill within four days: if the patients have escaped that time, they are out of danger.

All these are cured by the same method; so far physicians agree. But Asclepiades believed, that blood should be let: some again affirmed that ought by all means to be avoided: for this reason, that the body then stood most in need of heat; and that this resides in the blood of the veins. This indeed is false. For it is not the nature of the blood to be peculiarly hot; but amongst the several things, which compose the human body, it most quickly grows either hot or cold. Whether or no it be proper to make this discharge, may be understood from the general directions, which were given about bleeding. But it is evidently proper to give castor, and with it pepper or laser. Then a moist and hot fomentation is needful. Therefore most physicians pour warm water frequently upon the neck. That relieves for the

present; but renders the nerves more liable to cold, which is to be particularly avoided.

It is more proper then first to anoint the neck over with liquid cerate(9): next to apply ox-bladders or bottles filled with hot oil, or a hot cataplasm made of meal, or pepper bruised with a fig. But it is most suitable to foment with moist salt; the manner of doing which I have already shewn. When any of these has been done, it is fit to bring the patient to the fire, or if it be the summer-time to the sun; and to rub his neck, and shoulders, and spine with old oil, which is fittest for that purpose; if that cannot be had, with Syrian(10); if that cannot be got neither, with the oldest fat.

As friction is serviceable to all the vertebræ, so it is particularly to those of the neck. Wherefore day and night, but at proper intervals, this remedy must be used. When it is intermitted, some heating malagma must be applied. And cold is of all things to be avoided. And upon that account there ought to be a constant fire in the chamber, where the patient is nursed, and especially in the morning before day-light, when the cold is most intense. Neither will it be improper to keep the head close clipped, and to moisten it with hot ointment of iris, or the cyprine, and to keep it covered with a cap; sometimes to dip the whole body in warm oil, or in a warm decoction of fenugreek, with the addition of a third part of oil. A clyster also often relaxes the superior parts.

But if notwithstanding the pain has grown more severe, cucurbitals are to be applied to the neck, and an incision made in the skin. Eschars are to be made

either by irons, or mustard. When the pain has abated, and the neck has begun to move, we may know, that the disease yields to the remedies. But all food that requires chewing must be long avoided. Gruels must be used, also sorbile eggs, or broth made of chickens, or some other tender flesh. If this has succeeded, and the neck shall appear to be entirely well, we must begin with pulse or intrita well moistened. But the patient may sooner venture to chew bread than taste wine; for the use of this is very dangerous, and therefore to be deferred for a longer time.

CHAP. IV.

OF THE DISEASES IN THE FAUCES, AND THEIR CURE.

As the former kind of distemper afflicts the whole neck, so there is another common one equally dangerous and acute, the seat of which is in the fauces. Our authors call it angina: amongst the Greeks the name varies according to the species. For sometimes there appears neither any redness nor tumour; but the body is dry, the breath is fetched with difficulty, the limbs are relaxed. This they call [CK]synanche(11). Sometimes the tongue and fauces are red and swelled, the voice is stopped, the eyes are turned, the face is pale, and there is a hiccough. That is called quasi synanche[CL]. These symptoms are common to both: the patient is not able to swallow either food or drink; his breathing is obstructed. It is more slight, when there is only a swelling and redness, and the rest of the symptoms do not follow. That they call parasynanche[CM].

Whatever species it be, if the patient's strength will allow, blood must be let, although there is not a plethora; the next thing is to give a clyster. A cucurbital also is properly applied below the chin, and about the fauces, in order to evacuate the suffocating matter. Then there is a necessity for moist fomentations. For dry ones cut the breath. Therefore it is fit to apply sponges, which are better dipped now and then in warm oil, than in warm water. And it is of great efficacy in this case too, to put on salt in warm bags. Then it is convenient to

make a decoction of hyssop, or cat mint, or thyme, or wormwood, or even bran, or dry figs, in hydromel, and use it as a gargarism; after that to touch the palate either with ox-gall, or the medicine, which is composed of mulberries. Fine flour of pepper is also proper to sprinkle upon it.

If from these things there is little benefit, the last remedy is to make pretty deep incisions under the jaws above the neck, and in the palate about the uvula, or to open the veins, that lie under the tongue, that the distemper may be discharged through these wounds. If this method don't relieve the patient, we may be assured, that the distemper has got the better of him. But if the disorder is mitigated by them, and his throat is capable of admitting meat and drink, health will be easily recovered again. And sometimes nature assists too, if the disorder passes from a more contracted place to a larger. For this reason, when a redness and swelling begins in the præcordia, it is a sign that the malady has begun to leave the throat.

Whatever has relieved it, he must begin with a moist diet, and especially hydromel; then take soft food, and not acrid, till the fauces return to their former soundness. It is a vulgar opinion, that if a person eats a young swallow, he will be in no danger of an angina for the whole year: and that if it be preserved in salt, to burn it, and powder the coal of it, and give it to drink in hydromel, does service in this distemper. And as this is confidently reported by men of good credit among the common people, and the practice can be attended with no danger, although I have not read of it in medical treatises,

yet I thought fit to give it a place in this work.

Of a difficulty of breathing.

There is also a disorder about the fauces, which amongst the Greeks has different names, according to its different degrees. The whole consists in a difficulty of breathing: but while it is moderate, and does not wholly suffocate, it is called dyspnœa[CN]; when it is more severe, that the patient cannot breath without a noise, and quick fetches, asthma[CO]; when the difficulty is so great, that respiration cannot be performed, unless the neck be kept erect, orthopnœa[CP]. The first of these may be of long continuance without endangering life: the two following are commonly acute. These symptoms are common to them all, that by the straitness of the passage, through which the breath comes, a wheezing is occasioned; there is a pain in the breast and præcordia, sometimes also in the shoulders, and that goes and comes; besides these there is a slight cough.

Now the remedy, unless there be some contra-indication, is letting of blood. Nor is that sufficient; but goat's milk must be given warm to the patient fasting, and if he has no fever, his belly must be opened(12); and sometimes purged; and sometimes a clyster must be given, by which means the body being extenuated, the patient begins to breathe more freely. The head also ought to be placed high on the bed, and the thorax assisted with fomentations, and hot cataplasms, either dry or moist; and after that a malagma applied, or a cerate of the cyprine

ointment, or that of iris. Then the patient must drink fasting either hydromel, or a decoction of hyssop, or bruised caper-roots in water. It is proper also to give nitre, or cresses, or garlick, toasted, and then ground and mixed with honey: *another medicine is thus prepared*, honey, galbanum, resin, and turpentine are boiled up together: and when they have come to a consistence, the bigness of a bean is put every day in the mouth, and suffered to lie under the tongue, till it be dissolved: or p. *. & a quadrans of crude sulphur, and p. *. of southernwood are powdered, and mixed in a cyathus of wine, and that is supped warm. And it is not an idle opinion, that a fox's liver dried ought to be beat, and the powder of it sprinkled upon the drink; or that the lungs of the same animal should be eaten roasted as soon as possible after he is killed, but nothing of iron *used in the dressing*. Besides these, gruels and light food must be used, sometimes also small austere wine, and sometimes a vomit taken. Whatever is diuretic, is also good; but nothing more so, than walking slowly almost to lassitude, much friction, especially of the lower parts, either in the sun or at the fire, and both by the patient himself and by others, till he sweat.

Of an ulcer in the fauces.

In the internal part of the fauces there sometimes happens an exulceration. In this case most people make use of hot cataplasms externally, and moist fomentations. They advise also the warm vapour to be received by the mouth: by which, others say these parts are rendered softer, and more fit to afford

entertainment to the disorder, that already possesses them. But if the distemper can be prevented by these methods, those remedies are safe: if there is reason to fear *it is already begun*, they are improper. It is undoubtedly dangerous to rub the fauces, for it ulcerates them. Neither are diuretics good: because as they pass, they may possibly attenuate the phlegm of the part affected, which it is better to repel.

Asclepiades, to whom we are indebted for many useful discoveries, in which I have also followed him, recommends the sipping of very strong vinegar, and asserts, that this without any danger suppresses the ulcers. That may possibly prevent a flux of blood, but cannot heal the ulcers. A more proper application is lycium(13), which the same author also equally approves; or the juice of leek, or horehound, or sweet almonds rubbed with tragacanth, and mixed with passum, or lint-seed bruised, and mixed with sweet wine. The exercise also of walking and running is necessary. And smart friction is to be used from the breast downwards to all the inferior parts.

The food ought to be neither too acrid, nor rough: honey, lentils, tragum, milk, ptisan, fat flesh, and especially leeks, and whatever is mixed with the latter. The drink ought to be as little as possible, water may be given, either pure, or boiled to a decoction with a quince or dates. Also mild gargarisms: but if these are not successful, repellent ones are good.

This disease is not acute, and yet may not continue long: but requires a speedy cure, lest it turn very severe and tedious.

Of a cough.

A cough, which is contracted in many different ways, is generally a troublesome concomitant of an exulceration of the fauces; and in this case, when the fauces are cured, the cough ceases. Yet it is sometimes found by itself without any other distemper: and when it becomes inveterate, it is hardly possible to remove it entirely. And sometimes it is dry, sometimes it either generates or discharges phlegm.

In this it is proper to drink hyssop every other day; to keep in the breath and run, but by no means in dusty places; and to read aloud, which at first is obstructed by the cough, but afterwards overcomes it; then to walk; then to use also those exercises that employ the hands, and to rub the breast for a long time: after these to eat three ounces of the mellowest figs stewed over the fire.

Besides if it be moist, strong frictions are good with some heating medicines, the head being briskly rubbed at the same time; also cucurbitals used to the breast, mustard applied to the external part of the fauces, till it be a little ulcerated; the drink may be prepared from mint, and sweet almonds, and starch; and beginning with dry bread he may proceed to any other light food.

But if it be a dry cough, when it is most severe, taking a cyathus of austere wine relieves; provided that be not oftener done than three or four times after proper intervals. It is likewise necessary to swallow a little of the best laser, to take the juice of leeks or horehound, to lick squils, to sup vinegar of

squills, or at least sharp vinegar, or two cyathi of wine with a clove of bruised garlick infused in it.

In every cough it does service to take journies, long voyages, and to live near the sea, and to swim. The diet must be sometimes soft, as mallows and nettles; sometimes acrid, as milk boiled with garlick; gruels, to which laser has been added, or such as have had leeks boiled in them, till they have lost all their verdure. A sorbile egg also with an addition of sulphur may be supped; for drink warm water may be taken first, then alternately, some days water, and other days wine.

Of a spitting of blood.

A spitting of blood may strike a greater terror. But that sometimes is less, and sometimes more dangerous. For it issues sometimes from the gums, sometimes from the mouth; and indeed from the latter very plentifully at times, but without a cough, without an ulcer, or any distemper of the gums, and without expectorating any thing; but breaks out from the mouth in the same manner, as from the nose. And sometimes pure blood is discharged, at other times something like water, in which fresh meat has been washed. Sometimes it comes from the upper part of the fauces, which may happen by means of an exulceration in that part; or when it is not ulcerated, either from the mouth of some vein opened, or tubercles rising there, and discharging the blood. When this is the case, neither meat nor drink do harm, nor is any thing expectorated, as from an ulcer. But sometimes, when the throat and wind-pipe

are ulcerated, a frequent cough forces out blood too. Neither is it uncommon for it to come either from the lungs, or the breast, or the side, or the liver. Women, whose menses are suppressed, often have these spittings. And medical writers say, that blood is discharged either by the erosion, or the rupture of some part, or the dilatation of the mouth of some vein. The first they call diabrosis[CQ], the second rhegmochasmus[CR], the third anastomosis[CS]. The last does least hurt; the first is most dangerous. And it often happens, that the blood is followed by pus.

Now sometimes stopping the blood is alone sufficient to effect a cure. But if ulcers have followed, if pus, if there be a cough, diseases are formed, which differ in nature and danger according to the parts they possess. If blood only is discharged, both the remedy is easier, and the termination of the distemper quicker. And we ought not to be ignorant, that a moderate discharge of blood, is not hurtful to those, who are accustomed to hæmorrhages, or such, whose spine or hips are pained, or to any after violent walking or running, provided there be no fever: and that passing off in the urine, it removes even the lassitude. And that it is not terrible in the case of a person, who has fallen from a height, if nothing else appears uncommon in his urine. That neither is a vomiting of blood dangerous, although it return, if opportunity has been allowed to strengthen and fill up the body beforehand: and in general that no such discharge can hurt, when it happens in a strong body, and is neither excessive, nor raises a cough, nor heat. These observations are universal. Now I shall return to those particular places, which I have

mentioned.

If it comes from the gums, it is sufficient to chew purslane; if from the mouth, to hold pure wine in it; if that is not effectual, vinegar. If notwithstanding these it breaks out with violence, because it may waste a person, it is most proper to divert its force by applying a cucurbital to the back of the head, and making an incision in the skin; if this happens to a woman, whose menses are stopped, to apply the cucurbital to her groin, with scarification.

But if it has proceeded from the fauces, or the more internal parts, there is more to be feared, and greater care must be taken in the cure. Blood must be let: and if notwithstanding that, it breaks out from the mouth, the operation must be repeated a second, and a third time, and every day a little taken away: the patient ought immediately to sup either vinegar, or the juice of plantain, or leek with frankincense(14): and some sordid wool dipped in vinegar and squeezed, should be applied externally upon the place, which is diseased, and it must be cooled now and then with a sponge. Erasistratus made many ligatures in the legs, and thighs, and arms of such patients. Asclepiades was so far from thinking this useful, that he even judged it hurtful. But a number of experiments gives proof of its often answering very well.

Nevertheless there is not a necessity for making ligatures in many places: but it is sufficient to do it below the groin, and above the ancles, and near the top of the shoulders, and fore arms. Then if the patient have a fever, gruel must be given; and for

drink some astringent decoction. But if there is no fever, either washed alica, or bread dipped in cold water, and a soft egg too may be given; and for drink either what was above-mentioned, or sweet wine, or cold water. But in the allowance of drink we must remember, that thirst is serviceable in this disorder.

Besides these, rest, security from apprehensions, and silence are necessary. The patient's head, when he lies, should also be high, and it is proper to clip it close. The face is to be often bathed with cold water. But wine, the bath, venery, oil amongst meat, all acrid things, warm fomentations, a hot and close room, many cloaths thrown upon the body, are all prejudicial; also frictions, unless when bleedings have entirely ceased. Then indeed he may begin with the arms and legs, but not touch the chest. In this case he should reside near the sea-coast in the winter time, and in the inland places in the summer.

CHAP. V.

OF THE DISORDERS OF THE STOMACH, AND THEIR CURE.

The stomach(15) is below the fauces; to this many tedious disorders are incident. For sometimes a great heat affects it, sometimes a flatulency, or an inflammation, or an exulceration; at other times phlegm or bile attacks it. But the most frequent disease is a relaxation: nor is there any thing from which the stomach either suffers more itself, or more affects the whole frame.

As its disorders are different, so are the remedies. Where it is distressed with heat, it must be embrocated now and then with vinegar and rose oil, and a powder(16) with oil applied, and such cataplasms as at the same time both repel and soften. Cold water may be given to drink, unless there be some particular reason against it.

When there is a flatulency, the application of cucurbitals does service, and there is no necessity for scarification. Dry and warm fomentations, but not very strong, are serviceable. Abstinence must be enjoined at times. To drink wormwood, or hyssop, or rue fasting is good. Exercise must be used, at first gentle, and afterwards stronger; especially such as may move the superior parts, which kind is most proper in all disorders of the stomach. Exercise should be followed by unction and friction; also the bath sometimes, but seldom, and sometimes clysters;

after these warm food, and not flatulent; and in the same manner warm drink, first water, afterwards when the inflation has subsided, austere wine. This rule must be laid down in all distempers of the stomach, that by whatever means any patient has been recovered, he must pursue the same method when he is well: for his weakness returns, unless health be preserved by the same regimen, by which it was restored.

But if there be any inflammation, which is commonly followed by a swelling and pain, the chief remedies are, rest, and abstinence, sulphurated wool(17) applied round it, the use of wormwood fasting. If there is a burning heat in the stomach, it must be embrocated now and then with vinegar and rose-oil; and then food must be taken sparingly; and the external applications must be such, as both repel and soften; then withdrawing these, warm cataplasms of meal must be used, to discuss the remains of it; a clyster must be given now and then; exercise must be used, and a fuller diet.

But if the stomach is infested with an ulcer, the same course almost must be pursued, as has been prescribed in ulcerated fauces. Exercise and friction of the lower parts must be practised. Light and glutinous food must be used, but not to satiety. Every thing acrid and acid is to be avoided. If there is no fever, sweet wine may be used, or if that inflates, at least mild; but neither very cold, nor too hot.

If the stomach is loaded with phlegm, a vomit is necessary, sometimes fasting, sometimes after meat. Exercise, gestation, sailing, friction, are good.

Nothing is to be eaten or drunk, but what is warm; only avoiding such things, as usually generate phlegm.

It is a more troublesome disorder, where the stomach is vitiated with bile. Those that are thus affected, usually at the interval of some days throw it up, and indeed, which is worst of all, of a black colour. It is proper to give such patients clysters, and potions of wormwood; gestation, and sailing are necessary, and vomiting by sea sickness, if it can be procured; crudity must be avoided; food used easy of concoction, and not ungrateful to the stomach, and austere wine.

The most common and worst disorder of the stomach is a relaxation, that is, when it is not capable of retaining food, and the body ceases to be nourished, and thus is wasted by a consumption. The bath is very hurtful in this species. Reading, and exercising of the superior parts are necessary, also unctions and frictions; then to have cold water poured all over the body, and to swim in cold water, and to lay the stomach itself under canals, and more especially that part below the shoulders, which is opposite to the stomach; to stand in cold and medicinal springs is a salutary practice, such as those of Cutiliæ(18) and Subruinæ; food is also to be used cold, and such rather, as is of difficult concoction than what is easily corrupted: for this reason most people, that can concoct nothing else, concoct beef. Whence we may infer, that neither birds, nor venison, nor fish ought to be given, except the harder kinds. Cold wine indeed is fittest to drink, or at least the strong well warmed, particularly the Rhetic or

Allobrogic(19), or any other, which is both austere, and seasoned with resin; if that is not to be had, the roughest possible, and especially Signine(20).

If the food does not stay upon the stomach, water is to be drunk, and a plentiful vomiting procured; and food must be given a second time, and then cucurbitals are to be applied two fingers breadth below the stomach, and kept there for two or three hours. If there is both a vomiting and pain at the same time, sordid wool, or sponge dipped in vinegar, or a cooling cataplasm, must be applied to the stomach. The arms and legs must be rubbed briskly, but not long, and heated.

If the pain is more severe, the cupping must be performed four fingers below the præcordia; bread dipped in cold vinegar and water must be given immediately; if it has not staid, then after the vomiting, some light thing not ungrateful to the stomach; if even that is not retained, a cyathus of wine every hour, till the stomach be settled. The juice of radishes is also a powerful medicine; but a stronger is the juice of the acid pomegranate, with an equal quantity of the juice of the sweet pomegranate, and an addition also of the juice of endive and mint, but the least proportion of this; with which it is very proper to mix as much cold water, as equals the quantity of them all together. For that is more efficacious for composing the stomach than wine. A vomiting, which comes of itself, is to be stopped, although there be a nausea.

But if the food has grown sour or putrid within the stomach, both which accidents are known by the

eructations, it must be evacuated; and the stomach must be immediately recruited by taking the same kind of food, that I have just mentioned. When the present danger is removed, we must return to those things which have been prescribed before.

CHAP. VI.

OF PAINS OF THE SIDES, AND THEIR CURE.

The stomach is surrounded by the sides; and in these there happen sometimes violent pains. They arise either from cold, or a blow, or from excessive running, or from a distemper. But sometimes the disorder goes no farther than a pain; which is sometimes slowly, and sometimes quickly removed. At other times it grows extremely dangerous; and there arises an acute distemper, which by the Greeks is called pleuriticus[CT]. To this pain of the side is added a fever and cough: and by the last is expectorated, if the distemper be tolerable phlegm; if severe, blood. Sometimes also the cough is dry, and brings up nothing, and this is worse than the first, but more tolerable than the second.

Now the cure of a violent and recent pain is letting of blood. But if the case is more slight or of a longer standing, that remedy in the first is needless, and for the other is too late; and recourse must be had to cupping, first making an incision in the skin. Mustard with vinegar is also proper to apply upon the breast, till it produce ulcuscles and pimples; and after that, a medicine which can derive the humour thither. Besides these it is fit first to put sulphurated wool round the side; and then when the inflammation has a little abated, to make use of dry and warm fomentations. From these a transition is made to malagmas.

If an inveterate pain still continues, in the last place it is discussed by the application of resin. Warm food and drink must be used, and cold avoided. In the mean time, it is not amiss to rub the extremities with oil and sulphur: if the cough has abated to read softly: and by that time to take both acrid food and stronger wine. Such then are the prescriptions of the physicians. But without these it is said, that our peasants find it sufficient for their cure to drink germander in water.

These rules are common in every pain of the side: the cure is more difficult, if the distemper has grown acute. In such a case, besides what has been already directed, these cautions are to be observed: that the food be extremely thin and mild, especially gruel, and particularly that, which is made of ptisan; or chicken broth with leeks, and that is not to be given till the third day, and with this condition then, that the strength will admit of it: and for the drink a decoction of hyssop, or rue in hydromel. Now the seasons for giving these will appear from the consideration of the fevers increasing or abating, so that they be given in the greatest remission. At the same time however we should know, that in a cough of this kind we are not to allow the fauces to be dry. For often, where there is nothing to be expectorated, it continues and suffocates: for which reason I said, that a cough, which evacuates nothing, was still worse than one, which brought up phlegm. But the distemper itself in this case will not allow wine, which we prescribed before: instead of it the cream of ptisan is to be used.

As the patient is to be supported in the violence of

the distemper by these things; so when it has abated a little, a fuller diet and also some wine may be allowed; provided nothing be given, which may either refrigerate the body, or irritate the fauces. If the cough remains upon the recovery, it will be proper to intermit for one day, and the day after to take a little more wine with meat. But if the cough still prevails, it will not be amiss, as above directed, to drink some cyathi of wine. But in this kind of disorder sweet wine, or at least mild is more proper. If it grows inveterate, the body must be strengthened by a robust diet.

CHAP. VII.

OF A PERIPNEUMONY, AND ITS CURE.

From the frame of the body we must proceed to the bowels; and first of all to the lungs. Whence a violent and acute distemper arises, which the Greeks call peripneumonia[CU]. The nature of it is this. The whole lungs are affected. And their disorder is followed by a cough bringing up bile, or pus, a weight of the præcordia and the whole breast, difficulty of breathing, violent fevers, continual watching, prostration of appetite, and a consumption. This kind of distemper is attended with more danger than pain.

It is fit, if the strength will admit of it, to let blood: if not, to make use of dry cupping to the præcordia; and if the patient can endure it, by gestation to dissipate; if he cannot bear that, to move him gently within the house; to give him in drink hyssop boiled with a dry fig; or a decoction of hyssop or rue in hydromel; to use friction longest upon the shoulders, a little shorter on the arms, and feet, and legs, gentle over the lungs, and to do this twice every day.

As to diet, he ought never to have salt things, nor acrid, nor bitters, nor astringents; but what is of the milder kind. Therefore at the beginning is to be given gruel either of ptisan, or alica, or rice, in which recent fat has been boiled; along with it a sorbile egg, pine-nuts, bread with honey, or washed alica with hydromel. After that, not only pure water must

be allowed to drink, but hydromel too egelid; or if it be the summer time, even cold; unless there be some particular reason against it. It is sufficient to give these every other day, when the distemper is increasing.

When it ceases to increase, as much as the circumstances will allow, he must abstain from every thing, except egelid water. If the strength fails, it must be supported by hydromel. And against the pains the application of hot fomentations is good, or such things as both repel and soften. It does good also to lay salt ground fine upon the breast, mixed with cerat; because it corrodes the skin gently, and thus diverts the course of the matter, which oppresses the lungs. Some malagmas too of such things as make a derivation are useful. And it is not improper, during the violence of the distemper, to keep the windows close upon the patient: when it has a little abated, three or four times a day to open them a little and let in fresh air. Then when he begins to recover, for several days to abstain from wine: to use gestation and friction; to add to the gruels and former diet, amongst the pot-herbs leeks; of flesh, the heels, and trotters; and small fish; so that for a long time nothing else be taken, but what is soft and mild.

CHAP. VIII.

OF THE DISEASE OF THE LIVER, AND ITS CURE.

The distemper of another bowel, that is the liver, in like manner happens to be sometimes long and sometimes acute. The Greeks call it hepaticus[CV]. There is a violent pain to the right below the præcordia; and the same reaches to the right side, and to the clavicle, and the shoulder of the same side: sometimes also the right hand is benumbed, and there is a strong shuddering. When it is severe, bile is vomited; sometimes the hiccough almost suffocates. And these are its symptoms, when it is acute. But it is chronical, when there is a suppuration in the liver; and the pain sometimes ceases, at other times increases; on the right side the præcordia are hard and swelled; after eating, the difficulty of breathing is increased. There is also a sort of paralytic relaxation of the jaws. When the disorder has continued long, the belly, and legs, and feet swell; the breast, and arms, and the parts about both clavicles are emaciated.

In the beginning, the best thing is to let blood: then the belly must be opened; if that cannot be done otherwise, by means of black hellebore. Cataplasms are to be applied externally; first such as may repel, then hot ones, which can discuss; to these it is proper to add iris, or wormwood; after them a malagma. The diet should be gruels, and all the food should be warm, not very nourishing, and generally such as is proper in a peripneumony; and those besides that are

diuretic, and such drink as will promote the same end. Thyme is good in this distemper, savory, hyssop, catmint, sweet marjoram, sesamum(21), bay-berries, pine-flowers, blood herb, mint, the pulp of a quince, the fresh and raw liver of a pigeon. Of these some may be eaten alone, and others added to the gruel, or the drinks, but in small quantities; and it is not improper to swallow every day a catapotium composed of powdered wormwood, honey, and pepper. But all cold things must be refrained, for nothing hurts the liver more. The extremities must be rubbed. All labour and violent motion avoided: even the breath must not be long kept in. Anger, flutter, lifting any thing weighty, throwing, running are hurtful. Pouring water plentifully upon the body does good, if it be the winter time, hot; if the summer, tepid; also plentiful unction, and sweating in the bath.

If the liver is oppressed with a vomica, the same method must be followed as in other internal suppurations. Some even make an incision over it(22), and cauterize the vomica itself.

CHAP. IX.

OF THE DISORDER OF THE SPLEEN, AND ITS CURE.

But when the spleen is affected, it swells, and together with it the left side, which is both hard and resists pressure; and the belly is tense: there is some swelling also in the legs. Ulcers either do not heal at all, or at least scarcely cicatrize. In walking briskly or running, there is a pain, and some difficulty.

This malady is increased by rest. Therefore there is a necessity for exercise and labour: care being taken however that these be not carried too far, lest they produce a fever. Unction and friction, and sweatings are necessary. Every thing sweet is hurtful; also milk, and cheese. Acids are most agreeable; therefore it is good to sup sharp vinegar alone, and more especially that, which is tinctured with squills. Salt fish is to be eaten, or olives in hard brine; lettuce in vinegar; endive also, and betes in the same manner; and mustard, wild radish, and parsnips: of animal food the heels, and cheeks, lean birds, and venison of the same kind. A decoction of wormwood in water may be given for drink fasting: but after meat the water, in which a smith has often extinguished hot iron, for this very powerfully contracts the spleen: the discovery of which property we owe to an observation made upon animals bred in the houses of smiths, that they have very small spleens. Small and austere wine may also be given; and every thing in food or drink, which is diuretic: of great efficacy for that purpose is trefoil seed, or cummin, or smallage,

or serpyllum, or cytisus(23), or thyme, or hyssop, or savory: for these seem very proper to promote a discharge of the humour from it. It is good also to eat of the spleen of beef: and rocket and cresses are remarkable for attenuating the spleen. There must be some external application to ease the pain. Such is composed from a kind of acorns(24) used by the Unguentarii, which the Greeks call myrobalani[CW]: or the seeds of lint, and cresses mixed with wine and oil: also of green cypress and dry figs: or of mustard and a fourth part of the suet of a goat's kidneys, and this is rubbed in the sun and applied immediately. And the caper too is fit for this disorder in many forms; for it may both be eaten itself with meat, and its pickle with vinegar supped. Moreover the root powdered or its bark with bran, or the caper itself powdered, and mixed with honey, may be applied externally. There are also malagmas calculated for this purpose.

CHAP. X.

OF THE DISEASES OF THE KIDNEYS, AND THEIR CURE.

But where the kidneys are affected, the disorder continues long. It is worse if attended with a frequent bilious vomiting. It is proper to rest; to lie soft; to open the belly; and even to give a clyster if it will not do without it; to sit down often in warm water; to take neither meat nor drink cold; to abstain from every thing salt, acrimonious, acid, and fruit of the apple kind; to drink freely; to add sometimes to the meat, and sometimes to the drink, pepper, leeks, ferula(25), white poppies, which usually cause a great discharge of urine from the kidneys.

If they be ulcerated, and the ulcers are to be cleansed, the remedy is sixty seeds of cucumber blanched, fifteen kernels of the wild pine, as much anise as can be held betwixt three fingers, a little saffron; all these powdered, and divided into two draughts of mulse.

If the pain only is to be relieved, *the medicine is* thirty seeds of cucumber, and twenty of the kernels mentioned before, five sweet almonds, a little saffron powdered, and given to drink with milk. And besides these it is proper to apply some malagmas; especially such as are fit for drawing out moisture.

CHAP. XI.

OF THE CHOLERA, AND ITS CURE.

From the bowels we proceed to the intestines, which are obnoxious both to acute and chronic distempers. And first of all we shall make mention of the cholera; because that seems at once to affect equally the stomach and intestines. For at the same time there is both a purging and vomiting: besides these, there are flatulencies, the intestines are racked, bile is forced both upwards and downwards, first resembling water, then as if fresh meat had been washed in it, sometimes white, sometimes black, or variously coloured. Upon this account the Greeks gave this distemper the name of cholera[CX]. And besides what we have taken notice of already, the legs and hands too are often contracted, thirst torments, and there are faintings. Where all these concur, it is not to be wondered, if the patient die suddenly. And nevertheless there is no distemper obviated with less trouble.

Wherefore upon the first appearance of these symptoms it is proper to drink plenty of tepid water and to vomit. That scarce ever fails to vomit: but although it miscarries in that, yet it is of use to mix new matter with the corrupted; and it is a step in the recovery, if the vomiting be stopped. If that happens, all drink must immediately be abstained from. But if there be bloody stools, it is fit to bathe the stomach with something cold, or if the belly be pained, with the same egelid, the belly itself being assisted by

medicines moderately warm. But if the vomiting, and purging, and thirst, all at once torment greatly, and what is vomited is yet somewhat crude, it is not a proper time to give wine: water must be given, and that not cold, but rather egelid. And penny-royal with vinegar must be applied to the nostrils, or polenta sprinkled with wine, or mint, or what is *comfortable or refreshing* to nature(26).

But when the crudity is removed, then there is more apprehension of the person fainting. Wherefore at such time recourse must be had to wine: which ought to be small, aromatic, and mixed with cold water, either with the addition of polenta, or a piece of bread, which also it is proper to eat: and as often as the stomach or belly has discharged, so often to recruit the strength by these means. Erasistratus directed to mix at first three or five drops of wine with every draught, and then to add more wine by degrees. He was in the right, if he gave wine from the beginning, and then found reason to fear a crudity: but if he imagined a great weakness could be relieved by three drops of wine, he was mistaken.

But if the patient be empty, and his legs contracted, wormwood must be given to drink now and then. If the extremities be cold, they must be anointed with hot oil, with the addition of a little wax; and cherished with hot fomentations. If even by these relief has not been procured, a cucurbital must be applied externally over the stomach itself, or mustard put upon it. When that is composed, it is proper for him to sleep; and on the day following to abstain from drinking; on the third day to go into the bath; to recruit himself gradually by food; and sleep, if he

can rest easily; and to avoid fatigue and colds. If after the suppression of the cholera a feverishness remains, it is necessary to give a clyster, then to take food and wine. Now this distemper is both acute, and so much seated betwixt the intestines and the stomach, that it is hard to say, to which it peculiarly belongs.

CHAP. XII.

OF THE COELIAC DISTEMPER OF THE STOMACH, AND ITS CURE.

At the lower orifice of the stomach is seated a distemper, which is usually long, called cœliacus[CY] by the Greeks. In this the abdomen grows hard, and is pained; there is no passage by stool, and not so much as wind can escape; the extremities grow cold; and there is a difficulty in breathing.

It is most proper in the beginning to apply warm cataplasms over all the belly to ease the pain; after meat to vomit, and thus to empty the belly; then on the following days to apply cucurbitals (without making any incision) to the belly and hips: to loosen the belly itself by giving milk and salt wine cold; green figs also, if it be the season for them; with this caution however, that neither the allowance of food nor drink be given all at once, but gradually. Wherefore at intervals it is sufficient to take two or three cyathi, and food in proportion to this. And a cyathus of milk mixed with an equal quantity of water, and so given, does very well. Warm and acrid food is proper; so that even bruised garlic with milk is no bad mixture.

In a little time the case requires gestation, and especially sailing; to be rubbed three or four times a day with oil and nitre together; to have warm water poured on after meat; then to apply mustard to all the parts of the body, except the head, till they be

corroded and grow red; and more especially if the body be firm and strong. Then there must be a gradual change to such things as bind the belly. Strong roasted flesh is to be given, and such as is not easily corrupted: boiled rain water may be given to drink, to the quantity of two or three cyathi at a time.

If the disorder be of long standing, it is proper to swallow the bulk of a pepper-corn of the best laser; and every other day to drink wine or water, at times to sup single cyathi of wine, taking food between; to give a clyster of rain-water egelid; and more especially if the pain continues in the lower parts.

CHAP. XIII.

OF THE DISTEMPER OF THE SMALL GUT, AND ITS CURE.

To the intestines themselves two distempers are peculiar; one of which is in the small, and the other in the large gut. The first is acute: the other may continue long. Diodes the Carystian called the distemper of the small intestine chordapsus[CZ], that of the larger he named ileus[DA]. But I observe, that most people now call the first ileus, and the other colicus[DB]. Now the first occasions a pain, sometimes above, sometimes below the navel. In either place there is an inflammation: neither the excrements nor wind can pass downwards. If the upper part is affected, the food, if the lower, the excrements are returned by the mouth: in either case there is danger; which is increased, if the vomiting be bilious, fetid, or various, or black.

The cure is letting of blood; or applying cucurbitals in several places, but not to make incisions of the skin every where; for that is sufficient in two or three places: from the rest it suffices to evacuate air. Then it is proper to observe, where the seat of the disorder is; for there is commonly a swelling over it. And if it be above the navel, a clyster signifies nothing: if it is below, it is most proper, in the opinion of Erasistratus, to give clysters sometimes; and this remedy is often of very great service in these parts. The liquor proper for this is strained cream of ptisan, with the addition of oil and honey without any thing else. If there is no swelling, it is most proper to apply

the two hands to the top of the belly, and to bring them down gradually; for thus the seat of the disorder will be discovered, as it will necessarily resist the pressure: and from thence it may be determined, whether it is fit to use clysters or not.

The following remedies are general: to apply hot cataplasms from the breasts as far as the groin and spine, and to change them often; to rub the legs and arms; to dip the patient all over in warm oil. If the pain does not abate, to give even a clyster of three or four cyathi of warm oil. When by these means we have procured a passage for the wind downward, to give tepid mulse to drink, but in small quantity, for before great care must be taken that he drink nothing: if that has succeeded well, to add gruel.

When the pain and feverishness have ceased, then we may venture upon a fuller diet; but neither flatulent nor strong, lest the intestines yet weak be hurt. Nothing should be drunk but pure water; for every thing either vinous or acid is prejudicial in this distemper. And even afterwards it is proper to avoid the bath, walking, gestation, and other motions of the body: for the disease is apt to return upon slight occasions; and cold, or any violent motion, before the intestines have fully recovered their strength, brings it back again.

CHAP. XIV.

OF THE DISEASE OF THE LARGE INTESTINE, AND ITS CURE.

That distemper, which is seated in the large intestine, principally affects that part, where I mentioned the cæcum to be situated. There is a violent inflation; vehement pains, especially on the right side: the intestine seems to be inverted, which almost forces out the wind. In most people it comes after colds and crudity, then ceases; and while they live, it often returns, and torments, but does not shorten life.

When this pain has begun, it is proper to apply dry and warm fomentations, but first of all mild, and then stronger; and at the same time by friction to make a derivation of the matter to the extremities, that is, the legs and arms: if it is not removed, to make use of dry cupping, where the pain is. There is also a medicine calculated for this distemper, which is called colicon[DC]. Cassius claimed the glory of this invention. It has the best effect given by way of potion; but even externally applied by dispersing the wind it eases the pain.

Neither food nor drink should be given, till the pain be over. The regimen for such patients I have already mentioned(27). The composition, which is called colicon, consists of the following ingredients: of costus, anise, castor, each p. * iii. parsley, p. * iv. long pepper and round, each p. * v. tears of poppy,

round cyperus, myrrh, nard, of each p. * vi. these are incorporated in honey. Now this may be both swallowed alone, and taken with warm water.

CHAP. XV.

OF A DYSENTERY, AND ITS CURE.

The next disorder of the intestines to this is by us called tormina, and by the Greeks dysenteria[DD]. The intestines are ulcerated within; blood flows from them; and together with that either excrements, which are always liquid, or something mucous are discharged; sometimes along with it, something fleshy is excerned. There is a frequent desire of going to stool, and a pain in the anus: with this pain a very small quantity is excreted; and even by that the pain is increased; and after some time it abates, and there is a small interval of ease; sleep is interrupted; a slight fever comes on; and when this distemper grows inveterate, it either kills a man in time, or though it terminates at last, torments him long.

The first rule to be observed, is to rest; for all kinds of agitation ulcerate: then to sup a cyathus of wine fasting, with the bruised root of cinquefoil; to apply restringent cataplasms over the belly, which is not expedient in the abovementioned disorders of this part; and as often as he has gone to stool, to wash his lower parts with a warm decoction of vervains; to eat purslane, either boiled or preserved in strong brine; to take such food and drink as bind the belly.

If the distemper is of longer standing, it is fit to administer a tepid injection of the cream of ptisan or milk, or melted fat, or deer's marrow, or oil, or butter with rose oil, or the raw whites of eggs with

the same, or a decoction of lintseed; or if there is no sleep, the yolks with a decoction of rose leaves: for these ease the pain, and render the ulcers milder, and are especially useful, if the disorder be also attended with a nausea. Themison asserts, that the roughest brine should be used in the same manner.

The food ought to be such, as is gently astringent to the belly. But diureticks, if they have their natural effect, are useful by making a derivation of the humour: if they do not gain that point, they increase the malady; therefore they must not be administered, but to such, as they usually affect in that way easily. If there be a fever, pure warm water must be given to drink, or such as has an astringent quality: if that is not to be got, light, austere wine. If for several days these remedies have done no good, and the distemper is now inveterate, drinking of water pretty cold binds the ulcers, and begins a recovery. But when the belly is once bound, they must immediately return to warm drink.

Sometimes also there happens to be a discharge of putrid sanies, which has an intolerable stench: and sometimes pure blood comes away. In the first of these cases, the belly should be washed with hydromel; after that the injections above prescribed must be used. And a piece of minium(28) powdered with a hemina of salt, is powerful against a gangrene of the intestines: or they may be mixed with water, and given for a clyster. But if pure blood is evacuated, the food and drink ought to be astringent.

CHAP. XVI.

OF A LIENTERY, AND ITS CURE.

From a dysentery sometimes proceeds a lientery, in which the intestines can retain nothing, and whatever is taken they presently pass unconcocted. This sometimes is tedious, and sometimes carries off people quickly.

Now in this disorder it is proper to administer astringents, to enable the intestines to retain. Wherefore mustard should be applied over the breast; and when the skin is ulcerated, a malagma to discharge the humour: and let the patient sit down in a decoction of the vervains; and take such food and drink as bind the belly, and have cold water poured over him.

Care should be taken, however, that upon the application of all these remedies at once, there do not arise a malady on the contrary extreme by means of immoderate flatulencies. Wherefore the intestines will require to be strengthened gradually by the daily addition of somewhat. And as in every flux of the belly, so in this, it is particularly necessary to go to stool not as often as there is a motion, but as often as there is an absolute necessity, that this very delay may bring the intestines to a habit of bearing their burden.

There is another direction, which belongs equally to all similar disorders, to be principally regarded in this; that since most of the things proper for the

disorder are disagreeable to the palate, such as plantain, and bramble berries, and whatever is mixed with pomegranate bark, such of these are to be chosen as the patient prefers. Then if he has an aversion to them all, let something less beneficial, but more grateful, be given at times to excite his appetite. Exercise and friction are necessary also in this distemper: and with these, according to Hippocrates, the heat of the sun, the fire, the bath, and vomiting, even by white hellebore, if the other means for that purpose prove unsuccessful.

CHAP. XVII.

OF WORMS IN THE BELLY, AND THEIR CURE.

Worms too sometimes infest the belly; and they are sometimes discharged downwards, at other times, which is more disagreeable, from the mouth: and sometimes we observe them to be broad, which are the worst kind, and sometimes round.

If they are broad, a decoction of lupines, or mulberry bark in water may be given to drink: or either hyssop, or an acetabulum of pepper powdered, and a scammony with water. Or let the patient on one day, after eating plentifully of garlick, vomit; and the day following take a handful of the small stalks of the pomegranate, and boil these, after bruising them, in three sextarii of water, till a third part remains; let him add to this a little nitre, and drink it fasting: then after the interval of three hours let him take two draughts of this decoction, or the same with the addition of hard brine; then go to stool, having hot water in a vessel below him.

If again they are round, which chiefly molest children, both the same medicines may be given, and something more gentle, as the seed of nettles powdered, or of cabbage, or cummin with water, or mint with the same, or a decoction of wormwood, or hyssop in hydromel, or the seed of cresses powdered with vinegar. It is good also to eat lupines, and garlick, or to have clysters of oil administered.

CHAP. XVIII.

OF A TENESMUS, AND ITS CURE.

There is also another distemper, which is more mild than any I have been treating of, called by the Greeks tenesmus[DE]. This ought to be ranked neither with the acute nor the chronic disorders, since it may be easily removed, and by itself never proves mortal. In this, as well as in a dysentery, there is a frequent motion to stool; and equal pain, when any thing is excreted. Something like to phlegm and mucus is discharged, sometimes too, slightly tinctured with blood; but with these is sometimes mixed what has been duly concocted from the food.

It is proper to sit down in warm water; to apply something to the anus itself pretty often. For which purpose many medicines are suitable: butter with oil of roses; acacia dissolved in vinegar; that plaister, which the Greeks call tetrapharmacum(29), melted with rose oil; alum wrapped in wool, and thus applied; and the same injections which relieve in the dysentery; the same decoction of vervains to foment the lower parts. Every other day, water and light austere wine are to be drunk alternately. The drink ought to be egelid, and nearer to cold: the diet of the same nature as we have directed for a dysentery.

CHAP. XIX.

OF A SIMPLE PURGING, AND ITS CURE.

A purging, while recent, is still a more gentle distemper, in which the discharge is both liquid, and more frequent than ordinary. In this the pain is sometimes tolerable, at other times very severe; and that shews a greater violence of the disease. But for the belly to be loose for one day is often salutary; and even for several days, provided there be no fever, and it cease in seven days. For thus the body is cleansed; and what would have hurt internally, is advantageously evacuated. But the continuance of it is dangerous; for sometimes it brings on a dysentery, and febriculas, and wastes the strength.

It is sufficient to rest the first day; and not to stop the flux of the belly. If it has ceased spontaneously, to make use of the bath, to take a little food: if it continues, to abstain, not only from food, but from drink also. On the day following, if the belly still be loose, to continue at rest; and take a very little astringent food. On the third day to go into the bath; to rub every part of the body briskly, except the belly; to expose the loins and shoulders to the heat of the fire; to take food, but such as is astringent to the belly; a little wine undiluted. If on the day following the purging shall continue, to eat more, but likewise to vomit. Upon the whole, to struggle against it by thirst, fasting, and vomiting, till it ceases: for it is scarcely possible, that after this care the belly should not be bound.

There is another method, when one has a mind to stop the flux, to take supper, and then to vomit; on the day after, to rest in bed; to be anointed in the evening, but gently; then to eat half a pound of bread in neat Aminaean wine; next, something roasted, and especially a bird; and afterwards to drink the same wine mixed with rain water; and to continue in this course till the fifth day, and vomit again. Asclepiades, contrary to former authors, affirmed, that the drink ought always to be cold, and indeed as cold as possible. My opinion is, that every one may determine by his own experience, whether he should use it hot or cold.

But it sometimes happens, that this disorder, neglected for several days, may be more difficult to cure; it is proper to begin with a vomit; then on the evening of the following day, to be anointed in a tepid place; to eat moderately, and drink wine undiluted and as rough as can be got; to keep rue with cerate applied over the belly. And in this state of the body, neither walking nor friction are proper: riding in a chariot is good, on horseback much better; for nothing strengthens the intestines more.

If medicines are to be made use of, those composed of the apple kind are most suitable. At the time of vintage, pears and crab apples are to be thrown into a large vessel; if these cannot be had, green tarentine pears, or signine, the apples called scandiana or amerina, or pears called myrrhapia(30); and to these quinces must be added, and pomegranates with their bark, service fruit, and, which are more used, the torminalia, and let these take up the third part of the jar; after that it must be filled with must, and boiled

till the whole contents being dissolved unite into one mass. This is not unpleasant to the taste; and whenever the case requires it, taken moderately, without any prejudice to the stomach it binds the belly: it is sufficient to take two or three spoonfuls in one day. Another stronger medicine is, to gather myrtle berries, and press the wine from them, to boil it to the tenth part, and sup a cyathus of that. The third, which may be got at any time, is to scoop a pomegranate, and taking out all the seeds, to put in again the membranes, that were betwixt them; then to drop in raw eggs, and mix them up with a small wooden stirrer; then to put the shell over the fire, which does not burn, while there is any moisture within; when it begins to grow dry, it is proper to remove it, and taking out the contents with a spoon, to eat them. This acquires great efficacy by the addition of some other things: therefore it is even put into pepper wine, and mixed with salt, and pepper, and eaten with these: and pulse may be taken also boiled with some old honeycomb. And lentils boiled with pomegranate bark, and bramble tops boiled in water, and eaten with oil and vinegar, are efficacious: as also to drink the decoction either of dates, or quinces, or dry service fruit, or bramble berries; and I mean this kind of liquor, whenever I direct such drink to be given as is astringent. A hemina of wheat also is boiled in austere Aminaean wine; and the wheat is given to a person fasting and thirsty, and after that the wine is supped: this may justly be ranked amongst the most powerful medicines. And the signine wine is given also to drink, or resinated austere, or any other austere kind.

And the pomegranate is bruised with its shells and seeds, and is mixed with such wine; and a person either sups this alone, or drinks it mixed. But the use of medicines is needless, unless where the disorder is violent.

CHAP. XX.

OF THE DISEASES OF THE WOMB, AND THEIR CURE.

From the womb in women proceeds a violent distemper; and next to the stomach, this part both suffers most sensibly itself, and most affects the rest of the body. Sometimes it destroys the senses, so as to occasion their falling as in an epilepsy: but with this difference, that the eyes are not turned, nor is there any discharge of froth, nor convulsions: there is only a profound sleep. In some women this distemper returns frequently, and attends them during the whole course of their lives.

When it attacks, if there be sufficient strength, bleeding relieves: if there is not, yet cucurbitals must be applied to both sides of the groin. If the patient lies long in this state, or used to do so, it is proper to hold to the nostrils the extinguished wick of a lamp, or some other of these things I have mentioned of a remarkably bad smell, in order to rouse the woman. The same purpose is obtained by the pouring on of cold water. And rue bruised small with honey is good, or cerate of cyprine oil, or any other hot and moist cataplasm, applied from the pudenda up to the pubes. In the mean time, the hips and hams ought also to be rubbed.

After this, when she returns to herself, she must be forbid wine for a whole year, even although the disorder do not return. Friction must be practised every day over the whole body, but chiefly on the

belly and hams. Food of the middle kind must be given: mustard be applied to the lower belly every third or fourth day, till the skin grow red.

If the hardness continue(31), nightshade dipt in milk, and then rubbed small, seems to be a proper emollient, and white wax and deers marrow with iris ointment, or beef suet, or goat's, mixed with rose oil. In drink must be given either castor, or git, or dill. If she is not in good habit, she may be purged with the cyperus. If the womb is ulcerated, a cerate may be made of rose oil, also fresh hogs lard mixed with whites of eggs may be applied: or the white of an egg mixed with rose oil, with the addition of some powder of roses to help the consistence. But when the womb is pained, it ought to be fumigated with sulphur.

But if an excessive discharge hurts a woman, the remedy is to make an incision in the skin, and apply cucurbitals either to the groin or below the breasts. If the discharge is malignant,(32) restringents must be used. This intention is answered by white olives, black poppies taken with honey, and gum liquified, together with the powdered seed of smallage, and given in a cyathus of passum.

Besides these, in all disorders of the womb, such drink is proper as is made of the aromaticks, that is, spikenard, saffron, cinnamon, cassia, and the like. The mastich tree boiled to a decoction has the same effects. But if the pain be intolerable, and blood is discharged, even bleeding is proper; or at least the application of cucurbitals to the hips, after making an incision in the skin.

Of an excessive discharge of urine.

But when urine is made beyond the measure of what is drunk, and coming away without pain emaciates, and creates danger, if it be limpid, there is a necessity for exercise and friction, especially in the sun, or at the fire. The bath ought to be seldom used, and the stay in it but short; the food astringent; the wine austere and undiluted, in summer cold, in winter egelid, but as little as possible. The belly should be either opened by a clyster, or purged with milk. If the urine is thick, both the exercise and friction ought to be more violent; the stay in the bath longer; the food tender; wine as above directed: in both cases, every thing that provokes urine must be avoided.

CHAP. XXI.

OF AN EXCESSIVE DISCHARGE OF SEMEN, AND ITS CURE.

There is also a distemper about the parts of generation, an excessive profusion of semen, which without venery or dreams, runs off in such quantities, that in time it destroys a man by a consumption.

In this disorder brisk frictions, pouring water over the body, and swimming in water extremely cold are salutary: no food nor drink but what is taken cold. It is proper also to avoid crudities, and every thing flatulent; and to take nothing that seems to generate semen: such are siligo, fine flour of wheat, eggs, alica, starch, all glutinous flesh, pepper, rocket, bulbous roots, pine nuts. And it is not improper to foment the lower parts with a decoction of the astringent vervains, and to apply a cataplasm composed of the same to the lower belly and groin; and especially rue with vinegar(33); and the person should be cautious not to sleep supine.

CHAP. XXII.

OF THE DISEASE OF THE HIPS, AND ITS CURE.

It remains that I come to the extremities, which are connected together by articulations. I shall begin with the hips. In these a violent pain arises, which often weakens, and some people it never leaves: and for this reason that species is most difficult to cure, which after long diseases turns upon this part with a pernicious force: and as it relieves other parts, so it takes a fast hold of this, which it affects.

Fomentations of hot water must be used first; then warm cataplasms. The applications, which appear to be most useful in this case, are the bark of capers cut small and mixed with barley-meal, or with a fig boiled in water; or the meal of darnel boiled with diluted wine, and mixed with dry lees. It is more convenient to apply these malagmas in the night-time, because they are apt to grow cold. The root of elicampane also bruised, and after boiled with austere wine, and spread all over the hip is amongst the most powerful remedies. If these do not discuss the malady, hot and moist salt must be made use of.

If the pain is not removed by this method neither, or a swelling comes on, the skin must be cut and cucurbitals applied; urine must be promoted; and if the belly be bound a clyster must be given. The last remedy, which is also of great efficacy in disorders of the womb, is to make ulcers in the skin with hot irons in three or four places above the hip. To make

use of friction too, chiefly in the sun, and several times in one day: that this hurtful collection of humours may be more easily discussed. The hips themselves may be rubbed, if there be no ulcer; if there is, the other parts of the body. Now since an ulcer is frequently to be made with hot iron, that noxious matter may be evacuated, this is always to be observed, that ulcers of this kind be not healed, as soon as may be; but kept open, till the distemper, which we propose to cure by them ceases.

CHAP. XXIII.

OF A PAIN IN THE KNEES, AND ITS CURE.

The knees are next to the hips, in which there sometimes happens to be a pain. The cure consists in the same cataplasms and cupping: which are the remedies also when any pain arises in the shoulders, or the other joints. It is most hurtful of all things for one, whose knees are pained, to ride on horseback. Now all pains of this kind, when they have continued long, are scarcely cured without the use of the actual cautery.

CHAP. XXIV.

OF THE DISEASES IN THE JOINTS OF THE HANDS AND FEET, AND THEIR CURE.

In the hands and feet the diseases of the joints are more frequent, and continue longer. Such as happen to gouty people in these places, seldom disturb either eunuchs, or boys before coition, or women unless their menses be suppressed.

When they begin to feel them, blood must be let. For this done immediately at the beginning often procures good health for a whole year, sometimes for life. Some too by cleansing themselves thoroughly by drinking asses milk, have prevented its ever returning; Others by abstaining from wine, mulse and venery for a year, have rendered themselves secure from it for their whole life. And this method is to be pursued after the first attack of the pain, although it has ceased. But if the fits of it are grown customary, one may indeed be more secure at such times as the pain has remitted: but more care ought to be taken at such seasons, as it returns(34), which happens commonly in the spring or autumn.

Now when the pain is not violent, the patient ought to use gestation in the morning; then to be carried, or to exercise himself by walking gently, and if the gout be in the foot, at small intervals alternately sometimes to sit, sometimes to walk; next before he takes food, without bathing to be rubbed gently in a warm place, to sweat, and have egelid water poured

over him; after that to take food of the middle kind, making use at times of diuretics; and whenever he turns plethoric to vomit.

When the pain is very violent, it makes a difference, whether there be no swelling, or a tumour with heat, or a swelling already grown callous. For if there is no tumour, hot fomentations are required. It is proper to heat sea-water, or strong brine, then to pour it into a bason, and when the patient can bear it, to put his feet into it, and spread his gown over them, and cover them beside with cloaths, pouring in gradually at the edge of the vessel some of the same liquor, that the heat within may not decrease; and then in the night-time to apply heating cataplasms, and especially the root of marshmallows boiled in wine. But if there be a swelling and heat, coolers are more proper, and it is fit to keep the joints in the coldest water; but neither every day, nor long at a time, lest the nerves be indurated. And a cooling cataplasm must be applied: nor must even that be continued long; but a change must be made to those things, which are repellent, and at the same time emollient.

If the pain be more severe, the bark of poppies must be boiled in wine, and mixed with cerate made of rose-oil: or equal quantities of wax and hogs lard must be melted together, then wine mixed with them; and whenever an application of this medicine has grown hot, it must be removed, and another put on immediately.

But if the tumours have grown callous, and are painful, they are relieved by the application of a sponge squeezed now and then out of oil, or vinegar,

or cold water; or by equal parts of pitch, wax and alum mixed together. There are also several malagmas proper for the hands and feet. But if the pain will allow nothing to be laid on, it is fit to foment the part, which is not swelled, with a sponge dipped in a warm decoction of poppy-bark, or the roots of wild cucumber; then to put over the joints saffron with the juice of poppies and ewes milk.

But if there is a swelling, it ought to be fomented with an egelid decoction of mastic-tree, or any other of the restringent vervains; and be covered with a medicine composed of bitter almonds powdered, and vinegar; or ceruss with an addition of the juice of the wall-herb bruised. The stone also, which eats flesh, by the Greeks called [DF]sarcophagus(35), cut into such a form as to receive the feet, usually relieves their pain, when they are put into it and kept there. Of this they make sepulchres in Assus. And the Asian stone(36) also has its merit for giving ease.

When the pain and inflammation have remitted (which happens within thirty days, unless the patient has been faulty) moderate exercises, abstinence, gentle unctions must be used, the joints being at the same time rubbed with an acopon(37), or liquid cerate of cyprine oil. Riding is hurtful, to those that have the gout in their feet.

Those, who have stated returns of this pain, before them ought both by a strict regimen to take care to prevent the redundancy of hurtful matter in the body, and to use frequent vomiting, and if there is reason to apprehend a present plethora, either clysters, or purging by milk. Which Erasistratus

declared against, when the feet were gouty; lest the course of the humours downward should occasion a redundancy in the feet: though it is evident in every purgation, that not only the superior parts, but the inferior also are emptied.

CHAP. XXV.

OF THE TREATMENT OF PATIENTS RECOVERING.

From whatever distemper a person is recovering, if he gathers strength slowly, he ought to awake at day-light, nevertheless to lie still in bed; about the third hour to rub his body gently with his hands anointed. Then to amuse himself by walking as long as he finds it agreeable, laying aside all attention to business; then to use gestation for a long time, much friction; to change often his situation, air, and food. When he has drunk wine for three or four days, for one or even two to interpose water. For by these methods he shall both escape those distempers, that bring on a consumption, and may quickly recover his strength. But when he is entirely recovered, it will be dangerous for him to change his course suddenly, and turn irregular. Therefore he ought by slow degrees to lay aside these restraints, and change to the way of life most agreeable to his humour(38).

A. CORNELIUS CELSUS

OF

MEDICINE.

BOOK V.

PREFACE.

Having gone through those disorders of the body, which are principally relieved by diet, we must now proceed to that branch of physic, which depends more upon medicines. The ancient authors put great confidence in them; so did Erasistratus, and those, who stiled themselves empiricks. Their efficacy was still more extolled by Herophilus and his followers; insomuch that they attempted to cure no distemper without them. They have written a great deal too concerning the virtues of medicines: such are the treatises of Zeno, or Andreas, or Apollonius, who was sirnamed Mus. Not without reason Asclepiades in a great measure laid aside the use of them: and

because almost all medicines offend the stomach, and afford bad juices, he chose to apply all his care to the management of the diet. But though this be more useful in most distempers, yet many disorders are incident to our bodies, which cannot be totally removed without medicines. It is fit to observe in the first place, that all the branches of medicine are so connected together, that they cannot be entirely separated; but each derives its appellation from that, which is principally made use of in it. And therefore as that, which cures by diet, sometimes employs medicines; so the other, which chiefly works by medicines, ought also to take in the diet, which is of great service in all disorders of the body. But since all medicines have some peculiar powers, and often give relief single, often mixed, it seems not improper first of all to mention both their names and virtues, and the compositions of them; that our work may be shortened, when we come to the curative part.

CHAP. I.

MEDICINES FOR STOPPING BLOOD.

A bleeding is stopped by copperas, which the Greeks call chalcanthus[DG], chalcitis(1), acacia, lycium with water, frankincense, aloes, gum(2), calcined lead(3), leeks, blood herb, either Cimolian, or potter's chalk, misy(4), cold water, wine, vinegar, allum(5), melinum(6), scales both of iron(7) and copper; and of this last there are two species, the one of common copper, the other of red copper.

CHAP. II.

AGGLUTINANTS AND RESTRINGENTS.

A wound is agglutinated by myrrh, frankincense, gum, especially acanthine, fleawort, tragacanth, cardamom, bulbusses, lintseed, cresses, white of an egg, glue, isinglass, the white vine(8), snails bruised with their shells, boiled honey, sponge squeezed out of cold water or wine or vinegar; or sordid wool dipped in the same, if the wound be slight; also cobwebs.

Both scissile alum, which is called schiston[DH] and the liquid are restringent, also melinum, orpiment, verdigrease, chalcitis, copperas.

CHAP. III.

MEDICINES FOR PROMOTING A SUPPURATION.

Maturating and suppurating medicines are nard, myrrh, costus, balsam, galbanum, propolis(9), storax, both the soot of frankincense(10) and its bark, bitumen, pitch, sulphur, resin, suet, fat, and oil.

CHAP. IV.

MEDICINES FOR OPENING WOUNDS.

Wounds are opened like mouths in bodies, which in Greek is called anastomoun[DI], by cinnamon, balsam, panaces, long cyperus, penny-royal, white violet flowers, bdellium, galbanum, turpentine and pine resin, propolis, old oil, pepper, pellitory, ground pine, stavesacre, sulphur, alum, seed of rue.

CHAP. V.

CLEANSERS.

Cleansers are verdigrease, orpiment, which by the Greeks is called arsenicon[DJ] (this in all respects has the same properties with sandarach(11), but is stronger) copper scales, pumice, iris, balsam, storax, frankincense, incense bark, both pine and turpentine resin liquid, flower of the wild vine, lizard's dung, blood of a pigeon, and ring-dove, and swallow, ammoniacum, bdellium (which has the same virtues with the ammoniacum, but is not so strong) southern-wood, dry figs, gnidian berry(12), shavings of ivory, omphacium(13), radish, the coagulum of blood, but especially that of a hare (which has the same properties of others, but in this case is more efficacious) ox gall, raw yolk of an egg, hartshorn, glue, crude honey, misy, chalcitis, saffron, stavesacre, litharge, galls, copper scales(14), blood-stone, minium, costus, sulphur, crude pitch, suet, fat, oil, rue, leeks, lentils, vetches.

CHAP. VI.

CORRODING MEDICINES.

Corrosives are liquid alum, but more especially the round, verdigrease, chalcitis, misy, copper scales, especially of the red kind, calcined copper(15), sandarach, minium from Sinope, cassia, balsam, myrrh, incense bark, galbanum, liquid turpentine resin, both kinds of pepper, but chiefly the round, cardamom, orpiment, lime, nitre, and aphronitre(16), seed of smallage, narcissus-root, omphacium, bastard sponge, oil of bitter almonds, garlic, crude honey, wine, mastich-tree, iron scales, ox-gall, scammony, stavesacre, cinnamon, storax, seed of rue, resin, seed of narcissus, salt, bitter almonds, as well as their oil, copperas, chrysocolla(17), calcined shells.

CHAP. VII.

EATING MEDICINES.

The medicines, which eat flesh, are the juice of acacia, ebony, verdigrease, copper scales, chrysocolla, Cyprus ashes(18), nitre, cadmia(19), litharge, hypocistis(20), diphryges(21), salt, orpiment, sulphur, rocket, sandarach, salamander(22), bastard sponge, flour of copper(23), chalcitis, copperas, ochre, lime, vinegar, galls, alum, milk of the wild fig-tree, or of sea spurge, which by the Greeks is called tithymallus[DK], animal gall, soot of frankincense, spodium(24), lentil, honey, olive-leaves, horehound, blood-stone, and the Phrygian(25), and Asian, and Scissile(26) stones, misy, wine, and vinegar(27).

CHAP. VIII.

CAUSTICS.

Caustics are orpiment, copperas, chalcitis, misy, verdigrease, lime, burned paper(28), salt, copper scales, burned lees, myrrh, dung of a lizard, and pigeon, and ring-dove, and swallow, pepper, gnidian berry, garlick, diphryges, both the milks mentioned in the last chapter, hellebore both white and black, cantharides, coral, pellitory, frankincense, salamander, rocket, sandarach, stavesacre, chrysocolla, ochre, scissile alum, sheep's dung, flower of wild vine.

CHAP. IX.

MEDICINES FOR FORMING CRUSTS UPON ULCERS.

The same medicines form crusts upon ulcers, as if they were burnt by fire, but particularly chalcitis, especially if it be calcined, flower of copper, verdigrease, orpiment, misy, and the efficacy of the last is increased by calcination.

CHAP. X.

RESOLVENTS FOR CRUSTS.

The crusts (eschars) of ulcers are resolved by wheat meal with rue or leeks or lentils, with the addition of some honey.

CHAP. XI.

DISCUTIENTS.

For discussing any collections, which have been formed in any part of the body, the following things are very powerful, southernwood, elicampane, sweet marjoram, white violet, honey, lilies, sansucus(29), cyperus, milk, mellilot, serpyllum, cypress, cedar, iris, purple violet, narcissus, roses, saffron, white horehound, long rooted cyperus, nard, cinnamon, cassia, ammoniacum, wax, resin, stavesacre, litharge, storax, dry figs, goat's marjoram, seeds of lint, and of narcissus, bitumen, the dust of the gymnasium, the pyrites-stone, or mill-stone, raw yolks of eggs, bitter almonds, and sulphur.

CHAP. XII.

EVACUATING AND DRAWING MEDICINES.

Evacuant and drawing are labdanum, round alum, ebony, lintseed, omphacium, gall, chalcites, bdellium, turpentine and pine resin, propolis, dry figs boiled, pigeon’s dung, pumice, meal of darnel, green figs boiled in water, elaterium, bay-berries, nitre, and salt.

CHAP. XIII.

LENIENTS.

Lenients for what is exasperated are spodium, ebony, gum, white of eggs, milk, tragacanth.

CHAP. XIV.

INCARNING MEDICINES.

Pine resin, attic ochre, honey, asteriace(30), wax, and butter, incarn and fill up ulcers.

CHAP. XV.

EMOLLIENTS.

Emollients are, calcined copper, Eretrian earth(31), nitre, poppy-tears(32), ammoniacum, bdellium, wax, suet, fat, oil, dry figs, sesamum, mellilot, the root and seed of narcissus, rose-leaves, coagulum, yolk of egg raw, bitter almonds, all marrow, antimony(33), pitch, boiled snails, hemlock-seed, dross of lead(34), by the Greeks called scoria molybdou[DL], panaces, cardamom, galbanum, resin, stavesacre, storax, iris, balsam, dust of the gymnasium, sulphur, butter, rue.

CHAP. XVI.

CLEANSERS OF THE SKIN.

The skin is cleansed by honey, for which purpose it is more effectual when mixed with galls, or vetches, or lentils, or horehound, or iris, or rue, or nitre, or verdigrease.

CHAP. XVII.

OF THE MIXTURE OF SIMPLES; AND OF THE PROPORTION OF THE WEIGHTS.

Having mentioned the virtues of the simples, we are next to shew in what manner they are to be mixed, and what compositions are made from them. Now they are mixed variously, and there is no certain method for it, since of similar ingredients some are taken away, and others are added; and though the very same simples are all used, the proportion of their weights may be changed. And therefore though the number of medicinal simples be not so very great, there are innumerable kinds of mixtures; which it would be needless to enumerate, though it were possible: both because the same effects are found within the compass of a few compositions; and because it is easy for any person, who is acquainted with their virtues, to change them. I shall therefore confine myself to the most esteemed. Now in this book I shall give an account of those, which may either have been wanted in the preceding, or are employed in the cures, which I am to treat of, only throwing together these compositions, which are of more general use. Such as are accommodated to one particular disorder, or even to a few, I will insert in their proper places.

But before I proceed, I would have it understood, that in an ounce is contained the weight of seven denarii. Next, that I divide each denarius into six

parts, that is sextantes, so that I have the same quantity in the sextans of a denarius, that the Greeks have in their obolus[DM]. That being reduced to our weights makes a little more than half a scruple.

Of the difference betwixt malagmas, plaisters, and troches.

Now malagmas, and plaisters, and troches, which the Greeks call trochischi[DN], though in many things they are the same, differ in this, that malagmas are chiefly made from flowers, and even their stalks, plaisters and troches are more generally composed of some metallic ingredients. Then malagmas being beat up are abundantly soft: for they are applied, where the skin is unbroken: but those things, of which plaisters and troches are made, are carefully powdered; lest they hurt wounds, when they are laid on. Betwixt a plaister and a troche there is this difference, that a plaister admits of something melted: in a troche there are only dry medicines united by some liquid. Again, a plaister is made in this manner: The dry medicines are powdered by themselves: when they are mixed, vinegar is dropped into them, or any other liquor belonging to the composition, that is not greasy; and they are again rubbed with that. Those things, that are capable of being melted, are melted altogether at the fire; and if any oil is to be in the mixture, it is then poured in. Sometimes too, some one of the dry ingredients is first boiled with oil. When these things are finished, which ought to be done separately, the whole is

mixed together into one mass. But the way of making troches is this: The dry medicines being powdered are formed into one body with a liquor not greasy, such as wine or vinegar, and again after being brought to a consistence, grow dry: and when they are to be used, are diluted by a liquor of the same kind. *There is also a difference in the manner of using these*: for a plaister is simply applied, a troche is rubbed on, or else mixed with something softer than itself, or with cerate.

CHAP. XVIII.

OF MALAGMAS.

1.
A cooling malagma for the hot gout.

These particulars being premised, I shall first subjoin malagmas, which are commonly contrived not with an intention to cool, but to heat. There is one however, which is cooling, adapted to the hot gout in the feet. It contains of galls both unripe, and otherwise, of coriander-seed, hemlock, poppy-tears, gum, of each an acetabulum, of washed cerate, which the Greeks call peplumenon[DO], half a pound.

The other malagmas are mostly heating. But some of them discuss matter, others draw it out, which are called epispastica[DP]: most of them are adapted to particular parts of the body.

2.
A drawing malagma.

If matter(35) is to be drawn out, as in a dropsical case, pleurisy, a beginning abscess, and even a moderate suppuration, that is proper, which consists of dry resin, nitre, ammoniacum, galbanum, each p. *. wax, p. *. Or that, which contains rasile verdigrease, frankincense, each p. ii. *. Sal ammoniac p. vi. *. copper scales, wax, each p. viii. *. dry resin p. xii. *.

and vinegar a cyathus. The same end is obtained by the meal of cummin-seed with struthium(36) and honey p. ii. *.

3.
Malagma for the liver.

If the liver is pained, the proper malagma is that, which contains balsam-tears p. xii. *. costus, cinnamon, cassia bark, myrrh, saffron, round cyperus, balsam-seed, Illyrian iris, cardamom, amomum, nard, of each p. xvi. *. To these is added nard ointment(37), till it be of the consistence of cerate. And this must be used, while it is recent: but if it be to be kept for some time, turpentine resin p. xvi. *. wax p. x. *. must be beat up with mild wine, and mixed with it.

4.
Malagma for the spleen.

But if the spleen is pained, the bark of that acorn, which the Greeks call myrobalanus, and nitre are beat together in equal quantities, and are sprinkled over with the sharpest vinegar: when it comes to the consistence of cerate, it is spread upon a linen cloth first moistened in cold water, and thus applied, and over it is laid barley meal; but it ought not to lie there above six hours, lest it waste the spleen; and it is better to do it twice or thrice.

5.
Lysias's malagma for several parts.

Lysias composed a malagma, at once calculated for the liver, and spleen, and for abscesses, and the scrophula, and parotid swellings, and the joints, and heels suppurating, or otherwise painful, likewise to assist the concoction of the stomach, of the following materials: opopanax, galbanum, resin, of each p. ii. *. ammoniacum, bdellium, wax, beef suet, dry iris p. iv. *. with an acetabulum of cachrys(38) and forty grains of pepper: which being powdered are brought to a proper consistence by iris ointment.

6.
Apollophanes's
malagma.

The composition of Apollophanes is calculated for pains of the sides. It consists of turpentine resin, soot of frankincense, each p. iv. *. bdellium, ammoniacum, iris, suet from the kidneys either of veal or a goat, viscum(39), each p. iv. *. Now this relieves all pains, mollifies what is hard, and is moderately heating.

7.
Andreas's
malagma.

The malagma of Andreas also has the same effect; it likewise relaxes, draws out humour, maturates pus, and when that is ripe, it breaks the skin, and brings it to cicatrize. It does good applied either to small or large abscesses; also to pained joints, hips, and feet: it restores too any part, that has been damaged by bruises; softens hard and inflated præcordia; extracts bones; and in fine is efficacious in every case, where heat can be of service. It contains wax p. xi. *.

viscum, sycaminum (which others call sycamore) tears, each p. i. *. pepper both round and long, ammoniacum thymiama(40), bdellium, Illyrium iris, cardamom, xylobalsam, male frankincense, myrrh, dry resin, each p. x. *. pellitory, gnidian berries, aphronitre, sal ammoniac, root of Cretan birthwort, root of wild cucumber, liquid resin of turpentine, of each p. xx. *. to these is added a sufficient quantity of iris ointment to soften and reduce them to a proper consistence.

8.
Malagma for Polyarchus.

The principal composition for relaxing what is bound, softening what is hard, and discussing any collection, is that, which is ascribed to Polyarchus. It contains of long cyperus, cardamom, soot of frankincense, amomum, wax, liquid resin, equal parts.

9.
Malagma of Nileus.

There is another by Nileus for the same purposes: of crocomagma(41), which is, as it were, the refuse of saffron p. iv. *. ammoniacum thymiama, wax, each p. xxx. *. the two first of these are rubbed down with vinegar, the wax is melted with oil of roses, and then the whole is mixed together.

10.
Moschus's emollient malagma.

The malagma, that passes under the name of Moschus, has only the property of softening what is hard. It contains of galbanum one ounce, soot of frankincense p. iii. *. wax, ammoniacum thymiama, each a triens, dry pitch p. ii. *. vinegar three heminae.

11.
Medus's discutient malagma.

Medus's malagma is used to discuss any collection. This contains wax p. iii. *. panaces $\frac{1}{2}$ p. *. copper scales, round alum, scissile alum, of each p. i. *. calcined lead p. i. *. and $\frac{1}{2}$.

12.
Panthemus's malagma.

Panthemus for the same intention made use of lime $\frac{1}{2}$ p. *. mustard powdered, fenugreek, alum, each p. i. *. beef suet p. ii. *. and $\frac{1}{2}$.

13.
Andreas's malagma for the scrophula.

For the scrophula I find many malagmas. I believe indeed, that the more malignant that distemper is,

and the more difficult to discuss, the greater number of remedies have been tried; which have succeeded variously in different persons. Andreas is the author of the following mixture: Nettle-seed p. i. *. round pepper, bdellium, galbanum, ammoniacum thymiama, dry resin, of each p. iv. *. liquid resin, wax, pellitory, long pepper, sea spurge-seed, crude sulphur, which is called apyron[DQ], equal parts.

14.
Mico's for the same.

Mico's malagma is this: of dry lees, vinegar, aphronitre, sal ammoniac, mustard, cardamom, wild cucumber-root, resin, each p. iv. *. which are beat up with mild wine.

15.
Three others.

A more expeditious for the same purpose is that, which contains of viscum, cat's dung, resin, crude sulphur, equal parts. And another, in which are of sulphur p. i. *. pyrites-stone p. iv. *. of cummin an acetabulum. Likewise that, which consists of one part of pyrites, two of sulphur, and three of turpentine resin.

16.
Malagma of an Arabian for the scrophula, &c.

There is a malagma of a certain Arabian for the scrophula, and rising tubercles, which are called

phymata, which discusses them. It contains myrrh, sal ammoniac, frankincense, resin both liquid and dry, crocomagma, wax, of each p. i. *. the pyrites-stone p. iv. *. to which some add sulphur p. ii. *.

17.
Another for the same.

There is another of service in the scrophula, and in those tubercles, which are with difficulty brought to maturate; and in those, that are called carcinodea[DR], which consists of these things: sulphur p. ii. *. nitre p. iv. *. myrrh p. vi. *. soot frankincense $\frac{1}{2}$ p. *. sal ammoniac p. iii. *. wax p. i. *.

18.
Protarchus's malagma.

Protarchus for parotid swellings, and those tubercles, which are called melicerides[DS], that is, honey-combs, or phymata, and for malignant ulcers, made this mixture: of pumice, liquid pine resin, soot of frankincense, aphronitre, iris, each p. viii. *. with wax p. ix. *. and to these he added a cyathus and half of oil.

19.
Malagma for a panus, &c.

But against the panus upon its first appearance, which the Greeks call phygethlon[DT], and any tubercle, which is called phyma, a mixture is made

of attic ochre, with two parts of flour, and to these, while they are beat up, honey is now and then dropped in, till it acquire the consistence of a malagma.

20.
A malagma against all phymata.

That also discusses all the tubercles, that have the name of phyma, which contains of lime, aphronitre, round pepper, each p. i. *. galbanum p. ii. *. salt p. iv. *. which are incorporated with cerate made of rose-oil.

21.
Malagma for beginning abscesses.

That malagma suppresses all beginning abscesses, which is composed of galbanum, bruised beans, each p. i. *. myrrh, frankincense, bark of caper-root, each p. iv. *. And the murex burnt, and reduced to a fine powder, dropping in now and then a little vinegar, powerfully discusses all beginning abscesses.

22.
Malagma for blood.

But if in such tumours, too great a quantity of blood is extravasated, it is proper to use an application, which is also efficacious against tubercles. It has the following ingredients: bdellium, storax, ammoniacum, galbanum, pine resin both dry and

liquid. Also mastich, frankincense, iris, of each p. ii. *.

23.
Malagma for cancers, &c.

Cancers and tubercles are in a good measure eased by this composition: galbanum, viscum, ammoniacum, turpentine resin, each p. i. *. beef suet

$\frac{1}{2}$

p. *. burned lees as great a proportion as may be, without making it drier than a malagma ought to be.

24.
Malagma for the face.

But if there be a contusion in the face and a livor from an extravasation of blood, the following composition, applied night and day, removes it. Birthwort, thapsia(42), of each p. ii. *. bdellium, storax, ammoniacum thymiama, galbanum, dry resin, and liquid, resin of the mastich-tree, male frankincense, Illyrian iris, wax, of each p. iv. *. The application of a bean also will do good in the same case.

25.
Opening malagmas.

There are also some malagmas, which by the Greeks are called anastomotica[DU], because they have the power of opening. Such is that, which is composed of the following things: long pepper, aphronitre, of each

p. ii. *. hedge mustard p. iv. *. which are mixed with honey: they are also proper for opening scrophulous tumours. Of the same kind with this, but stronger, is that, which contains lime p. iv. *. pepper six grains, nitre, wax, of each p. x. *. honey p. iii. *. and a hemina of oil.

26.
Mico's relaxing, &c. malagma.

There is one of Mico's, which is relaxing, opening, and cleansing. It contains of bastard sponge, sulphur, nitre, pumice, equal parts; to these is added of pitch and wax a sufficient quantity to make it the consistence of cerate.

27.
Aristogenes's malagma for the bones, &c.

Aristogenes's malagma for the bones consists of these ingredients: of sulphur p. i. *. turpentine resin, aphronitre, and the pulp of a squil, washed lead(43), each p. ii. *. soot of frankincense p. viii. *. the mellowest dry figs, beef suet, each p. viii. *. wax p. xii. *. Macedonian iris p. vi. *. sesamum toasted and acetabulum. And this malagma is very agreeable to the nerves and joints.

28.
Euthycleus's malagma for the joints, &c.

That, which was invented by Euthycleus, is proper for the joints, and for all pains, particularly in the bladder, and any contraction of the joints from a recent cicatrix, which the Greeks call anchyla[DV]. It contains soot of frankincense an acetabulum, the same quantity of resin, galbanum without its stalks an ounce and half, ammoniacum, bdellium, of each p. *. wax

$\frac{1}{2}$

p. *——There is also another, which consists of iris, ammoniacum, galbanum, nitre, each p. xiv. *. liquid resin p. vi. *. wax p. xvi. *.

29.
Sosagoras's
for the same.

Sosagoras's malagma for pains of the joints: of calcined lead, poppy-tears, bark of henbane, storax, hog's fennel, suet, resin, and wax, equal parts.

30.
Chrysippus's.

Chrysippus also composed one: of liquid resin, sandarach, pepper, each p. xii. * to these a little wax is added.

31.
Ctesiphon's.

Ctesiphon's: of Cretan wax, turpentine resin, the reddest nitre, each

$\frac{1}{2}$

p. *. three cyathi of oil. But the nitre is first rubbed for three days with water dropped in upon it, and boiled with a sextarius of it, till all the moisture be

consumed.——This composition is also good for parotids, tubercles, and the scrophula, and for softening every collection of humour.

32.
For the joints.

To the joints one may properly apply a part of a dry fig mixed with cat-mint; or staveacre without the seeds, with penny-royal.

33.
Ariston's for the gout in the feet.

The same composition is useful for the gout in the foot. But for that ailment Ariston has also composed one, containing of nard, cinnamon, cassia, chamaeleon, round cyperus, each p. viii. *. goat's suet melted in iris ointment p. xx. *. iris p. i. *. which ought to lie in the strongest vinegar for twenty days. The same also discusses recent tubercles, and all pains.

34.
Theoxenus's for pained feet.

But for pains of the feet Theoxenus mixed, of kidney suet a third part, of salt two parts, and applied them spread upon a piece of leather; then put over it ammoniacum thymiama dissolved in vinegar.

35.
Numenius's for the gout,

&c.

But Numenius mollified the gout in the feet, and other indurated joints with the following composition: southernwood, dry roses, poppy-tears, of each p. iii. *. turpentine resin p. iv. *. frankincense, aphronitre, each p. viii. * iris, birthwort, each p. xii. *. wax p. iii. * to these is added one cyathus of cedria(44), three cyathi of laurel oil(45), and a sextarius of bitter oil.

36.
Dexius's
malagma for
a callus, &c.

For a callus formed upon the joints, Dexius directed the following application: of lime, p. iv. *. ceruss, p. viii. *. pine resin xx. *. pepper thirty grains, wax p. ii. *. And while these are beat up a hemina of mild wine is poured in.

CHAP. XIX.

OF PLAISTERS.

Of plaisters there are none more useful, than those, which are immediately applied to bloody wounds; the Greeks call them enaima[DW]. For these repel an inflammation, unless it be excited by something very violent, and even then they diminish its force, and agglutinate wounds, which are not inflamed, and cicatrize them. They consist of medicines not fat, and therefore by the Greeks are called alipaina[DX].

1.
Barbarium
plaister.

The best of these plaisters is that, which is called barbarum. It contains of rasile verdigrease(46) p. xii. *. litharge p. xx. *. alum, dry pitch, dry pine resin, each p. i. *. to which is added of oil and vinegar each a hemina.

2.
The choacon.

There is another for the same, which is called choacon; it contains of litharge p. x. *. dry resin as much. But the litharge is first boiled in three heminæ of oil. The colour of both these plaisters is black, which generally results from pitch and resin, as the blackest is from bitumen; from verdigrease, or scales of copper, green; from minium, red; from ceruss, white.

3.
The basilicon.

There are a very few compositions, in which the variety of the mixture causes some different appearance; therefore that also is black, which is called basilicon. It contains of opopanax p. i. *. galbanum p. ii. *. pitch and resin, of each p. x. *. half a cyathus of oil.

4.
The smaragdine.

But that, which is very green, is called smaragdine, in which there are of pine resin. p. iii. *. wax p. i. *. verdigrease $\frac{1}{2}$ p. *. flour of frankincense p. ii. *. as much oil and vinegar, with which *last* the flour and verdigrease are united.

5.
The rufum.

There is also one of a reddish colour, which seems to bring wounds to cicatrize quickly: it consists of frankincense p. i. *. resin p. ii. *. copper scales p. iii. *. litharge p. xx. *. wax p. c. *. of oil a hemina.

6.
The paracolleticon.

Besides, there is another, which from agglutinating is called paracolleticon[DY] It contains bitumen, scissile alum, p. iv. *. litharge p. iv. *. and a hemina of old oil.

7.
Philotas's cephalic plaister.

Besides these there are some of the same kind, which, because they are particularly adapted to fractures of the skull, are by the Greeks called cephalica[DZ]. Philotas's composition contains of Eretrian earth, chalcitis, each p. iv. *. myrrh, calcined copper, each p. x. *. isinglass p. vi. *. rasile verdigrease, round alum, crude misy, birthwort, each p. viii. *. copper scales p. xx. *. male frankincense p. ii. *. wax p. i. *. rose and bitter oil three cyathi, and a sufficient quantity of vinegar for rubbing down all the dry ingredients.

8.
A green one.

There is another for the same purpose green; which consists of calcined copper, copper scales, myrrh, isinglass, each p. vi. *. crude misy, rasile verdigrease, birthwort, round alum, each p. viii. *. wax p. vi. *. a hemina of oil, and of vinegar a sufficient quantity.

9.
The tetra-pharmacum.

For promoting a suppuration there is nothing better than that, which is very quickly prepared, and by the Greeks is called tetrapharmacum[EA]. It contains equal parts of wax, pitch, resin, and beef suet; if the last cannot be had, veal suet.

10.

Ennea pharmacum.

There is another for the same intention, which is called ennea pharmacum[EB], which cleanses more; it consists of nine ingredients, wax, honey, suet, resin, myrrh, rose oil, marrow either of a deer or calf, or beef, or œsypum(47), and butter. These also are mixed in equal quantities.

But there are some plaisters, that answer both these intentions at once; which, unless the case requires distinct applications for each, are preferable; otherwise they are worse, and never to be made use of, but either when both intentions are proposed together, or when, though the plaisters are wanted singly, they are not to be had by themselves. But where there is choice, they are to be rejected, and such only applied as are peculiarly suited to the end to be obtained. For example I will mention two.

11. Attallum plaister.

There is then the Attalum plaister for wounds: which contains of copper scales p. vii. *. soot of frankincense p. xv. *. ammoniacum as much, liquid turpentine resin p. xxv. *. beef suet the same quantity, three heminæ of vinegar, a sextarius of oil.

12. Judæus's plaister.

But amongst those, which are proper for a fractured skull, some use that, which is said to be invented by

Judæus. It consists of the following ingredients: salt p. iv. *. red copper scales, calcined copper, each p. xii. *. ammoniacum thymiama, soot of frankincense, dry resin, each p. vi. *. Colophonian resin, wax, veal suet cured, each p. xx. *. a cyathus and half of vinegar is added, and less than a cyathus of oil. What the Greeks call tetherapeumena[EC], we call curata, *cured*; when for instance from the suet all the little membranes are carefully taken away, and so in any other medicine.

13.
Diadaphnidon.

There are also some plaisters greatly celebrated for drawing, which are likewise distinguished by the name of epispastica[ED]. Such as is that, which because bay-berries are among the ingredients, is called diadaphnidon[EE]. In it there is turpentine resin p. x. *. nitre, wax, dry pitch, bay-berries, each p. xx. *. and a little oil. Now as often as I shall mention a berry or a nut, or any thing of that nature, it will be proper to know, that before it be weighed, the exterior, pellicle is to be taken from it.

14.
Another.

There is another of the same name, which is also for promoting a suppuration. Of veal suet, ammoniacum thymiama, pitch, wax, nitre, bay-berries, dry resin, birthwort, pellitory, of each equal parts.

15.
Philocrates's.

Besides these there is one of Philocrates: which contains sal ammoniac p. vii. *. birthwort p. viii. *. wax, turpentine resin, soot of frankincense, each p. xv. *. litharge p. xxxii. *. To these, that it may serve also for promoting a suppuration, are added iris p. iii. *. galbanum p. vi. *.

16.
Rhypodes.

However that is best for drawing, which from its resemblance to sordes, the Greeks call rhypodes[EF]. It contains myrrh, saffron, iris, propolis, bdellium, the heads of pomegranates, scissile and round alum, misy, chalcitis, boiled copperas(48), opopanax, sal ammoniac, viscum, each p. iv. *. birthwort p. viii. *. copper scales p. xvi. *. turpentine resin p. lxxv. *. wax, and suet, either beef or goat's, each p. c. *.

17.
Hecatæus's.

Hecatæus also is the author of a plaister of the same kind, which is thus composed: galbanum p. ii. *. soot of frankincense p. iv. *. pitch p. v. *. wax and turpentine resin, each p. viii. *. with these a little iris ointment is mixed.

18.
The green
Alexandrian.

The green Alexandrian drawing plaister is efficacious for the same purpose. It contains scissile alum p. viii. *. sal ammoniac p. vii. *. copper scales p. xvi. *. myrrh, frankincense, each p. xviii. *. wax p. cl. *.

colophonian or pine resin p. cxc. *. a hemina of oil, and a sextarius of vinegar.

19.
An eating
plaister.

Some plaisters are eating, which the Greeks call septica[EG], such as is that, which contains turpentine resin, soot of frankincense, of each p. ii. *. copper scales p. i. *. labdanum p. ii. * the same quantity of alum, litharge p. iv. *.

20.
Another for
eating, &c.

This plaister also eats away flesh vehemently, and even dissolves the bones, and keeps down fungous flesh. It contains litharge, copper scales, of each an ounce; nitre that has not felt the fire, Asian stone, birthwort, of each a sextans, wax, turpentine resin, frankincense, old oil, copperas, sal ammoniac, $\frac{1}{2}$ p. rasile verdigrease p. bessis, of squill vinegar a hemina, and a like quantity of Aminæan wine.

21.
Diogenes's
black plaister.

There are also some calculated against bites; such as the black one of Diogenes: which contains of bitumen, wax, dry pine resin, each p. xx. *. litharge p. c. *. of oil a sextarius. Or that, which consists of copper scales p. iv. *. ceruss and rasile verdigrease each p. viii. *. ammoniacum p. xii. *. wax, pine resin,

each p. xxv. *. litharge p. c. *. of oil a sextarius. Or that, which is composed of copper scales p. xiv. *. galbanum p. vi. *. ceruss and rasile verdigrease, each p. viii. *. ammoniacum p. xii. *. wax, pine resin, of each p. lv. *. with these the litharge is boiled.

22.
Red Ephesian plaister.

There is a red plaister of the same virtues, which is called Ephesian. It contains turpentine resin p. ii. *. galbanum p. iv. *. Sinopian minium p, vi. *. soot of frankincense p. vi. *. wax p. viii. *. litharge, p. lvi. *. old oil a hemina.

23.
Another.

Likewise that which consists of the following materials; copper scales, soot of frankincense, of each p. iv *. galbanum p. vi. *. sal ammoniac p. xii. z. *. wax p. xxv. *. with three heminæ of oil. These also are proper applications for other recent wounds.

24.
A white lenient plaister.

There are also white lenient plaisters, by the Greeks, *from their colour*, called leuca[EH], generally calculated for slight wounds, and especially those of old men: such as is that, which contains of ceruss p. lii. *. veal suet cured and wax, each p. lviii. *. three heminæ of oil, with which the ceruss is boiled up.

25.

Elephantine plaister.

Another, which consists of ceruss p. xx. *. wax p. lv. *. a hemina of oil, and a sextarius of water. Now as often as these are added, to ceruss or litharge, we may take it for granted, that they are to be boiled with them. This last composition is very white, and therefore it is called elephantine.

26.
A lenient plaister.

There are also some lenient plaisters, which the Greeks commonly call lipara[EI], as that which contains minium p. iv.*. litharge, p. xxv. *. wax and hog's lard, each p. xxxv. *. and the yolks of four eggs.

27.
Another.

Another composition of the same kind: wax, turpentine resin, of each p. v. *. ceruss p. viii. *. litharge, dross of lead (scoria molybdi the Greeks call it) each p. x. *. cicine(49) and myrtle oil, each the third part of a hemina.

28.
Archagathus's.

Another, which is said to be invented by Archagathus: burnt misy, calcined copper, each p. iv. *. burnt(50) ceruss p. viii. *. turpentine resin p. x. *. litharge p. vi. *.

29.

Another for the same purpose.

For the same purpose: litharge, wax, hog's lard, of each p. xxvii. *. boiled yolks of eggs, with a hemina of rose oil. Or this composition: cerate made of myrtle oil three parts, hog's lard a fourth part, a little lead dross. Or the following composition; of litharge half a pound boiled with a hemina of oil, and a like quantity of sea water, till it cease to bubble, with the addition of a little wax. Or this: equal parts of wax, suet, antimony, litharge, and ceruss.

CHAP. XX.

OF TROCHES.

1.
Troche for agglutinating.

Troches also have different virtues. For there are some adapted to agglutinate and heal recent wounds: such is that, which contains chalcitis, misy, aphronitre, flower of copper, galls, scissile alum moderately burnt, of each p. i. *. calcined copper, the heads of pomegranates, each p. iii. *. This should be diluted with vinegar, and so laid on, when a wound is to be agglutinated. But if it be a nervous or muscular part, it is better to mix it with cerate, so as to have a ninth part of the latter with eight of the other.

2.
Another.

Another for the same purpose. It consists of the following materials: bitumen, scissile alum, of each p. i. *. calcined copper p. iv. *. litharge p. xi. *. and a sextarius of oil.

3.
The sphragis of Polybus.

But that of Polybus(51) is by far the most celebrated: it is called sphragis[EJ]. Which contains of scissile alum p. iv. *. copperas p. ii. *. myrrh p. v. *. aloes a

like quantity; the heads of pomegranates, ox gall, each p. vi. *. which being rubbed together, are incorporated with austere wine.

4.
Troche for foul ulcers.

For foul ulcers, and blackness in the ears, nose, obscene parts, and inflammation in any of these places: of chrysocolla p. i. *. copperas, scissile alum, each p. ii. *. bark of winter cherry p. iv. *. minium p. vi. *. litharge p. xii. *. ceruss p. xvi. *. these are compounded with vinegar, and diluted when used.

5.
Andro's troche.

Andro's is for an inflamed uvula, for foulness in the obscene parts, or gangrenes in the same; of galls, copperas, myrrh, each p. i. *. birthwort, scissile alum, each p. ii. *. heads of pomegranates p. xxv. *. compounded with passum, and when they are to be used, diluted with vinegar or wine, according as the disorder, which is to be cured, is more or less violent.

6.
A troche for fissures of the anus, &c.

For fissures in the anus, or an effusion of blood from the hæmorrhoidal veins, or a gangrene, the following is of peculiar efficacy; of verdigrease p. ii. *. myrrh p. iv. *. gum p. viii. *. frankincense p. xii. *.

antimony, poppy tears, acacia, each p. xvi. *. which are both rubbed down with wine, and when used, diluted with the same liquor.

7.
Troche for expelling a stone from the bladder.

This composition seems proper to expel a stone out of the bladder along with the urine: equal parts of cassia, saffron, myrrh, costus, nard, cinnamon, liquorice root, balsam, hypericum are powdered; then mild wine is dropped in, and the troches are formed. Each may contain p. i. *. and one of these may be swallowed every day in the morning fasting.

CHAP. XXI.

OF PESSARIES.

These three kinds of compositions, that is, malagmas, plaisters, and troches, are extensive and various in their uses. But there are other things also useful: as those, which are applied below to females: the Greeks call them pessi[EK]. The manner of them is this: the composition is received in soft wool, and this wool put into the vagina.

1.
Pessary for evacuating blood.

For evacuating blood, to two of the small kind of figs called cauneæ(52) is added nitre p. i. *. Or the seed of garlick is powdered, and a little myrrh added and mixed with susine ointment(53). Or the pulp of a wild cucumber is diluted in woman's milk.

2.
For softening the womb.

To soften the womb, the yolk of an egg, and fenugreek, and rose oil, and saffron are mixed together. Or of elaterium p. iii. *. as much salt, and stavesacre p. vi. *. are incorporated with honey.

3.
Boethus's for the same.

There is another invented by Boethus, which contains saffron, turpentine resin, each p. iv. *. myrrh p. iii. *. rose oil p. i. *. veal suet p. iii. *. wax p. ii. *. mixed together.

4.
Numenius's
for an inflam-
mation.

The best composition against an inflammation of the womb, is that of Numenius, which contains saffron p. iii. *. wax p. i. *. butter p. viii. *. goose fat p. xii. *. two boiled yolks of eggs, with less than a cyathus of rose oil.

5.
For expelling
a dead fœtus.

If a fœtus has died within the womb, that it may be the more easily expelled, the bark of pomegranates must be rubbed down with water, and then made use of.

6.
For hysterick
fits.

If a woman from an hysterick disorder is subject to fits, snails together with their shells must be burnt and powdered, and then honey added to them.

7.
For
conception.

If a woman does not conceive(54), lions fat must be

softened with rose oil.

CHAP. XXII.

MEDICINES USED EITHER IN A DRY FORM, OR MIXED WITH LIQUIDS.

1.
Powder for fungous flesh.

There are some mixtures of medicines made use of dry without being brought to any consistence, which we sprinkle on, or mix with some liquid, and lay them on. Such as that for eating down fungous flesh, which contains of copper scales, soot of frankincense, each p. i. *. verdigrease p. ii. *. Now this same composition with honey cleanses ulcers; and with wax fills them up. Also, if misy, galls, and cadmia be mixed in equal proportions, they consume the flesh; and these may either be sprinkled on dry(55), or brought to a consistence and spread on.

2.
For restraining putrid flesh.

Honey mixed either with lentils, or with horehound, or with olive leaves first boiled in wine, restrains putrid flesh, and does not suffer it to spread, and is gently corrosive. Also mellilot boiled in mulse, and then rubbed small. Or lime with cerate. Or bitter almonds with a third part of their quantity of garlick, and a little saffron added to them. Or that, which contains litharge p. vi. *. burnt ox horn p. xii. *.

myrtle oil and wine, each three cyathi. Or that, which consists of the following things: the flowers of pomegranate, copperas, aloes, of each p. ii. *. scissile allum, frankincense, each p. iv. *. galls p. viii. *. birthwort p. x. *. The following is stronger, and even caustic; orpiment with chalcitis, and either nitre, or lime, or burnt paper. Also salt with vinegar. Or that composition, which contains chalcitis, pomegranate tops, aloes of each p. ii. *. scissile alum, frankincense, each p. iv. *. galls p. viii. *. birthwort p. x. *. and a sufficient quantity of honey to bring them to a proper consistence. Or cantharides, sulphur, of each p. i. *. darnel p. iii. *. with the addition of as much liquid pitch as will keep them together. Or even chalcitis mixed with resin and rue: or diphryges with the same resin; or stavesacre with liquid pitch. There is the same property in burnt lees of wine, and equal parts of lime and nitre. Or scissile alum p. i. *. frankincense, sandarach, nitre, each p. i. *. galls p. viii. *. birthwort p. x. *. and a sufficient quantity of honey.

3.
Hera's composition.

There is also a composition of Hera's, which contains myrrh, chalcitis of each p. ii. *. aloes, frankincense, scissile alum, each p. iv. *. birthwort, unripe galls, each p. viii.*. pomegranate bark powdered p. xx. *.

4.
Judæus's.

There is likewise one by Judæus: in which are two parts of lime, and a third of the reddest nitre; which

are mixed with the urine of a young boy, till they be of the consistence of strigment. But the part, upon which this is spread, must be moistened now and then.

5.
Jollas's.

But Jollas mixed of burnt paper, sandarach, each p. i. *. lime p. ii. *. and the same quantity of orpiment.

6.
For an hæmorrhage.

7.
For cicatrizing ulcers.

But if there is blood discharged from that membrane, which covers the brain, the yolk of an egg ought to be burnt, powdered, and sprinkled upon it. If the hæmorrhage is from any other part, orpiment, copper scales, of each p. i. *. sandarach p. ii. *. burnt marble(56) p. iv. *. ought to be sprinkled on. The same things also resist a gangrene. To bring on a cicatrix, copper scales, soot of frankincense, of each p. ii. *. lime p. iv. *. p. The same mixture also keeps down fungous flesh.

8.
Timæus's for the ignis sacer.

Timæus made use of the following composition for the ignis sacer(57) and a gangrene; of myrrh p. ii. *. frankincense, copperas, each p. iii. *. sandarach,

orpiment, copper scales, each p. iv. *. galls p. vi. *. burnt ceruss p. viii. *. These have the same effect whether sprinkled on dry, or mixed with honey.

Sternutatory medicines.

Sneezings are excited by putting into the nose either white hellebore, or struthium. Or this mixture: of pepper, white hellebore each p. iii. *. castor p. i. *. aphronitre p. ii. *. struthium p. iii. *.

Gargarisms.

Gargarisms are used either to alleviate, or to repel, or to evacuate. Milk cream of ptisan, or bran, are lenients. A decoction either of lentils, or roses, or brambles, or quinces, or dates, are repellent. Mustard and pepper are evacuants.

CHAP. XXIII.

OF ANTIDOTES, AND THEIR USES.

Antidotes, though seldom wanted, are sometimes extremely necessary, because they relieve in the most dangerous cases. They are properly exhibited, when bodies are bruised either by blows, or by falling from a height, or in pains of the bowels, sides, fauces, and more internal parts. But their principal use is against poisons either injected into our bodies by bites, or received with meat or drink.

1.
Antidote.

There is one, which contains poppy tears p. *. z. acorum, malobathrum(58) p. v. *. Illyrian iris, gum, of each p. ii. *. anise p. iii. *. Gallican nard, dry rose leaves, cardamom, each p. iv. *. parsley p. *. iii. z. trefoil p. v. *. black cassia(59), silis, bdellium, balsam fruit, white poppy seed, each p. *. z. storax p. *. v. z. myrrh, opopanax, Syrian nard, male frankincense, juice of hypocistis, each p. vi. *. castor p. vi. *. costus, white pepper, galbanum, turpentine resin, saffron, flower of round cyperus, each p. vi. *. z. liquorice p. viii. *. z. these are incorporated with honey or passum.

2.
Antidote called ambrosia.

Another antidote, which Zopyrus is said to have compounded for king Ptolemy, and called it ambrosia, consists of the following things: costus, male frankincense, of each p. v. *. white pepper p. *. z. flower of round cyperus p. ii. *. cinnamon p. iii. *. black cassia p. iv. *. Cilician saffron p. *. iv. z. the myrrh called stacte(60) p. v. *. Indian nard p. *. v. z. which being powdered separately, are incorporated with boiled honey: then when it is used, the bigness of an Egyptian bean must be diluted in a draught of wine.

3.
Mithridates's antidote.

But the most celebrated is that of Mithridates: by taking which every day, this king is said to have rendered his body secure against the danger or poisons. It contains the following things: of costus p. *. z. acorus p. v. *. hystericum, cummin, sagapenum, juice of acacia, Illyrian iris, cardamom, each p. ii. * anise p. iii. * Gallican nard, gentian-root, dry rose leaves, each p. iv. *. poppy tears, parsley, each p. *. iv. z. cassia, siler, darnel, long pepper, each p. vi. *. storax p. *. v. z. castor, frankincense, juice of hypocistis, myrrh, opopanax, each p. vi. *. malobathrum leaves p. vi. *. flower of round cyperus, turpentine resin, galbanum, seed of Cretan carrot, each p. *. v. z. nard, opobalsam, each p. *. vi. z. treacle mustard p. *. vi. pontic root(61) p. vii. *. saffron, ginger, cinnamon, each p. *. viii. These are powdered and mixed with honey, and against poison the bigness of a sweet almond is given in wine. In

other disorders of the body, according to their violence, either the bigness of an Egyptian bean, or a vetch, will be sufficient.

CHAP. XXIV.

OF ACOPA.

Acopon for the nerves.

Acopa(62) are useful to the nerves. Such is that, which contains flower of round cyperus p. *. ii. z. z. costus, long cyperus, bay berries, ammoniacum, cardamom, each p. *. iv. z. myrrh, calcined copper, each p. vii. *. Illyrian iris, wax, each p. iv. *. Alexandrian reed, round cyperus, calambac wood, xylo-balsam, each p. xviii. *. suet p. i. *. iris ointment a cyathus.

Another called elæodes.

There is another, which they call elæodes[EL]; it is made in this manner: of wax p. *. z. oil a like quantity, and of turpentine resin the bulk of a walnut; these are boiled together: then being poured into a mortar, are rubbed, and an acetabulum of the best honey is gradually dropped into it, then three cyathi of iris ointment and of rose oil.

Of enchrista. One for cleansing and filling ulcers.

The Greeks call liquids, that are daubed on, by the name of enchrista[EM]. Such as is that for cleansing and incarning ulcers, especially amongst nerves. It

consists of a mixture of equal parts of butter, veal marrow, veal suet, goose fat, wax, honey, turpentine resin, rose and cicine oil. These are all melted separately, then mixed while they are liquid, and afterwards rubbed together. And this composition is indeed more cleansing: but it would be more emollient, if instead of the rose oil, that of cyprus be infused.

For the ignis sacer.

For the ignis sacer: of litharge p. vi. *. ox-horn burnt p. ii. *. these are beat up together, and there is added alternately wine, and myrtle wine, till three cyathi of each be used.

CHAP. XXV.

OF CATAPOTIA.

1.
Anodyne
catapotium
for concoc-
tion.

There are catapotia of various kinds, and composed for different intentions. They call those anodyna[EN], which mitigate pain by sleep: which it is not fit to use, unless there be a very great necessity. For they consist of medicines strong and ungrateful to the stomach. Yet that even promotes concoction, which contains poppy tears, galbanum, of each p. i. *. myrrh, castor, pepper, each p. ii. Of these it is sufficient to swallow the bigness of a vetch.

2.
Another
stronger.

Another, which is more powerful to promote sleep, but worse for the stomach, consists of the following ingredients. Of mandrake p. *. z. seeds of smallage and henbane, each p. iv. *. which are rubbed down with wine. The same quantity of this, as was directed of the other, is a plentiful dose.

3.
A quieting
catapotium
for pains of

the head, &c.

If there be pains of the head, or ulcers, or a lippitude, or tooth-ach, or difficulty of breathing, or pains of the intestines, or inflammation of the womb, or the hip, or a pain in the liver, spleen, or side, or if a woman falls into hysterick fits, and loses her speech, a catapotium of the following kind removes the pain by sleep. Sil(63), acorum, seed of wild rue, each p. ii. *. castor, cinnamon, each p. ii. *. poppy-tears, root of panaces, dry mandrake fruit, flower of round cyperus, of each p. ii. *. pepper lvi. grains. These being powdered separately, are again all rubbed together, dropping in now and then passum, till they acquire the consistence of sordes. A little of this is either swallowed, or diluted in water, and given to drink.

4.
Another of more general use.

Moreover a handful of wild poppy, when it is just ripe for gathering the tear, is put into a vessel, and upon it is infused a sufficient quantity of water to cover it, and thus it is boiled. When this handful has been well boiled, let it be squeezed and thrown away; and with the liquor let an equal quantity of passum be mixed, and let them boil together, till it be as thick as sordes. When it has cooled, it is made into catapotia of the bigness of our bean, which have an extensive use. For they both procure sleep, either taken alone, or given in water, and with the addition of a little juice of rue and passum mitigate ear-aches:

and dissolved in wine they stop a dysentery: and mixed with cerate made of rose oil, to which a little saffron is added, they restrain an inflammation of the womb. And spread upon the forehead with water, they stop the flux of gum to the eyes.

5.
For a pain of the womb.

Again, if a pain of the womb prevent sleep, a mixture is made of saffron p. ii. *. anise, myrrh, each p. i. *. poppy tears p. iv. *. hemlock seed p. viii. *. and these incorporated with old wine, and the bigness of a lupin is diluted with three cyathi of water. But this is dangerous to give in a fever.

6.
Catapotium for healing the liver.

For healing the liver, of nitre p. *. z. saffron, myrrh, Gallican nard, each p. i. *. are mixed with honey, and the bigness of an Egyptian bean serves for a dose.

7.
For pains in the sides.

For removing pains of the sides, equal parts of pepper, birthwort, nard, and myrrh are mixed together.

8.
Of the thorax.

For pains of the thorax, of nard p. i. *. frankincense, cassia, each p. iii. *. myrrh, cinnamon, each p. vi. *. saffron p. viii. turpentine resin a quadrans, honey three heminæ.

9.
Athenio's for a cough.

For a cough is that of Athenio: of myrrh, pepper, each p. i. *. castor, poppy tears, each p. i. *. which are bruised separately, and afterwards mixed, and two catapotia of the bulk of our bean are given in the morning, and two, when the patient is going to sleep at night.

10.
Heraclides's anodyne catapotium for a cough.

But if a cough prevents sleep, that of Heraclides the Tarentine is calculated for both disorders: of saffron p. i. *. cinnamon, castor, poppy tears, each p. i. *. myrrh, long pepper, costus, galbanum, each p. *. z.

11.
Catapotium for foul ulcers in the fauces.

But if ulcers in the fauces of patients labouring under a cough require to be cleansed, of panaces, myrrh, turpentine resin, each p. v. *. galbanum p. *. z. hyssop p. *. z. are to be rubbed together, and to these a hemina of honey is added, and as much as

can be taken upon the finger must be swallowed.

12.
The colice of
Cassius.

The colice of Cassius consists of the following ingredients: of saffron, anise, castor, each p. iii. *. parsley p. iv. *. pepper both long and round, each p. v. *. poppy-tears, round cyperus, myrrh, nard, each p. vi. *. which are incorporated with honey. And this may be both swallowed alone, and taken in warm water.

13.
For expelling
a dead fœtus.

A draught of water mixed with sal ammoniac p. i. *. or dittany of Crete p. i. *. expels a dead fœtus or the secundines.

14.
To forward
labour.

To women in labour hedge mustard ought to be given in tepid wine, when they are fasting.

15.
For the voice.

The voice is assisted by p. i. *. of frankincense given in two cyathi of wine.

16.
For a dysury.

Against a difficulty of urine: of long pepper, castor,

myrrh, galbanum, poppy tears, saffron, costus, each one ounce, storax, turpentine resin, of each a sextans, wormwood, honey, a cyathus. Of these the bigness of an Egyptian bean ought to be given in the morning, and after supper.

17.
The composition of arteriace.

Arteriace is made in this manner: of cassia, iris, cinnamon, nard, myrrh, frankincense, each p. i. *. saffron, p. i. *. pepper thirty grains, are boiled in three sextarii of passum, till they acquire the consistence of honey. Or saffron, myrrh, frankincense, of each p. i. *. are mixed with the same quantity of passum, and boiled in the same manner. Or three heminæ of the same passum are boiled, till a drop of it grows hard; and p. i. *. of powdered cassia is added to it.

CHAP. XXVI.

OF FIVE DIFFERENT KINDS OF DISORDERS INCIDENT TO THE BODY; AND OF THE NATURE, SYMPTOMS, AND CURE OF WOUNDS.

Having explained the virtues of medicines, I shall next consider five different kinds of disorders, to which the body is incident. When it is hurt externally, as in wounds. When any part is corrupted internally, as in a gangrene. When any thing grows within some part, as the stone in the bladder. When any part is preternaturally enlarged, as a vein, which swelling is called a varix. Lastly, when somewhat is deficient, or maimed. In some of these medicines, in others manual operations are most useful. Deferring the consideration of the disorders, which chiefly require manual operations, I shall now treat of such, as stand mostly in need of medicines. And I shall divide this part of medicine in the same manner as the former, and first speak of those, which may happen in any part of the body; next of these, which attack certain parts. I shall begin with wounds.

Rules for the conduct of the physician.

Now a physician should above all things know, what are incurable, what difficult to cure, and what more easy. For it is the part of a prudent man first, not to undertake one, whose case is desperate, lest he appear to have killed him, whom his own destiny has destroyed. Next, in a case of great danger, but not

quite desperate, to discover to the friends of the patient, that it is a matter of difficulty: that if the malady should prevail against the art, he may neither seem to have been ignorant himself, nor to have deceived them. But as this is the proper conduct for a prudent person, so on the contrary it is the part of a quack to exaggerate a small matter, that he may appear to have performed the greater cure. Where a case is easy, it is reasonable that the physician by a free declaration of its easiness be obliged to the greater diligence and circumspection; that what is in itself small may not by his negligence become more considerable.

Incurable wounds.

A person cannot be preserved, when the basis of the brain, or the heart, or the gullet, or the portæ of the liver, or the spinal marrow is wounded; or when the middle of the lungs, or the jejunum, or smaller intestine, or stomach, or kidneys are wounded; or when the large veins or arteries about the throat are cut through.

Wounds difficult to cure.

The cure is difficult in such as are wounded either in any part of the lungs, or the thick part of the liver, or the membrane that contains the brain, or in the spleen, or womb, or bladder, or any intestine, or the diaphragm. Such also are in a very dangerous situation, in whom the point of a weapon has penetrated as far as the large blood vessels, that lie

deep in the arm-pits and hams. And all wounds are dangerous, wherever there are large blood-vessels, because they may exhaust a person by the profusion of blood. And this happens not only in the arm-pits and hams, but likewise in the veins, which go to the anus and testicles. Besides these, any wound in the arm-pits, or the inside of the thighs, or in any cavity, or between the fingers(15) is bad. Also by which a muscle, or nerve, or artery, or membrane, or bone, or cartilage, is hurt.

Safe wounds.

A wound in the flesh is safest of all, and these again from their situation are either worse or better. But a wound when large is dangerous from its size.

The nature and figure of wounds.

The nature of the wound also and its figure make some difference; for when a part is both cut and bruised, it is worse than when it is only cut asunder; so that it is better to be wounded by a sharp weapon, than a blunt one. And that wound is worse, out of which any substance is cut, or where the flesh is carried off on one part, and hangs on the other. In general, those wounds are the worst, that are crooked: and those safest that are of a straight direction. And then, the nearer the wound approaches to the first or second of these forms, it is more or less dangerous.

Consideration of the age,

constitution, and season.

Moreover the age, constitution, the way of life *of the patient*, and the season of the year, are of some importance: for a boy or a youth recovers more easily than one that is older; the strong than the infirm; one, that is neither too slender nor too plethoric, than one, that is on either of these extremes; one of a sound than one of a corrupt habit; one, that takes exercise, than an indolent person; the sober and temperate than one given to wine and venery. Again, the most convenient season of the year for curing a wound is the spring; or at least when it is neither hot nor cold: for both excessive heat and intense cold are prejudicial to wounds; but most of all an alternate change of these: and for that reason the autumn is very hurtful.

Of wounds of the internal parts.

Most wounds are exposed to our view: but there are some, of which we judge from the situation of the parts, which we explained elsewhere, when we demonstrated the position of the internal parts. Nevertheless, because some of these lie superficial, and it makes a difference, whether a wound be in the surface, or has penetrated deeper; it is necessary to mention the appearances, by which we may know what is hurt within; and from which we are either to hope or despair.

Symptoms of the heart

being wounded.

When the heart is wounded, there is a great effusion of blood, the pulse is languid, the skin very pale, cold sweats with a bad smell come on, the same as in sickness: the extremities grow cold, and death quickly follows.

Of the lungs.

When the lungs are wounded, there is a difficulty of breathing; frothy blood is discharged from the mouth, and red blood from the wound; also along with the latter the air issues with a noise; the patient has an inclination to lie upon the wound; some start up without any reason. Many when they are lying upon the wound, are able to speak: if upon another part, they lose that faculty.

Of the liver.

The symptoms of a wounded liver are these: there is a great effusion of blood under the right side of the præcordia; the præcordia are drawn backward towards the spine; there is a pleasure in lying upon the belly; there are prickings and pains reaching as far as the clavicle and the broad bone of the shoulder, that is joined to it; to these there is sometimes added also a bilious vomiting.

Of the kidneys.

When the kidneys are wounded, the pain reaches to the groin and testicles; the urine is made with difficulty; and it is either bloody, or grumous blood

is voided.

Of the spleen.

But when the spleen is wounded, black blood issues out from the left side; the præcordia and stomach on the same side grow hard; a great thirst ensues; and a pain strikes up to the clavicle, as when the liver is wounded.

Of the womb.

But when the womb is wounded, there is a pain in the groin, and hips, and inside of the thighs; the blood is partly discharged by the wound, partly by the vagina; and a bilious vomiting follows. Some women lose their speech; some are delirious; others sensible, but complain, that they are tormented with a pain of their nerves and eyes: and when dying, have the same symptoms, as attend a wounded heart.

Of the brain or its membrane.

If the brain or its membrane has received a wound, blood is discharged by the nose, in some also by the ears and generally a bilious vomiting follows. The senses of some are impaired, and they do not perceive when they are called upon: the countenance of others is fierce; and their eyes roll different ways, as in a palsy; and commonly on the third or fifth day a delirium comes on. Many are likewise convulsed. Before death most of them tear the bandages, with which their head is bound up, and expose the naked wound to the cold.

Of the gullet.

When the gullet is wounded, a hiccough and bilious vomiting follow; if any meat or drink has been taken, it is quickly returned; the pulse grows languid; thin sweats come on, in which the extremities grow cold.

Of the stomach and jejunum, and other intestines.

The signs of a wound in the jejunum and stomach are the same; for the food and drink pass through the wound: the præcordia grow hard; sometimes bile is vomited. Only it must be observed, that the jejunum is situated lower than the stomach. When the other intestines are wounded, they emit either excrement, or its smell.

Of the spinal marrow.

When the spinal marrow is cut through, there follows either a palsy or convulsions; the patient becomes insensible; and after some time, the lower parts discharge involuntarily either seed, or urine, or excrement.

Of the diaphragm.

But if the diaphragm is wounded, the præcordia are drawn upward; there is a pain in the spine, an oppression of the breath, and a discharge of frothy blood.

Of the bladder.

When the bladder is wounded, the groin is pained, there is a tension of the parts immediately above the pubes; instead of urine comes blood; and the urine is discharged at the wound; the stomach is affected, so that the patients either vomit bile, or have a hiccough; a coldness seizes them, and after that death.

Of the discharge from wounds and ulcers. Blood, sanies, and pus.

These things being known, there still remain some other particulars to be observed relating to the wounds and ulcers, which we are to treat of. From wounds then and ulcers are discharged blood, sanies, and pus. Blood is known to every one. Sanies is thinner than blood, unequally thick, glutinous, and coloured. Pus is very thick and white, also more glutinous than either blood or sanies. Now blood is discharged from a recent wound, or one that is just healing: sanies appears betwixt these times: pus in an ulcer beginning to heal. Further, both sanies and pus are distinguished into several species by Greek names; for there is one kind of sanies, which is called ichor[EO], another melicera[EP]. There is also a species of pus called elæodes[EQ]. *Ichor.*Ichor is thin, of a whitish colour, and proceeds from a bad ulcer, and especially where a nerve has been hurt, and an

inflammation has followed. Melicera is thicker, more glutinous, whitish,*Melicera.* and somewhat resembling white honey: this also is discharged from malignant ulcers, where the nerves about the joints are hurt; and amongst the joints principally from the knees. Elæodes is thin, whitish, somewhat*Elæodes.* unctuous, in colour and fatness not unlike to white oil; and appears in large ulcers, that are healing. Now blood is bad that is either too thin or too thick, in colour either livid or black; or mixed with phlegm, or of various colours: the best is warm, red, moderately thick, and not glutinous. Therefore from the first the cure of a wound, which has yielded good blood, is more easy and quick: and afterwards there is more hope of those, from which the several discharges have been of the best kind. Sanies then is bad, where it is in great quantity, over thin, livid, or pale, or black, or glutinous, or fetid, or such as corrodes the ulcer itself and the adjacent skin. It is better, when the quantity is small, indifferently thick, of a reddish colour, or inclining to white. Ichor again is the worst, that is plentiful, thick, inclining to a livid or pale colour, glutinous, black, hot, fetid. It is more tolerable, if inclining to white, and when in all other respects it is the reverse of the former. But melicera is bad, when it is in great quantity, and very thick; better, when thinner, and less in quantity. Pus is the best amongst these. But even that too is bad, when it is copious, thin, diluted; and the more so, if it be such from the beginning; also if in colour it resemble serum, if it be pale, or livid, or feculent; moreover if it be fetid; unless the smell arises from the nature of the particular part, where the ulcer is. The less there

is of it, and the thicker, and whiter, so much the better; and also if it be smooth, if it have no smell, if it be homogeneous. In quantity, however, it ought to correspond both with the size and age of the wound: for a greater quantity is discharged naturally from a larger one; and more before the inflammation is removed, than afterwards. Elæodes also when plentiful, and containing but little fat, is bad: but the less there is of it, and the more oily so much the better.

Cure of a hæmorrhage from a wound.

These things being considered, when any person is wounded, that can be cured, two things are immediately to be regarded: that he do not perish either by a hæmorrhage, or an inflammation. If we are afraid of a hæmorrhage (which may be known from the situation of the wound and its largeness, and from the force of the stream of blood) the wound is to be filled with dry lint, and over it a sponge squeezed out of cold water must be applied, and pressed down with the hand. If this does not stop the blood, the lint is to be frequently changed: and if it have not strength enough dry, it must be moistened with vinegar. This is very powerful in stopping blood: and therefore some people pour it into the wound. But here again it is to be feared, that the matter being too forcibly retained there, may afterwards raise a great inflammation. Which is the reason why neither corroding medicines, nor such as are caustic, and therefore forming a slough, are to be

used, although most of these stop blood: but if recourse is ever had to them, such ought rather to be employed, as are the mildest in their operation. But if even these do not prevail against the hæmorrhage, the vessels, which discharge the blood are to be taken hold of, and tied in two places about the wounded part, and cut through, that they may both unite together, and nevertheless have their orifices closed. When the circumstances do not even allow of this measure, they may be cauterized with a hot iron. And in this case too, when there is a considerable hæmorrhage from a part, where there is neither nerve, nor muscle, in the forehead for instance, or upper part of the head, it is very proper to apply a cupping vessel to the opposite part, that the current of blood may be diverted thither.

Cure of the inflammation in wounds.

These then are the remedies against a haemorrhage: but for an inflammation the flux of blood itself is the cure. This may be apprehended, when either a bone has been hurt, or a nerve, or a cartilage, or a muscle, or when the haemorrhage has been too small in proportion to the size of the wound. Therefore when any thing of this kind happens, it will not be proper to stop the blood quickly, but to suffer it to flow as long as it is safe; insomuch that if the discharge has appeared small, it ought also to be taken from the arm; especially if the patient be young and robust, and used to exercise; much more, if he was intoxicated before he received the wound. And if a muscle shall appear to be wounded, it must be cut

through: for when it is only divided in part, it is mortal; cut quite through it admits of a cure.

The agglutination of wounds.

The blood then being either stopped, when the haemorrhage is excessive, or *more* taken away *by phlebotomy* when too small, it is far the best method to agglutinate the wound. Now this may be done, either when it is in the skin, or even in the flesh, if nothing else is hurt. It may be done, where the flesh is hanging down in one part, and adhering in another; provided however it be still sound, and nourished by its continuity with the body.

In wounds to be agglutinated there is a double method of cure. For if the wound be in a soft place, it ought to be sewed: and especially, if the extremity of the ear, or the lower part of the nose be cut, or the forehead, or the cheek, or the eye-brow, or the lip, or the skin about the throat, or the belly. But if the wound is in the flesh, and gapes, and its lips cannot be easily brought together, a suture is improper: and in this case fibulæ(64) are to be put on (the Greeks call them ancteres[ER]) to draw the lips a little closer; that the cicatrix may be the less broad after the cure.

Hence now it may be collected, whether a wound, in which the flesh is in one part depending, and in another adhering, if it is not yet corrupted, requires a suture, or a fibula. But neither of them ought to be applied before the wound be cleansed within, lest any concreted blood be left there. For that turns to pus, raises an inflammation, and prevents the wound

from being agglutinated. Even the lint, that is put into it to stop the bleeding, must not be left there; for that also inflames.

It will be necessary to take up with the needle, or the fibula, not only the skin, but also some of the flesh below it, that it may adhere the more strongly, and not break away the skin. Both of them are best done with soft thread(65), not too much twisted, that it may be the less uneasy to the part. Neither of them are to be applied at too great distances, nor too frequently: if at too great distances they will not hold; if too frequently they are very hurtful; because the oftener the needle has passed, and the more places are gauled by the fibula, so much the greater will the inflammation be; and especially in the summer-time. Neither of them requires any force; but the operation is only so far useful, as the skin follows the hand as it were of its own accord. Now the fibula commonly allows a wound to be broader: a suture joins its lips, but these should not touch one another in every part; that if any humour be collected within, there may be a passage for it to escape. But if a wound admits of neither of these, it ought nevertheless to be cleansed.

In the next place, upon every wound should be applied first a sponge squeezed out of vinegar: if any patient is not able to bear the strength of vinegar, wine must be made use of: a slight wound is helped by laying on a sponge squeezed even out of cold water. But in whatever way it is put on, it does good no longer than it is moist: therefore it must not be suffered to dry. A wound may be cured without foreign, scarce, and compound medicines. But if one

has not confidence in that method, he ought to apply a medicine, that is composed, without suet, of those things, which I mentioned to be proper for bloody wounds; and particularly if it be in the flesh, the barbarum: if it be a nerve, or cartilage, or any of the prominent parts, as the ears, or lips, the sphragis of Polybus. The green Alexandrian also is fit for the nerves; and for the prominent parts that, which the Greeks call rhuptousa[ES].

It is common also, where there is a contusion, for the skin to be a little broken. When this happens, it is not improper to make a larger opening with a knife; unless there be muscles and nerves near to it, which it is not fit to cut. When it is sufficiently opened, a medicine must be applied. But if the bruised part cannot admit the opening, though too small, to be enlarged, upon account of nerves or muscles, such applications are to be used, as may draw out the humour gently; and of that kind the fittest for the present purpose is the composition, which I said was called rhypodes. It is not improper also, wherever there is a severe wound, after applying(66) what is agreeable to it; to cover the whole with sordid wool moistened with vinegar and oil; or if the part be soft, a mild restringent cataplasm; if nervous, or muscular, an emollient.

The proper bandages for wounds.

For binding up a wound a linen roller is most convenient: and this ought to be bandages for so broad, that a single application of it may not only

cover the wound, but take in a little on each side of it. If the flesh has shrunk away more on one side, it is better to begin the rolling from thence; if equally on both sides, it ought to lay hold of the lips transversely; or if the nature of the wound does not admit of that, the middle of it is first put on, that it may be drawn afterwards both ways. Now it is to be bound on in such a manner, that it may both hold, and not be over tight. When it does not hold, it slides off; and that, which is over tight, hazards a gangrene. In the winter-time the roller ought to be carried round oftener; in the summer, no more than necessity requires. Then the extremity of it is to be sewed to the lower part of the bandage. For a knot hurts a wound, unless it be at a distance from it.

Moreover every person ought to know, that the viscera, which I mentioned before, require a particular method of cure. For the external wound is to be cured either by a suture, or some other method. In the bowels nothing is to be touched, unless some bit in the extremity of the liver, or spleen, or lungs be hanging out, which may be cut away. Otherwise the internal wound is to be cured by the diet and medicines, which I mentioned in the former book as agreeable to each viscus.

Directions for the patient's diet.

These steps being taken on the first day, the patient must be put to bed: and if the wound be severe, he ought to abstain from food, as much as his strength will permit, before the inflammation comes on; to

satisfy his thirst with warm water, or if it be in summer, and he have neither fever nor pain, the water may be cold. However no rule is so constant, but that a regard must always be had to the strength of the patient; so that his weakness may render it necessary to take food immediately, but such as is thin, and in small quantity, just sufficient to support him. And many sinking under a hæmorrhage, before any thing else be done, are even to be refreshed with wine; which is otherwise very prejudicial to a wound.

Good and bad symptoms in wounds.

It is dangerous for a wound to swell too much: not to swell at all is extremely dangerous. The first is a sign of a violent inflammation; the other of a mortification. If the patient be sensible, and no fever has come on, we may at once conclude, that the wound will be soon healed: and even a fever ought not to alarm us, if in a large wound it continue, while the inflammation subsists; it is bad, when it either supervenes to a slight wound, or lasts longer than the inflammation, or brings on a delirium; or if it does not remove a tetanus, or convulsion, that arose from the wound. Also an involuntary bilious vomiting coming on either immediately after the wound is received, or while the inflammation continues, is a bad symptom in those only, whose nerves, or nervous parts are wounded. However to take a vomit is not hurtful; especially in those, who have been accustomed to it; but neither immediately after meat, nor when the inflammation has begun,

nor when the wound is in the superior parts.

Dressings for wounds.

The wound being kept thus for two days, on third it must be opened, and the sanies must be wiped off with cold water, and the same kind of dressings put on. On the fifth day it will be easy to judge to what height the inflammation is to rise. On which day the wound must be uncovered again, and its colour observed. And if it be livid, or pale, or variegated, or black, we may be sure it is a bad wound: and whensoever this appearance is observed, it may alarm us. It is best for a wound to be white, or ruddy. Also a hard, thick, and painful skin denotes danger. It is a good sign, when this is free from pain, thin and soft. But if the wound is closed, or there be a slight swelling, the same application must be used as at first.

If the inflammation is violent, with no hopes of an agglutination, and does not yield, the use of warm water too is necessary, that it may dissipate the matter, and soften the hardness, and promote a suppuration. It must be of such a degree of warmth, as to be agreeable to the hand; and be continued so long, till it appear to have diminished in some measure the swelling, and restored a more natural heat to the ulcer. After this fomentation, if the wound does not gape much, a plaister should be applied immediately, and if it be a large wound, the tetrapharmacum would be best; in the joints, fingers, or cartilaginous parts, the rhypodes. But if it gapes pretty much, that same plaister must be softened

with ointment of iris, and lint spread with it must be laid over the wound; then the plaister applied above, and over that sordid wool; and the rollers must be also less tight than at first.

Peculiar directions for wounds in the joints.

But there are some peculiarities to be attended to in the joints. If the nerves, which secure them, are cut through, a weakness of that part follows. If that is uncertain, and the wound is from a sharp weapon, and that in a transverse direction, it is more easy to cure: and if it be from a blunt and heavy one, the figure of it makes no difference: but it must be observed whether the pus comes from above or below the joint. If it come from under it, and continue a long time white and thick, it is probable that a nerve is cut through, and the more so, the greater the pains and inflammations are, and the sooner they began. But although the nerve be not cut through, yet if a hard tumour continue round it long, the ulcer of necessity must be tedious, and even when that is healed, the tumour will remain; and it will be a considerable time before that limb recover its power either of extension or contraction. And it is longer before it can be extended, when the cure has been conducted with the joint bent, than it is before one can be bent, which we have kept straight. The limb, that is wounded, ought to be placed also in a certain position: if it is to be agglutinated, it must be laid high; if it is inflamed, so as to incline to neither side; if the pus has begun to flow, it must be kept in

a depending posture.

Rest too is an excellent remedy. Motion and walking are prejudicial, except to people in health: however, less dangerous to such as are wounded in the head or arms, than those, that are wounded in the lower parts. And walking is least of all proper, when the hurt is in the thigh, or the leg, or the foot. The place, where the patient lies, ought to be warm. Bathing also, while the wound is not clean, is extremely bad: for that renders it both tumid and foul; from whence the transition to a gangrene is common. Gentle friction is good; but in those parts, that are at a great distance from the wound.

Deterging of wounds.

After the inflammation is gone, the wound must be deterged. That end is best obtained by lint dipt in honey; and over that must be applied either the tetrapharmacum plaister, or the enneapharmacum. Now that ulcer is clean, which appears red, and is neither too dry nor too moist. But any ulcer that is deprived of its sensibility, or whose feeling is unnaturally exquisite, or that is either too dry or too moist, or that is either whitish or livid, or black, that ulcer is not clean.

Incarning of wounds.

After a wound is deterged, it must next be incarned; and for that purpose warm water is so far necessary, as to remove the sanies. The use of sordid wool is improper; it is better to cover it with such as has

been washed. And there are also some medicines, which conduce to the filling up of the wound; therefore it is not amiss to make use of them: such as butter with oil of roses, and a small proportion of honey; or the plaister tetrapharmacum with the same proportion of honey, or with the oil of roses; or lint dipped in oil of roses. But the bath used sparingly is more efficacious; and food of a good juice, avoiding every thing acrid. When they are almost filled up, birds and venison and boiled pork may be given. Wine is always hurtful, while there is a fever or inflammation; and indeed, till it be cicatrized, if either nerves or muscles are wounded; or even the flesh, if it be deep. But if the wound is of the safer kind, and only superficial, wine not very old, given in moderate quantities however, may promote the incarnation. If any thing is to be softened, which is necessary in nervous and muscular parts, cerate must also be laid upon the wound. But if fungous flesh has grown upon it, dry lint restrains it gently; copper scales more powerfully. If the quantity to be taken away be more considerable, things still stronger must be applied to eat down the flesh. After these a cicatrix is very well formed by lycium diluted in passum or milk; or dry lint laid on alone is still more efficacious.

Bad consequences from unsuccessful cures.

This then is the process of a successful cure. But at times things will happen to take a dangerous turn. For sometimes the ulcer grows ancient, a callosity

comes over it, and its lips are thick, and of a livid colour: after which, whatever medicine is applied, does little good; and this generally happens to an ulcer negligently treated.

Sometimes from an excessive inflammation, or violent heats, or excessive cold, or too tight bandages, or the old age or bad habit of the patient, a gangrene seizes upon it. This kind of disorder by the Greeks is divided into several species, for which we have no terms in our language. Now every gangrene not only corrupts that, which it has seized upon, but also spreads. But then the distinction is to be made between the species by different symptoms. For sometimes beyond the inflammation a redness surrounds the ulcer, and spreads with pain; the Greeks call it erysipelas[ET].; sometimes the ulcer is black, because the flesh of it is corrupted, and the blackness is greatly increased as the putrefaction goes on, when the wound is moist, and from the black ulcer is discharged a pale fetid liquor, and the flesh within is corrupted(67): sometimes also the nerves and membranes are dissolved, and a probe put in descends either laterally or downwards; sometimes the bone is affected with that disorder: and sometimes there follows what the Greeks call gangræna[EU].

The former kinds happen in any part of the body: the last mentioned about the extremities, that is, the nails, the armpits, or groin; and generally in old people, or in such as are in a bad habit of body. The flesh of such an ulcer is either black or livid, but dry and withered, and the contiguous skin is for the most part covered with pustules of a dark brown colour;

then the next to that is either pale or livid, and commonly of an æruginous colour, and void of sensation; the skin a little farther off(68) is inflamed. And all these spread at once; the ulcer into the pustulous part; the pustules to the part that is pale or livid; the paleness or livor to that which is inflamed; and the inflammation proceeds to that which is sound. In the mean time an acute fever comes on, and a vehement thirst; some are also delirious; others, though they be sensible, stammer, and with great difficulty can make their meaning understood; the stomach begins to be affected; the breath itself acquires a fetid smell. Now this disorder in the beginning admits of a cure; but when it is thoroughly rooted, it is incurable; and most of them die with a cold sweat.

The cure of an old ulcer.

These are the dangers, to which wounds are liable. But when the ulcer is old, it must be cut round with a knife, and its lips cut off, and whatever beyond them is livid, must likewise be scarified. If there be a small varix within, which prevents its healing, that also must be cut out. Afterwards when blood has been discharged, and a new face thus given to the wound, the same method of cure must be pursued, which has been directed for recent wounds. If any person does not chuse to make use of a knife, the plaister, which is composed of labdanum, may incarn it, and when the ulcer has been eaten down by that, a plaister, which brings on a cicatrix.

Of an

erysipelas.

Now that, which I said has the name of an erysipelas, is not only consequent upon a wound, but often happens without it, and is sometimes very dangerous; especially if its seat be about the neck or head.

It is proper, if the strength will admit, to bleed; then to apply at once repellents and coolers, and particularly cerus with the juice of nightshade, or cimolian chalk with rain water; or meal made into a paste with the same water, with the addition of cypress, or if it be in a tender part, with lentils. Whatever is applied, must be covered with a beet leaf, and upon that must be laid a linen cloth dipped in cold water. If coolers alone do little service, the following mixture must be made; of sulphur p. i. *. ceruss, saffron, each p. x. *. and these to be rubbed down with wine, and spread over the part: or if the place is not tender, leaves of nightshade powdered must be mixed with hog's lard, and applied spread upon linen.

But if there be a blackness, which does not yet spread, such applications must be used, as will gently eat away the putrid flesh; and the ulcer being thus cleansed, must be dressed in the same manner as others. If it be more putrid, and already begins to advance and spread, there is a necessity for stronger corrosives. If even these do not overcome it, the part must be cauterized, till no moisture flow from it; for whatever is sound, is dry when it is burnt. After the burning of a putrid ulcer, such applications must be used, as may separate the sloughs from the quick

part; the Greeks call them apescharotica[EV]. When they have fallen off, the ulcer must be cleansed, particularly with honey and resin; but it may be cleansed also by those things with which purulent ulcers are dressed, and healed up by the like methods.

Of a gangrene.

It is not very difficult to cure a gangrene, if it has not got full possession, but is only beginning, especially in a young person: and easier still, if the muscles are sound; or if the nerves are either untouched, or but slightly affected; and no large joint laid bare; or there be but little flesh in that part, and consequently not much to putrify, and if the disorder is confined to one place, which chiefly happens in a finger. In such a case the first thing to be done, if the strength will allow, is to let blood: after that, to cut through to the sound flesh, whatever is dry, which by a kind of tension is uneasy to the contiguous parts.

While the disorder is spreading, no suppurating medicines are to be applied; and for that reason not so much as warm water. Ponderous medicines also, although they be repellent, are hurtful; but the lightest of that nature are required; and over the parts, which are inflamed, coolers must be applied. If the disease is not stopped by these, so much as is betwixt the sound and corrupted parts, ought to be cauterized.

And in this case particularly help must be sought not from medicines alone, but from a due regimen: for this disease never appears but in a corrupt and

vitiated habit. Wherefore in the first place, unless weakness forbid, the patient must live abstemiously: and then for food and drink must be given what will bind the belly, and consequently the body also; but these must be of a light nature. Afterwards if the disorder stop, the same applications must be used as have been prescribed in a putrid ulcer. And then also a fuller diet may be allowed of the middle class: only such however as tends to dry the belly and the whole body; and the drink must be cold rain water. The bath, unless we are confident of a cure, is hurtful; for the ulcer softened by that means is quickly affected again with the same disorder. But sometimes it happens, that all these remedies do no service, and notwithstanding all their force, the gangrene spreads. In which case the miserable but sole remedy is to cut off that limb, which is perishing by degrees, to save the rest of the body.

The cure of more slight wounds.

This then is the method of treating the most severe wounds. But even such are not to be neglected, where the skin is entire, but the flesh within(69) is bruised; or where any thing is razed or rubbed off the surface; or when a splinter is fixed into the flesh; or when a wound, though small, has penetrated deep.

In the first case it is a very proper remedy to boil pomegranate bark in wine, and bruising the inner part of it, to mix it with a cerate of the oil of roses, which is to be laid upon the part; then where the

skin is razed, to cover it with a mild medicine, such as the lipara[EW].

Upon the part, that has its surface razed and rubbed off, the tetrapharmacum plaister must be applied, and the quantity of food diminished, and wine denied. Nor should such a hurt be looked upon as contemptible, because the wound is not deep: for from such accidents gangrenes often arise. But if it be slight and of small extent, the mild medicine abovementioned may be sufficient for the cure.

A splinter, if possible, must be extracted either by the hand or by an instrument: if it has either broke or penetrated deeper than to admit of this, it must be drawn out by a medicine. Now the best application for that purpose is the root of a reed; which if tender, must be immediately bruised; if grown hard, it may be first boiled in mulse: to this honey must always be added; or birthwort with honey must be applied. The worst splinter is that of a reed, on account of its asperity: the fern is also equally hurtful: but it has been found by experience, that each of these bruised and applied is a cure for the other. Every medicine, that has the faculty of drawing, has the same effect in all splinters. The same kind of medicine is also finest for deep and small wounds: the plaister of Philocrates is best adapted to the former, that of Hecatæus to the latter case.

Of cicatrizing ulcers.

In any wound, when we are to form the cicatrix (which is necessary after the ulcers are thoroughly cleansed and incarned) in the first place lint dipped

in cold water must be applied, while the growth of flesh is encouraged; afterwards when that is to be restrained, it must be put on dry, till a cicatrix be formed; then white lead ought to be bound over it, which both compresses the cicatrix, and gives it a colour resembling the sound part of the body. The root of wild cucumber has the same effect. Also the composition, which contains of elaterium p. i. *. litharge p. ii. *. myrobalans p. iv. *. to which is added turpentine resin, till the whole be brought to the consistence of a plaister. But black cicatrices are gently cleansed by a mixture of equal parts of verdigrease, and washed lead, and the same resin boiled, whether the cicatrix be anointed with this, which may be practised in the face, or it be applied like a plaister, which is more convenient in other parts of the body.

But if the cicatrix is either protuberant or hollow, it is ridiculous, merely in regard to the appearance to submit a second time to the pain and trouble of a cure; otherwise both cases might be remedied. For either of these cicatrices may be converted into a wound by the knife. If one rather chuses a medicine, the same purpose is answered by those compositions, which eat down flesh. When the skin is taken off, upon the prominent one must be applied eating medicines, upon the hollow one such as tend to fill up, till both these kinds of ulcers be brought to the level of the sound skin, and then they may be cicatrized.

CHAP. XXVII.

OF WOUNDS CAUSED BY BITES; POISONS TAKEN INTERNALLY; AND BURNS.

I have treated of those wounds, which are most commonly inflicted by weapons. It follows, that I speak concerning those, which are occasioned by the bite, sometimes of a man, sometimes of an ape, often of a dog, sometimes of wild beasts, or other animals, or serpents. Now almost all bites(70) are in some degree venomous.

Therefore if the wound be severe, a cupping vessel must be applied; if slight, a plaister must be immediately put on, particularly that of Diogenes; if that is not to be had, any of those, which I have prescribed against bites; if these are not to be got, the green Alexandrian; if that is not at hand neither, any of those, which are not greasy, that are calculated for recent wounds. Salt is also a remedy for them, and particularly for the bite of a dog, if it be applied dry, and the part be chaffed with two fingers; for it brings out the sanies. It is also of use to bind salt fish over such a wound.

The bite of a mad dog.

If the dog was mad, it is more especially necessary to extract the poison by cupping. After that, if the part is neither nervous nor muscular, the wound must be cauterized. If it cannot be cauterized, it is proper for

the patient to be bled. Then upon the wound, after burning, must be applied what is proper for other cauterized ulcers. Such as have not been cauterized must be treated with those medicines, that powerfully corrode the flesh. After which the wound must be filled up, and healed by no other than the common method already laid down. Some presently after the bite of a mad dog order such a patient into the bath, and allow him to sweat there as long as he is able, with the wound bare, that the poison may the more readily be discharged; then they refresh him with plenty of strong wine, which is an antidote to all poisons. And when this method has been pursued for three days, the patient is thought out of danger.

But it is usual for such a wound, if not effectually treated, to produce a fear of water. The Greeks call it hydrophobia[EX]: a most miserable kind of disease, in which the patient is tormented at once with thirst, and a dread of water. When this happens, there is very little hope left. But yet there is one remedy: to throw the patient unawares suddenly into a pond, and if he cannot swim, to suffer him to sink sometimes, and thus drink, and sometimes to lift up his head; if he can swim, to keep him down at times, that even against his will he may be satiated with water: for thus at once both the thirst and dread of water is removed. But this practice is attended with another danger, which is, that a weak body fatigued in cold water, may be destroyed by a convulsion. To prevent which, from the pond he must immediately be put into warm oil. An antidote (particularly that which I mentioned first, or in its stead another) if the

patient is not possessed with the horror of water, may be given to drink in water; if he be offended with its bitterness, honey must be added; but if that disease has already come on, it may be taken in the form of catapotia.

Of the bites of serpents in general.

The bites of serpents do not require a very different treatment: although in this the ancients varied greatly; in so much that they prescribed as many distinct methods as there were kinds of snakes; in which too they differed widely from each other. But generally the same remedies have the best success in all of them. Wherefore in the first place the limb must be tied above the wound; but not too tight, lest it become torpid. Then the poison must be extracted. This is best done by cupping. Neither is it improper to cut round the wound first with a knife, that the more of the blood already vitiated may be extracted. If a cupping vessel cannot be had (which can scarcely happen) then any other similar vessel will do, which will serve the same purpose. If none such can be got, a person must be employed to suck the wound.

Nor indeed have those, that are called Psylli(71), any peculiar skill, but a boldness confirmed purely by custom. For the poison of a serpent, as also some of those, which hunters make use of, and especially in Gaul(72), are not hurtful, taken in by the mouth, but injected by a wound: and for that reason even a snake itself is safely eaten: its bite is mortal, and

when it is in a state of stupidity (which dealers in legerdemain can produce by the force of some drugs) if one puts his finger into its mouth, and is not bit, he receives no hurt from the saliva. Therefore any person that, like a Psyllus, shall suck the wound, will both be safe himself, and save the patient. In the mean time he ought to attend to this first, that he have no ulcer either in his gums, or palate, or any other part of his mouth. Afterwards the patient must be laid in a warm place, in such a posture, that the part, which is wounded, may be in a depending posture.

If no body can be got to suck the wound, nor a cupping vessel is at hand, the patient ought to sup goose or veal broth, till he vomit. A chicken must also be cut through the middle alive, and immediately applied warm over the wound, with the internal part next the body. The same effect is produced by a kid, or a lamb cut up, and the warm flesh immediately laid upon the wound, and by the plaisters, that have been mentioned before: the most proper of which is the Ephesian, or that, which follows it. To take some antidote too immediately, is a powerful protection against the danger. But if that cannot be had, it is necessary to sup a little pure wine with pepper, or any thing else, which serves to excite heat, and does not suffer the humour to coagulate within. For the greatest part of poisons kills by cold. All diuretics too, because they attenuate the humour, are useful.

Of the bite of an aspis.

The former remedies are general, and good against bites: but experience itself has taught us, that a person, who has been bit by an aspis, ought rather to drink vinegar. Which is said to have been discovered by the case of a certain boy, who, when he had been wounded by one, and partly from the wound itself, and partly from the excessive heat of the weather, was tormented with thirst, and the country being dry, could find no other liquor, drank off vinegar, which he chanced to have by him, and was cured. The reason of the effect in my opinion is, that vinegar, though it refrigerate, yet has a faculty of dissipating at the same time. Whence it happens, that earth sprinkled with it rises in a froth. From the same virtue therefore it is very probable, that the fluids of the human body beginning to be coagulated are dissipated by it, and health thereby restored.

Of the scorpion.

Against the poison of some other serpents also peculiar remedies are well known. For the scorpion is a most excellent remedy against itself. Some drink it bruised with wine. Some apply it in the same form to the wound. Others laying it upon live coals fumigate the wound with it, keeping a cloth all round it, that the smoke may not escape; and then bind it on when burnt to a coal. Now it is proper to drink in wine the seed, or at least the leaves of turnsole (which the Greeks call heliotropium[EY].) And over the wound it is fit to apply bran with vinegar, or wild rue, or salt toasted with honey. But I have known physicians, who have done nothing else

to people stung by a scorpion, but bled them in the arm.

For the sting of a scorpion also, and a spider, garlick mixed with rue, and rubbed down with oil, is a proper application.

Of the cerastes, dipsas, and hæmorrhois.

For a wound given by a cerastes(73), or dipsas(74), or hæmorrhois(75), the remedy is dried asphodel, about the bigness of an Egyptian bean, with the addition of a little rue given in drink, and divided into two doses. Trefoil also and horse-mint, and panaces with vinegar are equally good. Also costus, and cassia, and cinnamon are proper to take in drink.

Of a chersydrus.

Against the wound of a chersydrus(76), panaces or laser, or each scruples p. ii. *. Or the juice of a leek is to be taken with a hemina of wine, and savory eaten plentifully. And let goat's dung boiled in vinegar be laid upon the wound; or barley meal in the same manner with vinegar; or rue, or cat-mint, powdered with salt and mixed with honey. And this is equally efficacious against the bite of a cerastes.

Of a phalangium.

When a phalangium(77) has given a wound, beside the chirurgical part of the cure, the patient should be

frequently plunged into the warm bath, and an equal quantity of myrrh and stavesacre is to be given in a hemina of passum; or radish-seed, or darnel-root with wine; let there be also applied to the wound bran boiled with vinegar, and he must be ordered to continue quiet.

Of Italian snakes.

But the kinds of serpents mentioned hitherto are foreign, and much more dangerous than ours; especially those, which are in very hot countries. Italy and the colder climates, besides that they are more healthful in other respects, have the advantage in this, that they produce snakes less formidable. Their bites are well enough cured by the herb betony, or bindweed, or centory, or agrimony, or germander, or burdock, or pastinaca fish(78), either singly, or any two of them taken together powdered, and thus given to drink in wine, and also applied upon the wound. It is necessary to observe, that the bite of every serpent is more hurtful, when either the animal or the wounded person is fasting, and therefore they are most pernicious when they are hatching; and it is adviseable, when any one is apprehensive of meeting serpents, not to go out, before he has taken some food.

Of poisons.

It is not so easy to relieve those, who have swallowed poison, either in their food or drink. In the first place, because they do not perceive it immediately, as those do, who are bit by a snake;

and therefore cannot instantly apply the remedy. In the next place, because the hurt does not begin in the skin, but in the internal parts. However it is best, as soon as one discovers it, immediately to drink largely of oil, and to vomit. And then, when he has emptied his praecordia, to take an antidote in his drink; if that is not to be got, pure wine.

Remedies against cantharides.

Nevertheless there are some peculiar remedies against certain poisons, and chiefly of the milder kind. For if any person has drunk cantharides, he ought to take panaces bruised with milk, or galbanum, with the addition of wine, or milk by itself.

Against hemlock.

If hemlock, let the patient drink as much hot pure wine with rue as he can; then he must be forced to vomit; after that, laser with wine must be given; and, if he be free of a fever, he must be put into the warm bath; if not, be anointed with warm ingremedies. After these, rest is necessary for him.

Henbane.

If henbane, hot mulse must be drunk, or any kind of milk, but more particularly asses milk.

Ceruss.

If ceruss, the juice of mallows, or of a bruised walnut

with wine are most serviceable.

A leech.

If one happens to swallow a leech in drinking, vinegar with salt must be given. If milk has curdled in the stomach, either passum, or laser with vinegar.

Poisonous mushrooms.

If a person has eaten poisonous mushrooms, let him take radish either out of vinegar and water, or salt and vinegar. These may both be distinguished from the good by their form, and also be rendered innocent by the manner of dressing. For they are perfectly freed from all noxious qualities, by boiling them in oil, or with a twig of a pear-tree.

Of burns.

Burns are also to be reckoned amongst the effects of external violence. The plan laid down, therefore, seems to oblige me to speak of them in this place. They are best cured by the leaves either of lilly, or hound's-tongue, or betes boiled in wine and oil. Any of these presently applied heals them.

But the method of cure may also be divided into those things, which being gently eating and repellent, at first both prevent pustules, and excoriate the part; and those, which being lenient, restore the part to its soundness. Of the former is the meal of lentils with honey, or myrrh with wine; or Cimolian chalk, powdered with the bark of frankincense, and worked up to a paste with water, and when it is to be used, diluted with vinegar. Of

the second class any of the lipara. But the most suitable is that, which contains the dross of lead, or yolks of eggs.

Another way also of treating burns is, while the inflammation continues, to apply to them lentils with honey; when that is gone off, meal with rue, or leeks, or horehound, till the crusts fall off, then vetches with honey, or iris, or turpentine resin, till the ulcer be clean; last of all, dry lint.

CHAP. XXVIII.

OF EXTERNAL DISORDERS PROCEEDING FROM AN INTERNAL CAUSE, AND THEIR CURE.

Of a carbuncle.

From external injuries, we proceed to disorders which have an internal origin, when some part of the body is corrupted. Amongst these none is worse than a carbuncle. The marks of it are these. There is a redness, and above that pustules rise, not very high, mostly black, sometimes inclining to a livid colour, or pale. There seems to be sanies in them; below, the colour is black. The flesh is parched, and harder than it ought to be naturally. And about it, there is a sort of crust; which is surrounded with an inflammation. Neither can the skin be lifted up in that place, but is, as it were, bound down to the flesh below. There is a propensity to sleep. Sometimes a shuddering, or fever comes on, or both. And this disease shoots out roots, as it were, below, and spreads, sometimes quickly, sometimes more slowly. At the surface also it spreads and grows white; then becomes livid; and all round it small pustules break out. And if it happen to be near the gullet or fauces, it often stops the breath suddenly.

Nothing is better than to sear it immediately. Neither is that painful, for it has no feeling, because such flesh is mortified. And the burning should be continued, till there is a sense of pain on every side.

After this, the ulcer is to be cured in the same manner, as other burns. For by eating medicines is produced an eschar, which being entirely separated from the quick flesh, draws with it whatever was corrupted; and the sinus, by this time clean, may be dressed with incarning medicines. But if the disorder be in the surface of the skin, medicines barely eating, or at most caustic, may be sufficient. The violence of the cure is to be proportioned to the malady. Whatever medicine is applied, if it has the desired effect, will immediately separate the corrupted part from the quick.

And we may generally be confident of success, if the corrupted flesh falls off, wherever such medicine eats down; if that does not happen, and the medicine is overcome by the disease, an immediate recourse must be had to the actual cautery. But in such a case, the patient must abstain from food and wine. It is also proper to drink water plentifully. And these directions are to be observed more strictly, if a febricula be added to the other complaints.

Of a Cancer.

There is not so great danger of a cancer[EZ], unless it be irritated by the imprudence of the physician. This disease generally happens in the superior parts, about the face, the nose, ears, lips, and breasts of women. It also rises from the liver, or spleen. About the place there are pricking pains; it is immoveable, and unequally swelled; it is also sometimes insensible. Around it the veins are inflated, and tortuous; and either pale or livid; in some also, they are concealed from view. Touching the part gives

pain to some, to others none. Sometimes it is harder, or softer, than it ought naturally to be, without any ulcer; at other times, all other circumstances being as above described, there is likewise an ulcer. Sometimes it has no peculiar characteristic to distinguish it; at other times it resembles those which the Greeks call condylomata[FA], but has an asperity and magnitude peculiar to itself. And its colour is red, or resembling that of a lentil. Neither is it safe to cut it; for immediately there follows either a palsy, or a convulsion. Often when a person receives a blow upon it, he loses his speech and faints. In some also if the tumour itself be compressed, the contiguous parts grow tense and swell. Now this is a very bad kind(79). Its general progress is this; first appears what the Greeks call a cacoethes[FB], then it becomes a carcinoma, without an ulcer. From that an ulcer; and from an ulcer a thymium.

None of these can be removed but the cacoethes(80); the rest are irritated by every method of cure; and the more violent the operations are, the more angry they grow. Some have made use of caustic medicines; others of the actual cautery; others cut them out with a knife. Nor was any person ever relieved by medicine; but after cauterizing, the tumours have been quickened in their progress, and increased till they proved mortal; when they have been cut out, and cicatrized, they have, notwithstanding, returned, and occasioned death. Whereas, at the same time, most people, by using no violent methods to attempt the extirpation of the disease, but only applying mild medicines, to sooth it, protract their lives, notwithstanding the disorder,

to an extreme old age. But no body can pretend to distinguish a cacoethes, which is curable, from a carcinoma, which is not, otherwise than by time and experiments.

Therefore, so soon as this disease is perceived, caustic medicines ought to be applied; if the disorder is alleviated, and its symptoms grow milder, we may proceed both to incision and the actual cautery; if it is immediately irritated, we may conclude, that it is already a carcinoma; and every thing acrid and severe is to be taken away. But if the part is hard, without any ulcer, it is sufficient to apply a very mellow fig, or the plaister called rhypodes. If there is an ulcer, but not rising *above the surface of the skin*, the cerate of rose oil is to be put on, with the addition of a powdered shell, with smith's forge water. If it grows fungous, copper scales (which is the gentlest caustic) must be tried, till there is no rising above the other parts; provided still that it does not exasperate; if it does, we ought to be content with the same cerate.

Of a therioma.

There is also an ulcer, which the Greeks call therioma[FC]. This both comes of itself, and sometimes is consequent upon an ulcer produced from another cause. The colour is either livid or black; the smell is bad; it discharges copiously a humour like mucus; it is sensible neither of the touch, nor of medicine; and is only disturbed by itching. About it there is a pain and inflammation. Sometimes also a fever comes on. Sometimes there is

a haemorrhage from the ulcer, and this disorder spreads, by which all the symptoms often increase. From these proceeds the ulcer which the Greeks call herpes esthiomenos[FD], *voracious herpes*; because by spreading quickly, and penetrating even to the bones, it devours the body. The surface of this ulcer is unequal, resembling dirt; and there is in it a great quantity of glutinous humour, an intolerable smell, and an inflammation more violent, than is found in an ulcer of that size. Both of them, as indeed all the kinds of gangrenes, happen chiefly to old people, or those, who are in a bad habit of body.

The manner of curing both is the same; but the greater disease requires the sharper remedy. And the regimen must first be regulated; the patient must rest in his bed, for some days abstain from food, drink water very plentifully, and have a clyster given him. Then, when the inflammation is gone, let him take food of a good juice(81), avoiding every thing acrid; he may drink as much as he will, provided he be content in the day-time with water but at supper, he may also drink some rough wine. But the abstinence should not be equally severe in a herpes, and a therioma. This then is the regimen necessary.

Externally upon the ulcer, must be sprinkled powder of dry aloes, and if that does but little service, chalcitis. But if any nerve, by the flesh being destroyed, be laid bare, it must be covered first with linen, lest it be burnt by that medicine. If there is need of remedies still more powerful, we must make use of those compositions, that cauterize more strongly. Now when any medicine is sprinkled on, it ought to be done by the broad end of a probe(82).

Over it should be applied either lint with honey, or olive leaves boiled in wine, or horehound: and these must be covered with linen dipped in cold water, and then well squeezed. And all round, where there is a tumour from the inflammation, repellent cataplasms must be applied. If by these methods it grows no better, the place ought to be cauterized with a *hot* iron; the nerves that are in view being first covered. By what has been said on other occasions, it will be clear enough to any body, that a part, which is burned either by medicines or the actual cautery, must first be cleansed, and then filled up.

Of the ignis sacer.

The ignis sacer ought also to be numbered amongst bad ulcers. There are two species of it. The one is of a colour inclining to ruddy, or a mixture of red and pale, and the surface is roughened by contiguous pustules, of which no one is bigger than another, but they are very numerous, and exceeding small. In these there is almost always pus, and often a redness attended with heat; and that spreads, sometimes when the part first affected is healing, sometimes when it is ulcerated, in which case, the pustules breaking, one continued ulcer is formed, discharging a humour, which seems to be betwixt sanies and pus. It attacks chiefly the breast, or sides, or extremities, and particularly the soles of the feet. The other kind comes with an ulceration in the surface of the skin, but without going deep, broad, inclining to a livid colour, but unequal; and the middle part of it heals, while the extremities spread; and often that, which

seemed to be sound, ulcerates again. But the skin round about it, which is to receive the disease, grows tumid, and hardish, and the colour of it is a blackish red. And this disease too generally attacks old people, or those, that are in a bad habit, but chiefly in their legs.

Now every ignis sacer, though it be the least dangerous of those disorders, which have the disposition to spread, yet is, I had almost said, the hardest to cure of them all. The most effectual remedy is a fever for one day, which consumes the noxious humour. The thicker and whiter the pus is, so much the less is the danger. It does good also to excoriate the part below the ulcer by scourging, that the more pus may be evacuated, and the matter drawn out, which corrupts the flesh there. But notwithstanding if a slight fever comes on, there is a necessity for abstinence, lying a-bed, and clysters. In every ignis sacer, neither mild and glutinous food, nor salt and acrid are proper; but what is betwixt these: such as unleavened bread, fish, kid, birds, and except the wild boar, almost all venison. If there is no febricula, both gestation and walking are serviceable, and rough wine, and the bath; and in this disorder, as well as that mentioned before, the drink ought to be more plentiful than the food.

As for the ulcers themselves, if their progress be moderate, they must be fomented with hot water; if more rapid, with hot wine. Next wherever there are any pustules, they must be opened with a needle. Then such applications used, as may consume the putrid flesh. When the inflammation is removed, and the ulcer cleansed, a lenient medicine ought to be

applied. In the second species, quinces boiled in wine and bruised may do good; as likewise the plaister of Hera, or the tetrapharmacum, with the addition of a fifth part of frankincense; likewise black ivy boiled in a rough wine, and if the disorder spread fast, nothing is more efficacious. When the ulcer, which I observed to be in the surface of the skin, is cleansed, the same lenient medicines are sufficient to the cure.

Of the Chironian ulcer.

The ulcer named Chironian(83) is large, and has hard, callous, and swelled lips. A sanies is discharged not copious, but thin; the smell is bad. There is no inflammation either in the ulcer or in the tumour about it. The pain is tolerable. It does not spread, and therefore is not dangerous; but it does not easily heal. Sometimes a thin cicatrix comes on, and then breaks again, and the ulcer is renewed. It occurs chiefly in the feet and legs.

The application to it ought to contain both something lenient, and something strong, and repellent. Such as the following composition made for the purpose: of copper scales, calcined lead washed, each p. vi. *. cadmia, wax, each p. viii. *. oil of roses a sufficient quantity to soften the wax with the other ingredients.

Of ulcers occasioned by cold.

There is a kind of ulcer occasioned by the cold of the

winter. It is most common in children, chiefly in their feet and toes, sometimes also in their hands. There is a redness with a moderate inflammation. Sometimes pustules break out, which are followed by an ulceration. The pain is not great, the itching greater. Sometimes a humour is discharged, but in small quantity, which seems to resemble either pus or sanies.

In the first place it must be fomented plentifully with a hot decoction of turnips, or if these are not to be had, some of the repellent vervains. If it is not yet ulcerated, copper, as hot as a person is able to bear it, must be applied. When it is already ulcerated, allum, powdered with an equal quantity of frankincense, ought to be put to it, with the addition of wine; or pomegranate bark boiled in water, then beat. If the surface of the skin be excoriated, in that case lenient medicines succeed best.

Of the scrophula.

The scrophula is a tumour, in which there are formed some concretions of pus and blood, resembling small glands. These are extremely troublesome to physicians, because they both generate fevers, and never maturate kindly; and whether they be cured by incision or medicines, for the most part they rise again close to the cicatrices; which they are much more ready to do, after being treated with medicines; and what is more, they are of long continuance. They grow chiefly in the neck; but also in the armpits, the groin and the sides. Meges the surgeon assures us, that he has met with them in the breasts of women

too.

For these reasons, it is proper to give internally white hellebore, and that even frequently, till they be discussed; and externally to apply medicines which may either draw out the humour, or discuss it; such as have been mentioned before. Some also make use of caustics, which eat down and constringe the part with an eschar; and then treat it like an ulcer. Whatever method of cure be pursued, when the ulcer is clean, the body must be exercised and nourished, till it come to a cicatrix. These are the methods prescribed by physicians(84): but the experience of some peasants has discovered, that eating a snake cures a scrophulous patient.

Of a furuncle.

A furuncle is an acute tubercle, attended with inflammation and pain; and especially when it is just turning to pus. When this is opened, and the pus is discharged, part of the flesh below appears converted into pus, part corrupted, of a whitish colour, and reddish; which some call the ventricle of the furuncle. There is no danger in it, though no means be used for its cure, for it maturates of itself, and breaks. But the pain makes a medicine, that can hasten the cure, eligible.

The proper medicine for it is galbanum, but other things have also been mentioned before. If none of these can be had, the first application ought to be a plaister not greasy, to repel it; then if that has not succeeded, something to promote a suppuration. If that cannot be got, either resin or leaven(85). When

the pus is squeezed out, no further cure is necessary.

Of phymata.

The name of phyma is given to a tubercle resembling a furuncle, but rounder, and flatter in the surface, and often larger. For a furuncle seldom rises to the bulk of half an egg, and never exceeds it: a phyma is commonly of greater extent; but the inflammation and pain in it are less. When it is broken, the pus appears in the same manner; no ventricle is found here, as in the furuncle; but all the corrupted flesh is turned into pus. Now this grows more frequently in children, and is more easily cured; in young men it occurs more seldom, and is more difficult to cure: when age has given firmness to the body, it does not appear at all. The proper medicines for discussing it have been mentioned before.

Of a phygethlon.

A phygethlon is a low, but broad tumour, in which there is something like to a pustule. The pain and tension are violent, and greater than in proportion to the size of the tumour; sometimes also attended with a slight fever. It ripens slowly, and no great part of it is converted into pus. It is formed chiefly either in the neck, or in the armpits, or the groin. From its figure our authors call it panus(86). The proper medicine for this also we have pointed out before.

Of abscesses.

But though all the foregoing are nothing else but small abscesses, yet a larger collection, that tends

entirely to suppuration, appropriates to itself the general name of abscess. And this collection happens generally after fevers or pains of some particular parts, and especially after pains in the belly. It commonly shews itself externally, for it sometimes swells to a pretty large compass, like the phyma, and is red and hot, and in a little time contracts a hardness. It is more troublesome as it advances, and occasions thirst and watchfulness. But sometimes there is none of these appearances in the skin; and more especially when the suppuration is pretty deep; but inward prickings are felt, attended with thirst and watchfulness. It is more kindly when it does not become hard of a sudden; and when, though it be ruddy, yet it is changing to a white colour. Which symptoms occur when the suppuration is beginning; for the swelling and redness comes on long before.

If the abscess be forming in any of the nobler parts, the accession of matter there must be prevented by cataplasms, which are at the same time repellent and cooling; such as I have mentioned under the erysipelas and elsewhere. If it is grown pretty hard, we must have recourse to discutients and resolvents; such as a dry fig bruised, or lees of wine mixed with cerate, made up with hog's lard; or the root of wild cucumber, with the addition of two parts of meal, first boiled in mulse. We may also mix equal parts of ammoniacum, galbanum, propolis, viscum, adding of myrrh not half the quantity of any of the other ingredients: and the plaisters and malagmas I have mentioned before, have the same effect.

What is not discussed by these, must necessarily maturate. And to hasten this, must be applied barley

meal mixed with water; to which also it will be proper to add some herbs. The same applications(87) are fit for the lesser abscesses too, whose names and properties I have recited above. The general method of cure is the same in them all; and only differs in the degree. Now that tumour is crude, in which there appears a strong pulsation of the arteries, a weight, heat, tension, pain, redness, and hardness; and if the abscess be large, a shuddering, as also a slight fever continues; and the suppuration being pretty deep and concealed, instead of the marks, which otherwise shew themselves in the skin, there are prickings. When these have abated, and the part begins to itch, and either becomes somewhat livid or whitish, the suppuration, is perfected. And when it either breaks of itself, or is opened by medicines, or by incision, the pus ought to be discharged. And if it happens in the armpits or groin, it must be dressed without lint. In other parts too, if it is narrow at the bottom, if the suppuration has been moderate, if it has not penetrated deep, if there is no fever, if the patient be strong, lint is equally needless. In other circumstances it ought to be used, sparingly however, and not unless the wound be large. It does well to spread honey upon the lint; or without it, to apply lentils with honey, or pomegranate bark boiled with wine. And these things are proper both alone and mixed.

If any parts round it should be too hard, to soften them may be applied either mallows beat, or fenugreek, or lintseed boiled in passum. And then whatever is to be applied, ought to be secured not by a tight, but an easy bandage. Every body ought to

know, that in this kind of disorder cerate may be used. What else belongs to the cleansing of the ulcer, filling it up, and bringing on a cicatrix, and equally relates to wounds, has been already pointed out.

Of fistulas.

But sometimes from abscesses of this kind and other ulcers, arise fistulas. That is the name of a deep, narrow and callous ulcer. It occurs almost in every part of the body; and it has some peculiarities in each place. I shall first treat of the general properties. There are then several kinds of fistulas; for some are short, others deeper; some point inward in a straight line; others, and by far the greatest part, are transverse; some are simple, others are double, or triple, which beginning from one orifice, branch out within, into three or more sinuses; some straight, others bent and tortuous; some end in the flesh, others penetrate to bones or a cartilage; or where neither of these lies beyond them, reach to the more internal parts; some again are easily cured, others with difficulty, and some are even found incurable.

The cure of a simple and recent fistula in the flesh is easy. It is an advantage to it, if the person be young, and the constitution firm: the contrary are very unfavourable circumstances; as also if the fistula has injured a bone, or cartilage, or nerve, or muscles; if it have seized upon a joint, or has penetrated either to the bladder, or the lungs, or to the womb, or to the large veins or arteries, or to the jaw-bones, throat, stomach, or thorax. When it points towards the intestines too, it is always dangerous, and often mortal. In these cases it greatly increases the malady,

if the patient be either sick, or old, or of a bad habit.

First of all, it is proper to put a probe into the fistula, that we may find its direction and depth: and at the same time whether it be altogether moist, or drier than it should be, which appears upon drawing out the probe. It may also be determined, whether the bone be affected or not; and if the fistula has penetrated there, how far it has injured it. For if that part is soft, which is touched by the end of the probe, the disorder is confined to the flesh; if it resists more, it has made way to the bone. And again, if the probe slides, there is no caries begun: if it does not slip out(88) of the point where it is placed, the caries is begun, but is slight yet: if it feels unequal also, and rough, the bone is very much corroded. The situation itself shews when there is a cartilage below; and that the fistula has reached it, appears by its resistance.

Now from these circumstances may be learnt the seats and extents of fistulas, and what parts they have damaged. From the quantity of the pus it may be known, whether they be simple, or divided into more parts. If more of that comes away, than can issue from a single cavity, it is evident there are more sinuses. And as flesh, nerves, and some nervous substances, such as the greatest part of the coats and membranes are, commonly lie together, the nature of the pus will discover whether the several sinuses have eaten through these different sorts of bodies. For from flesh a smooth and white pus is discharged pretty copiously; from a nervous place the discharge is of the same colour indeed, but thinner, and less in quantity; from a nerve fat and not unlike to oil. Lastly, the posture of the body also discovers

whether the fistulas have penetrated into several parts, because often, when one lies down with his body and limb in a different position, the pus begins to flow again, which had before stopped, and shews not only that there is another sinus, from whence it descends, but also that it proceeds in a different direction.

If it be confined to the flesh, and is recent and simple, neither consisting of sinuses, nor having a large cavity: also if it be not in a joint, but in a part, which is immoveable by itself, and is never put in motion but with the whole body, a plaister for recent wounds will be sufficient, if that contain either salt, or allum, or copper scales, or verdigrease, or any of the metallic substances. And of this a collyrium(89) ought to be made, at the one end smaller, and at the other somewhat thicker. And this ought to be introduced with the small end foremost into the fistula, till pure blood begins to appear. This is universal in the application of all collyriums for fistulas. And then the same plaister is to be put over it spread upon linen; and above that must be applied a sponge first dipt in vinegar; and it is sufficient to open the dressings on the fifth day. Such diet must be used, as I have recommended for generating flesh.

But if the fistula is at a distance from the præcordia, it is necessary for the patient now and then to eat radishes fasting and then to vomit.

When the fistula by time becomes callous (and it is impossible to be mistaken in a callosity, because it is hard, and either white or pale) then there is a necessity for stronger medicines. Such as that

composition, which contains of poppy tears p. i. *. gum p. iii. *. cadmia p. iv. *. copperas p. viii. *. these are incorporated with water, and made into a collyrium. Or that, which consists of galls p. i. *. verdigrease, sandarach, Egyptian allum, each p. i. *. calcined copperas p. ii. *. Or that, which is composed of chalcitis and stone-lime, to which is added of orpiment less by one half than each of the other ingredients; and these are mixed up with boiled honey. The most expeditious is the prescription of Meges: to reduce to powder of rasile verdigrease p. ii. *. then to dissolve in vinegar, of ammoniacum thymiama p. ii. *. and with this to bring the verdigrease to a consistence: and this is one of the choicest medicines. But though the foregoing compositions are the most efficacious, yet if these are not to be had, it is easy to destroy the callosity by some caustic medicines: and it is sufficient to arm with these a twisted paper reed, or some part of a penecillum, formed after the manner of a collyrium. Squills also boiled, and mixed with lime consume a callus.

If the fistula happen to be pretty long, and transverse, after introducing a probe, it is very proper to make an incision over against its origin, and to put in any collyrium you chuse.

But if we judge the fistula to have two or more sinuses, provided it be short and confined to the flesh, we ought not to make use of a collyrium, which may cure one part, and not touch the rest; but the same medicines dry are to be put into a writing reed, which being applied to the orifice, the medicines must be blown into the fistula. Or the

same things may be dissolved in wine; or if the fistula be somewhat foul, in mulse; if somewhat, callous, in vinegar; and whatever is injected, must be infused in this liquid form. Coolers and repellents must be applied above; for generally the parts about a fistula are a little inflamed. Neither is it improper, when one has removed the dressings, before he make another injection, to wash the fistula by means of a syringe; if there be much matter, with wine; if the callosity be pretty hard, with vinegar; if it is already cleansing, with mulse, or a decoction of vetches in water, with a little honey added to it. It commonly happens that the membrane, which is betwixt the orifice and the sound flesh, being overcome by so many medicines, casts off, and the ulcer is clean below. Whenever this happens, agglutinants are to be applied, and especially spunge armed with boiled honey. I know it is a practice approved of by many in this case, to have lint rolled up into the form of a collyrium, and dipt in honey, introduced for incarning. But this method more quickly agglutinates, than incarns. And there is no fear, that clean flesh brought into contact with clean flesh can fail to unite, especially when medicines proper for that purpose are made use of; since often an ulceration of the fingers, unless great care is taken to prevent it, will join them together in the healing.

Of the cerion ulcer.

There is also a kind of ulcer, which from its resemblance to a honeycomb, by the Greeks is called cerium[FE]. And of this there are two species: the one

is of a whitish colour, and like to a furuncle, but larger, and attended with great pain. When it maturates, it has openings, through which is discharged a glutinous and purulent matter; nevertheless it does not come to a due ripeness. If it be divided by incision, there appears to be a great deal more corruption within, than in a furuncle, and it reaches deeper. It seldom occurs but amongst the hair of the head.

The other is less, and eminent upon the top of the head, hard, broad, of a pale green colour, and more ulcerated; for there are openings at the roots of each of the hairs, through which issues a glutinous, palish humour, in consistence like honey, or viscum, or sometimes oil; and if an incision be made upon it, the flesh within appears green. There is a great pain and inflammation, insomuch that they often bring on an acute fever.

To that kind, which has fewer openings, it is proper to apply dry figs, and lintseed boiled in mulse, and drawing plaisters and malagmas, or the medicines, of that quality above recited.

Upon the other, the same medicines, likewise meal boiled in mulse, and half the quantity of turpentine resin added to it; and a fig boiled in mulse; to which a little powdered hyssop is added; likewise a fourth part of stavesacre added to the fig. But if medicines do but little service in either kind, the whole ulcer must be cut out to the sound flesh. When the ulcer is taken away, medicines must be applied over the wound; first such as promote pus, next detergents, then such as incarn.

Of the acrochordon, acrothymium, myrmecia, and the clavus.

There are also some resembling warts, which have different names, as they are different disorders. The Greeks call that an acrochordon[FF], where a substance pretty hard is collected within the skin, which sometimes is rough, and of the same colour with the adjacent parts; near the skin it is narrow, and broader above. This is small, rarely exceeding the size of a bean. They are hardly found to grow single; generally a number together, and chiefly in children. They sometimes suddenly disappear, sometimes they excite a moderate inflammation. Some are also converted into pus.

That is called acrothymium[FG], which rises like a small wart above the flesh, broader at the skin, smaller above, hardish and very rough upon the top, where in colour it resembles thyme, whence it has its name; and it is easily divided there, and made bloody; sometimes it discharges some blood; and is generally about the bigness of an Egyptian bean, seldom larger, sometimes very small. Sometimes only one, at other times more grow in the palms of the hands, and soles of the feet; they are worst in the private parts, and aptest to bleed there.

Those called myrmecia[FH] are lower and harder than an acrothymium, fix their roots deeper, and occasion a greater pain; below they are broad, and above small, and less blood comes from them: in size they scarce ever exceed a lupine. These likewise grow

either in the palms of the hands, or lower parts of the feet.

The clavus grows elsewhere sometimes, but chiefly in the feet, and principally form a contusion, though sometimes from other causes; and it gives pain, if not at other times, at least when one is walking.

Of these the acrochordon, and the acrothymium often terminate of themselves, and the more readily, the less they are. Myrmecia and clavi are scarce ever removed without medicine. If the acrochordon be cut off, it leaves no root, and for reason does not grow again. When the acrothymium and clavus are cut off, a small roundish root grows, which descends deep into the flesh, and that being left, they sprout up again. The myrmecia adhere by very broad roots, and therefore cannot be taken off without a great ulceration. It is very proper to pare the clavus now and then: for thus without any violence it grows soft: but if a little blood be let out, it often dies away. It is also removed, if one cleans it round, and then applies to it resin mixed with a little of the powder of a milstone. But the other kinds are to be eaten away by medicines. For the two first, that which is made from the lees of wine; for the myrmecia the most proper is that, which consists of alum and sandarach. But the contiguous parts ought to be covered with leaves, lest they also be corroded; and after that a lentil must be applied. A fig also boiled in water destroys an acrothymium.

Of pustules.

Pustules break out chiefly in the spring season. Of

these there are several kinds. For sometimes there is a certain asperity over the whole body, or a part, resembling those pustules, which are occasioned by a nettle, or from sweat; the Greeks call them exanthemata[FI]. And they are sometimes red, at other times of the same colour with the skin. Sometimes a great many grow resembling vari, sometimes larger. The pustules are livid or pale, or black, or otherwise different from the natural colour; and there is a humour contained in them. When they are broke, the flesh below appears as it were ulcerated. By the Greeks they are called phlyctænæ helcodes[FJ]. They arise either from cold, or from fire, or from medicines.

The phlyzacium[FK] is a pustule somewhat harder, of a whitish colour, and sharp pointed. What is squeezed from it is moist. The pustules sometimes turn to small ulcers, either dry or moist; and sometimes attended only with an itching, at other times with an inflammation and pain: pus or sanies issues from them, or both. And this occurs in children chiefly; seldom in the trunk of the body; often in the extremities.

The worst kind of pustule is that, which is called epinyctis[FL]. Its colour either inclines to livid, or is a dark brown, or white. There is a violent inflammation round it; and when it is opened, a mucous ulceration is found within, in colour resembling its humour. The pain of this is greater than in proportion to its bulk; for it is not larger than a bean. And this likewise grows in the extremities, and generally in the night-time: whence the Greeks have given it the name of epinyctis.

Now in the cure of all pustules, the first thing is to walk much, and to take exercise: if that cannot be complied with, to use gestation. The second rule is, to lessen the quantity of food; to abstain from every thing acrid and extenuating. And nurses ought to observe the same rules, if their sucking child is thus affected. Besides these, one, that can bear it, if the pustules be small, ought to sweat in the bagnio; and at the same time to sprinkle nitre over them; and to anoint the part with a mixture of wine and oil; then to go into the bath. If no benefit accrues from these, or if the pustules be of a larger kind, a lentil must be applied, and when the surface of the skin is taken off, we must have recourse to lenient medicines. After the lentil, the epinyctis is to be treated with blood-herb, or green coriander.

The ulcers formed from pustules are cured by litharge mixed with fenugreek seed; and in compounding them, rose oil, or juice of endive, are used alternately, till the mixture have the consistence of honey. The proper composition for those pustules, which attack, infants, is of that stone, which the Greeks call pyrites p. viii. *. with fifty bitter almonds, and an addition of three cyathi of oil. But the pustules ought to be first rubbed with ceruss, and then anointed with this.

Of the scabies.

The scabies is a hardness of the skin, of a muddy colour, from whence pustules arise, some of them moist, others dry; from some of them issues a sanies; and in these there follows a continued itching

ulceration, which in certain cases spreads very fast. In some people it goes entirely off, in others it returns at a certain season of the year; the greater its asperity, and the more it itches, the more difficult it is to cure. And therefore this species of it the Greeks call agria[FM], that is, cruel.

In this also the same diet is necessary, as above prescribed. The medicine proper for this in its beginning, consists of spodium, saffron, verdigrease, each p. i. *. white pepper, verjuice, each p. i. *. cadmia p. viii. *. But where there is already an ulceration, that, which is composed of sulphur p. i. *. wax p. iv. *. liquid pitch a hemina, two sextarii of oil. These must be boiled together to the consistence of honey. There is also another, which is said to have been invented by Protarchus. It contains a sextarius of lupine meal, four cyathi of nitre, a hemina of liquid pitch, half a pound of liquid resin, and three cyathi of vinegar. It is also proper to mix saffron, lycium, verdigrease, myrrh, ashes, in equal quantities, and boil them in passum. This heals every kind of scabies. And if there be nothing else at hand, lees of oil boiled to a third part, or sulphur mixed with liquid pitch, as I prescribed for cattle, relieve men also labouring under the scabies.

Of the impetigo.

Of the impetigo there are four species. The least malignant is that, which resembles the scabies. For it is red, hardish, ulcerated, and corrosive. But it differs widely from that, which is more ulcerated(90), and has pustules like to vari; and there appear to be in it

somewhat like air bubbles, from which, after a time, something like scales come off; and this is more certain in its returns.

The second kind is worse, and is not unlike the papula, but of greater asperity and a more ruddy colour, having various figures; scales fall off from the surface of the skin, there is a greater erosion, it spreads more quickly, and broader, and both comes and goes at more certain intervals than the former. It is called the red.

The third kind is still worse. For it is both thicker and harder, and more swelled; it causes fissures in the surface of the skin, and corrodes more vehemently. This also is scaly, but black; it spreads wide(91), and does not stay long at a time; but is less uncertain as to its periods of coming and going; and is not to be entirely removed. This has the epithet of the black.

There is a fourth kind absolutely incurable, very different from the rest in colour. For it is whitish, and resembling a recent cicatrix; it has scales of a pale colour, some whitish, others resembling a lentil; which being taken off, blood sometimes follows. Otherwise the humour of it is white, the skin is hard and chopped, and it spreads wider.

All these kinds happen chiefly in the feet and hands; and they also infest the nails. There is no medicine more efficacious than that I mentioned for the scabies, which bears the name of Protarchus. Serapion made use of the following composition, nitre p. ii. *. sulphur p. iv. *. incorporated with plenty of resin.

Of the papula.

There are two species of the papula. One is, where the skin is made rough by very small pustules, and is both red, and gently corroded; in the midst of them is a space somewhat smoother; it spreads slowly. And this disorder is of a round form in its beginning, and proceeds in the same manner circularly.

The second, the Greeks call agria: which has a similar appearance, but the skin is more unequal and ulcerated, and it corrodes more vehemently, is redder, and sometimes also loosens the hairs.

That which is less round, heals with greater difficulty; and unless it be cured, it turns to an impetigo. But a slight papula, if it be rubbed every day with fasting spittle, will heal. The greater kind is very well cured by feverfew rubbed over it. But for the compound medicines, that same prescription abovementioned of Protarchus is so much the more powerful here, as the distemper is less. There is another of Mico's for the same purpose; of red nitre, frankincense, each p. i. *. cantharides cleansed p. ii. *. crude sulphur a like quantity, liquid turpentine resin p. xx. *. meal of darnel three sextantes, three cyathi of git, and one sextans of crude pitch.

Of the vitiligo.

The vitiligo also, though of itself not dangerous, yet is both nasty, and proceeds from a bad habit of body. There are three species of it. It is called alphos[FN], when it is white; it is commonly a little rough, and not continued, but appears like drops dispersed here and there. Sometimes it spreads wider, leaving some,

places between free. The melas[FO] differs from that in colour, being black, and like a shadow. In other respects it is the same. The leuce[FP] has some resemblance to the alphos, but is whiter, and penetrates deeper; and has white downy hairs in it. All these spread; but in some more quickly, in others slower. The alphos and melas come and go in some people without any regularity. The leuce does not easily quit a person it has once seized.

The two first are not very difficult to cure; the last scarce ever heals; and though the disorder be in some degree mitigated, yet the natural colour is never fully restored. Whether any of these be curable or not, is easily known from an experiment. For the skin should be cut, or pricked with a needle. If blood issues, which generally happens in the two former, there is room for a remedy; if a white humour starts, it will not admit of a cure. And therefore it should not he meddled with.

To the curable kinds must be applied lentils mixed with sulphur and frankincense, the lentils being bruised and dipped in vinegar. Another composition for the same purpose is that, which goes under the name of Irenæus. Bastard spunge, nitre, cummin, dry fig-leaves, of each equal parts, are bruised with the addition of vinegar. With this the part affected is anointed in the sun; and in a little time, it is washed off, lest it corrode too much. Some following the practice of Mico, anoint the alphi with the following medicine; they mix of sulphur p. ii. *. nitre p. iv. *. dry myrrh powdered an acetabulum; then in the bath sprinkle upon the vitiligo bean flour, and afterwards put the other over it. Those which I called melanes,

are cured by the following things beat up together; bastard spunge, frankincense, barley, and beans; these are sprinkled upon them without oil in the bagnio, before a sweat comes on, and then that species of vitiligo comes off by rubbing.

A. CORNELIUS CELSUS

OF

MEDICINE.

BOOK VI.

CHAP. I.

Having done with the disorders, which break out in any part of the body indifferently, and require the assistance of medicines; I shall now proceed to those, that are confined to particular parts, beginning with the head.

Of hairs falling off the head.

When the hairs of the head fall off, the principal remedy is frequent shaving: though labdanum mixed with oil, conduces also towards keeping them on. I here speak of the hair, which falls off after an illness.

For no remedy whatever can prevent the heads of some people from becoming bald by age.

CHAP. II.

OF A PORRIGO.

We call that disorder a porrigo, *scurf*, when certain small scales arise amongst the hair, and are loosened from the skin; they are sometimes moist, much more frequently dry. It happens sometimes without any ulcer, sometimes in a part that is ulcerated, and is sometimes attended with a bad smell, sometimes with none. It usually occurs in the hair of the head, more rarely in the beard, sometimes also in the eye-brows. And as it never comes without some antecedent disorder in the body, so it is not altogether useless. For when the head is free from disorders, then it does not appear: when there is any disorder there, it is more expedient, *in such a case*, that the surface of the skin should be here and there corrupted, than that the noxious matter should be turned in upon a more noble part.

It is more proper then to cleanse it by frequent combing, than to repel it entirely. But if that method makes it more offensive (which may happen by the excessive discharge of humour, and more so, if the humour be fetid) the head is to be shaved often; and treated with some gentle repellents, such as nitre with vinegar, or labdanum with myrtle oil, and wine, or myrobalans with wine. If these have little effect, we may use some of the more powerful ones; but, at the same time, we should be aware, that this practice is hurtful, when the disorder is recent.

CHAP. III.

OF THE SYCOSIS.

There is an ulcer, which from its resemblance to a fig, by the Greeks, is called sycosis[FQ], because flesh sprouts up from it. And this is the general name. Under it are included two species. The one is a hard and round ulcer; the other is moist and unequal in its surface. From the hard one the discharge is very small and glutinous; from the moist, it is in greater quantity and fetid. Both kinds occur in the parts covered with hair: but that which is callous and round, most frequently in the beard; the other, which is moist, chiefly in the hair of the head.

To both of them it is proper to apply elaterium, or lintseed powdered, and made into a paste with water, or a fig boiled in water, or the tetrapharmacum plaister softened with vinegar. Eretrian earth also liquified with vinegar is proper to lay upon them.

CHAP. IV.

OF AREAE.

There are two kinds of areae. Both of them agree in this, that the surface of the skin mortifying, the hairs first decay, and then fall off; and if the part is wounded, thin and fetid blood is discharged; and both kinds increase in some people quickly, in others slowly. It is then worst, when it has rendered the skin thick and fat, and entirely smooth. That, which is called alopecia[FR], spreads in no certain form. It is found both in the hair of the head, and in the beard. But that, which from its likeness to a serpent is called ophiasis[FS], begins at the hinder part of the head; its breadth not exceeding two fingers; it creeps with two heads to the ears; in some, even to the forehead, till the two heads are joined in the fore part. The former species happens at any age; the latter commonly to infants. The first hardly ever terminates without medicine; the other often goes away of itself.

Some scarify these kinds of areae gently with a knife. Others anoint them with escharotic medicines mixed with oil; and especially burnt paper. Others apply turpentine resin with thapsia. But nothing is better than daily shaving with a razor; because, when the cuticula is gradually cut off, the small roots of the hairs are laid bare. Nor should this be given over, till it appears, that the hair grows thick. It is sufficient to rub the part, that is frequently shaved, with copperas.

CHAP. V.

OF VARI, LENTICULAE, AND EPHELIDES.

It is almost a folly to cure vari, lenticulae, and ephelides: but it is impossible to prevent women from being nice in what regards their beauty. Of these disorders, which I have just mentioned, vari and lenticulae are universally known; however, that species is more rare, which the Greeks call phacia[FT], though that is only of a more ruddy colour, and more unequal surface than the common lenticula. The ephelis[FU] is unknown to most people; and is nothing else than a certain ill coloured asperity and hardness. The others are peculiar to the face; the lenticulae sometimes appear in other parts, of which I did not think it worth while to treat separately elsewhere.

But vari are well cured by the application of resin mixed with an equal quantity of scissile alum, and a little honey. Equal quantities of galbanum and nitre, beat up with vinegar to the consistence of honey, remove a lenticula. The part is to be rubbed with these, and after an interval of several hours, washed clean in the morning, and gently anointed with oil.

An ephelis is cured by resin, with the addition of a third part of fossile salt and a little honey. And for all these disorders, and likewise for giving a proper colour to cicatrices, that composition is good, which is said to be invented by Tryphon the father. In it there are equal parts of myrobalans crocomagma, the

bluish Cimolian chalk(92), bitter almonds, flour of barley, and vetches, white struthium, seed of mellilot: all these are powdered and brought to a consistence with the bitterest honey, and being rubbed on in the evening, are always washed off in the morning.

CHAP. VI.

OF THE DISORDERS OF THE EYES.

The foregoing are indispositions of small account. But our eyes are exposed to grievous and various maladies. And because they contribute so large a share both to the conveniency and pleasure of life, they deserve our utmost care to preserve them.

Presently after the appearance of a lippitude, there are certain indications, from which we may form a presage of the event. For, if a discharge of tears, and a tumour, and a thick gum too(2) have commenced at once; if that gum is mixed with tears, and the tears are not hot, also if the gum is white and soft, and the tumour not hard, there is no danger of the disorder continuing long. But if the tears are copious, and hot, the gum little in quantity, the tumour small, and these are confined to one eye; the case will prove tedious, but without danger. And this species of lippitude is not at all painful; but is hardly ever removed before the twentieth day; sometimes it continues for two months, and sometimes not so long.

If the gum begins to be white and soft, and is mixed with tears, or both these have attacked the two eyes at once; the lippitude may be of shorter continuance, but there is a danger of ulcers. Now a dry and parched gum occasions pain, but terminates sooner; unless it have produced some ulcer.

A large tumour, if it be without pain, and dry, is void

of all danger; if it be dry, but attended with pain, it commonly ulcerates; and sometimes, from this case it happens, that the eye-lid is agglutinated to the eye. There is room also to fear an ulceration in the eye-lids or the pupil, when besides great pain, there is a discharge of salt and hot tears; or even when after the tumour is removed, the tears flow for a long time mixed with the gum.

It is worse still, where the gum is pale or livid, the tears are scalding, or in great quantity, the head hot, and the pain reaches from the temples to the eyes, also if the person is distressed with wakefulness in the night; for in such circumstances, generally the eye bursts, when it were to be wished, it would only ulcerate. A slight fever is of service to an eye that bursts inwardly. If it breaks and is protruded externally, the case admits of no remedy. If from a black colour, some part of it has become whitish, it continues long. But if it be rough and thick, even after the cure, it leaves some mark.

Hippocrates, the most ancient author we have, has observed in his writings, that the eyes are cured by bleeding, by medicines, the bath, fomentations, and drinking of wine. But he has not explained the proper time for these, and the reasons for their use; in which the principal part of medicine consists. There is also much benefit received from abstinence and clysters.

They are sometimes seized with an inflammation; in which they are at once pained and swelled; and there follows a discharge of gum; sometimes more, sometimes less plentiful, or acrid. In such a case, the

principal remedies are rest and abstinence. Wherefore, for the first day, the patient ought to lie in a dark place, and even refrain from speaking; to take no food at all; if he can command himself, not so much as water; if he cannot do that, at least as little of it as possible.

But if the pains are severe, blood must be taken away, and preferably on the second day; but if the case be urgent, on the first; especially if the veins in the forehead swell, the patient be strong, and there is a redundancy of matter: but if the illness be less severe, it calls for a milder cure. It is not necessary to give a clyster, till the second or third day. But a small inflammation requires neither of these remedies; and it is sufficient to rest and fast.

Nevertheless, long fasting is not proper in lippitudes, lest it render the gum more fetid and acrid; but on the second day, some of the gentlest of those things, that generate a thicker phlegm(3), ought to be given, such as sorbile eggs; if the disorder be but slight, pulticula, or bread sopped in milk. On the following days, as much as the inflammation decreases, so much may the quantity of food be increased; but of the same kind; so that above all, nothing salt, or acrid, or extenuating be taken; and nothing be used for drink but water. And with respect to diet, such a regimen is highly necessary.

Now on the first day of the distemper, it is proper to mix p. i. *. of saffron, and p. ii. *. of the finest, whitest flour, with the white of an egg to the consistence of honey; and to spread this upon a piece of linen, and apply it to the forehead, that by

compressing the veins, it may restrain the violent flux of gum. If saffron cannot be had, frankincense has the same effect. It makes no difference whether it be spread upon a bit of linen, or wool. The eyes ought to be anointed with the following composition: as much saffron as can be held with three fingers, myrrh, the bigness of a bean, of poppy tears, the bigness of a lentil, are rubbed down together with passum, and daubed over the eyes with a probe. Another for the same purpose consists of myrrh, p. i. *. mandrake juice p. ii. *. poppy tears p. ii. *. rose leaves, hemlock seed, each p. iii. *. acacia p. iv. *. gum p. viii. *. And these are applied in the day time; but in the night, for promoting rest, it is not improper to lay on the crumb of white bread mixed up with wine. For that both restrains the flux of gum, and if any tears are discharged, it absorbs them, and does not suffer the eyes to be glued up.

If the pain of the eyes be so great as to make this application uneasy and too hard, both the white and yolk of an egg must be dropped into a cup, and a little mulse added to them, and these mixed with the finger; when they are incorporated, soft wool combed, ought to be dipped in it, and saturated with it, and applied over the eyes. This is light, and by cooling restrains the gum; besides, it does not grow dry, nor suffer the eye to be glued. Barley-meal also boiled and mixed with a boiled quince is a proper application. And it is no absurd practice to use rather a pencillum squeezed out of water, if the disorder be less severe, if more so, out of vinegar and water. The former applications are to be bound on with a roller, lest they fall off in the time of sleep: but it is

sufficient to lay the pencillum on the eyes; both because it can be conveniently replaced by the patient himself, and because, when it has grown dry, it must be moistened again. If the disorder is so great as to prevent sleep for a long time, some of the medicines are to be given, which the Greeks call anodyne: and for a boy, the bigness of a vetch is a sufficient dose; for a man, the bigness of a bean. On the first day, it is not fit to inject any thing into the eye, unless the inflammation be very great: for the gum is often rather invited than diminished by that means. But on the second day, even in a severe lippitude, it is proper to relieve by the injection of medicines, when either the patient has been bled, or a clyster has been given; or it appears, that neither of these was necessary.

There are many collyriums proper for this purpose, invented by different authors; and new ones may still be made; since lenient and gently repelling medicines may be easily mixed in various proportions. I shall mention the most celebrated of them.

Philon's collyrium.

The collyrium of Philon contains of washed ceruss, spodium, gum, each p. i. *. poppy tears toasted p. i. *. It is fit to know, that all the ingredients must first be powdered separately, after that mixed and beat up again, dropping in from time to time, either water or some other liquid. Gum, as it possesses some other qualities, so has this peculiar effect upon collyriums, that when they have been long made, and are grown

dry, they continue firmly united, and are not friable.

Dionysius's.

Dionysius's collyrium: of poppy tears toasted till tender p. i. *. toasted frankincense, gum, each p. ii. *. spodium p. iv. *.

Cleon's.

Cleon's is a very famous one: of poppy tears toasted p. i. *. saffron p. i. *. gum p. *. v. to these, while they are powdered, is added juice of roses. Another, by the same, stronger; of iron scales, which is called stomoma[FV] p. i. *. saffron p. ii. *. spodium p. iv. *. lead, both washed and calcined p. i. *. and the same quantity of gum. There is still another of the same author's, chiefly useful where there is a great flux of gum: of castor p. *. i. aloes p. *. i. myrrh p. *. ii. prepared cadmia p. viii. *. a like quantity of antimony, juice of acacia p. xii. *. the mixture may be kept in a small box. But Theodotus added to this composition toasted poppy tears p. *. i. copper calcined and washed p. ii. *. date kernels toasted p. x. *. gum p. xii. *.

*The acharis-
tum of
Theodotus.*

But Theodotus's own, which by some is called acharistum[FW], is thus made: of castor, Indian nard, each p. i. *. lycium p. *. poppy tears the same quantity; myrrh p. ii. *. saffron, washed ceruss, aloes, each p. iii. *. cadmia botryitis washed, calcined copper, each p. viii. *. gum p. xviii. *. juice of acacia,

p. xx. *. antimony the same quantity; to these is added rain water.

The cythion,
or tephrion.

Besides these, amongst the most common collyriums is that, which some call cythion, others from its ash colour, teprion. It contains of starch, tragacanth, acacia juice, gum, each p. i. *. poppy tears p. ii. *. washed ceruss p. iv. *. washed litharge p. viii. *. these in the same manner are beat up with rain water.

The trygodes
of Euelpides.

Euelpides, who was the greatest oculist in our age, made use of one, which he had composed himself, and called it trygodes. It contains of castor p. ii. *. lycium, nard, poppy tears, each p. i. *. saffron, myrrh, aloes, each p. iv. *. calcined copper p. viii. *. cadmia and antimony, each p. xii. *. acacia juice p. xxvi. *. gum the same quantity.

The more violent any inflammation is, so much the more it requires to be alleviated by medicines, with the addition either of the white of an egg, or breast milk. But if neither a physician nor a medicine can be got, it mitigates the disorder to infuse either of these into the eyes by a penecillum made for the purpose. But when relief is obtained, and the flux of gum stops, the slight relics of the disorder, that might perhaps otherwise continue, are discussed by bathing and drinking wine. Therefore the patient ought to bathe moderately, being first rubbed over

with old oil, and longer in his legs and thighs than the rest of his body; and to foment his eyes with plenty of warm water; next to have warm water first, and afterwards water with the cold just taken off, poured over his head; after bathing, he must guard against being exposed to cold, or wind. After this, his diet ought to be somewhat fuller than formerly(4); but he should abstain from all extenuants of phlegm: the wine he drinks should be mild, inclining to rough, of a moderate age; and in this he ought neither to indulge to excess, nor be too sparing, that the former extreme may not occasion crudity, but that by a just quantity sleep may be procured, and the acrimony lurking within may be sheathed. But if a person in the bath has felt more uneasiness in his eyes than he did before (which usually happens to those, who have made too much haste to get into it, while the flux of gum still continued) he ought to come out immediately; to drink no wine that day; and eat even less than he did the day before. Afterwards, as soon as the discharge of gum is sufficiently stopt, he must return again to the use of the bath.

Nevertheless, it sometimes happens, from some unfavourable circumstance either in the weather, or habit of the patient, that for several days neither the pain, nor the inflammation, and least of all, the discharge of gum ceases. When this is the case, and time itself has brought the disorder to a full maturity for it, relief is to be sought from the same remedies, that is, the bath and wine. For though they are hurtful, while these complaints are recent, because they may irritate and inflame them; yet in the

inveterate, which have not yielded to any other remedies, they are commonly very efficacious. For in this, as well as in other cases, when seemingly proper medicines have been tried in vain, those of a contrary nature give relief. But it is expedient for the patient, in the first place, to have his hair clipped close to the skin; next, to foment his head and eyes in the bath, very plentifully, with warm water; then to wipe both with a penecillum, and anoint his head with ointment of iris; to lie in bed, till all the heat acquired in the bath is gone off, and the sweat cease, which was necessarily collected in his head. Then he should make use of the same kind of food and wine above recommended, the latter undiluted; and cover his head, and continue at rest. For after these, either a sound sleep, or a sweat, or a purging, often puts an end to the discharge of gum. If the disorder abates (which sometimes does not happen soon) the same course ought to be pursued for several days, till the cure be completed. If, on these days, he has no stool, a clyster must be injected for relieving the superior parts.

But sometimes a great inflammation arises, and of so violent a nature, that it propels the eyes from their cavity. The Greeks call this proptosis[FX], because the eyes fall forward. It is plain such patients require bleeding, if their strength will admit of it: if that cannot be done, a clyster is necessary, and long fasting. The mildest medicines are required *in this case*. Therefore, some use the first of Cleon's two collyriums mentioned above. But that of Nileus is the best, and all authors agree to give it the preference to any other.

Nileus's collyrium.

It is this: Indian nard, poppy tears, of each p. *. gum p. i. *. saffron p. ii. *. fresh rose leaves, p. iv. *. which are brought to a consistence, either by rain water, or light wine, inclining to rough. And it is not improper to boil pomegranate bark, or melilot, in wines, then to bruise it; or to mix black myrrh with rose leaves; or henbane leaves boiled with the white of an egg; or meal, with acacia juice, or passum, or mulse. And if poppy leaves too be added, they will be somewhat more efficacious. When some one of these is prepared, the eyes ought to be fomented with a penecillum squeezed out of a warm decoction of myrtle or rose leaves in water; after that, the medicine is to be applied. Besides, the skin in the back of the head is to be cut, and a cupping vessel applied to it.

If, by these means, the eye is not restored to its place, but continues prominent as before, we may conclude the eye-sight is gone; and that the eye will next grow hard, or be converted into pus. If the suppuration appears in that angle, which is next the temple, an incision must be made in the eye, that vent being given to the matter, the inflammation and pain may cease, and the coats *of the eye* fall inward, so that the face may be less disfigured afterwards. And then must be used, either the same collyriums with milk, or an egg; or else saffron mixed with the white of an egg. But if it has grown hard, and is mortified, without turning to pus, so much of it must be scooped out, as to prevent a shocking projection; which must be done thus. The external coat must be

laid hold of with a hook, and below that the incision made with a knife; then these medicines are to be injected, till the pain be entirely gone. The same medicines are also necessary for an eye, that is first protruded, and afterwards bursts in several places.

Of carbuncles of the eyes.

It is not uncommon for carbuncles to proceed from an inflammation, sometimes in the eyes themselves, sometimes in their lids; and in the last, they are sometimes in the inside, at other times on the outside. In this case, a clyster must be given; the quantity of food lessened; milk allowed for drink; that the offending acrimony may be sheathed. As to cataplasms and medicines, we must use such as have been proposed against inflammations. And here also the collyrium of Nileus is the best. But if the carbuncle be on the external part of the eye-lid, lintseed boiled in mulse is the most proper for a cataplasm; or if that is not to be had, wheat meal boiled in the same manner.

Of pustules of the eyes.

Sometimes pustules also proceed from inflammations. If this happens in the beginning of the inflammation, the former directions about bleeding and rest are even to be more punctually observed; if later than to admit of bleeding, yet a clyster must be given. If for any reasons that likewise is impracticable, at least the proper diet must be used. In this case too, the mild medicines are

necessary; such as that of Nileus or Cleon.

Collyrium of Philes.

The collyrium which takes its name from Philes, is also suited to this disorder. For it contains of myrrh, poppy tears, each p. i. *. washed lead, Samian earth, which is called after, tragacanth, each p. iv. *. burnt antimony(5), starch, each p. vi. *. washed spodium, washed ceruss, each p. viii. *, which are incorporated with rain water. This collyrium is used mixed either with an egg, or milk.

From pustules sometimes are generated ulcers; and these, when recent, are to be dressed with the like lenient medicines, and mostly the same as I have prescribed above for pustules. There is also a particular application for them, which is called dialibanou[FY]. It contains of copper calcined and washed, poppy tears toasted, each p. i. *. spodium washed, frankincense, antimony calcined and washed, myrrh and gum, each p. ii. *.

Wasting of the eyes.

It happens likewise, that the eyes, either one or both, become less than they ought to be naturally. And this is caused by an acrid flux of gum in a lippitude, also by continual weeping, and wounds badly cured. In such cases, the same mild medicines with breast milk are to be used; and such food as most nourishes and fills the body; and the patient must carefully avoid whatever occasions weeping, and all the anxiety of domestic affairs: and if any misfortune happens

likely to disturb him, it must be concealed from his knowledge: acrid medicines and acrid food hurt by occasioning tears, as much as any other way.

Lice in the eye-lids.

There is a peculiar kind of disorder, in which lice are generated amongst the hair of the eye lids. This the Greeks call phthiriasis[FZ]. Which arising from a bad habit of body, seldom stops there; but generally after some time there follows a smart flux of gum; and the eyes themselves being greatly ulcerated, it even destroys the sight.

Such patients must be purged by clysters; the hair of their head clipped close to the skin, and the head rubbed for a long time every day fasting. They must diligently practise walking, and other exercises; gargle with a decoction of catmint and a mellow fig in mulse; foment the head often in the bath with plenty of warm water; avoid acrid food; use good milk and wine, and also drink more freely than they eat. Medicines too are to be given internally, of a mild nature, that they may not generate any acrid gum; and others externally applied to kill the lice, and prevent the production of more. For this purpose, of aphronitre p. i. *. sandarach p. i. *. stavesacre p. i. *. are powdered together, and then equal quantities of old oil and vinegar are added, till the whole come to the consistence of honey.

Thus much of those distempers of the eyes, which are cured by mild medicines. There are besides these, other kinds, which require a different treatment, commonly proceeding from inflammations, but

continuing even after they

Collyrium of Andreas.

are gone. And in the first place, a flux of thin gum continues in some. To such patients clysters should be given, and their quantity of food diminished. Neither is it improper to anoint the forehead with the composition of Andreas: which consists of gum p. i. *. ceruss, antimony, each p. ii. *. litharge boiled and washed p. iv. *. the litharge is boiled in rain water; and the dry medicines are rubbed with the juice of myrtle. These being spread upon the forehead, a cataplasm of meal is also to be applied over it, made into a paste with cold water, and with the addition either of acacia juice or cypress. It is proper also to make an incision on the top of the head, and apply a cupping vessel there; or to bleed at the temples. The eye ought to be anointed with that composition, which contains of copper scales, poppy tears, each p. *. hartshorn calcined and washed, washed lead, gum, each p. iv. *. frankincense p. xii. *. Now this collyrium, because horn is one of the ingredients, is called diaceratos[GA]. As often as I do not subjoin what kind of moisture is to be added, I would be understood to intend water.

The memigmenon of Euelpides.

For the same purpose is that of Euelpides, which he called memigmenon[GB]. In it there are poppy tears and white pepper, of each an ounce, gum a pound,

calcined copper p. i. *. During this course, with some intervals, the bath and wine are serviceable. And as extenuating food must be avoided by all that labour under a lippitude; so particularly by those that have for a long time a flux of thin humour. But if they be surfeited with such food as generates a thicker phlegm, as is most common in this kind of diet, they must have recourse to that, which because it binds the belly, constringes the body too.

But ulcers, that do not go off with the inflammation, generally either grow fungous, or foul, or at least inveterate. Their excrescences are best suppressed by the collyrium called memigmenon. The foul ones are deterged both by the same, and by that, which is called smilion.

Smilion.

This contains of verdigrease p. vi. *. gum the same quantity, ammoniacum, minium from Sinope, each p. xvi. *. these are rubbed down by some with water, by others, to make them stronger, with vinegar.

Phynon of Euelpides.

That of Euelpides, which he called phynon, is also suitable to this case; of saffron p. i. *. poppy tears, gum, each p. ii. *. copper calcined and washed, myrrh, each p. iv. *. white pepper p. vi. *. But the application of this must be preceded by an ointment.

Sphærion of the same author.

The collyrium of the same author, to which he gave the name of sphærion, is of like virtue; of bloodstone washed p. ii. *. pepper six grains, cadmia washed, myrrh, poppy tears, each p. iii. *. saffron p. iv. *. gum p. viii. *. which are rubbed down with Aminæan wine.

A liquid medicine by the same.

He likewise compounded a liquid medicine for the same purpose, in which were the following things; of verdigrease p. *. minium calcined, copperas, cinnamon, each p. iii. *. saffron, nard, poppy tears, each p. i. *. myrrh p. ii. *. calcined copper p. iii. *. aromatick ashes p. iv. *. pepper fifteen grains. These are rubbed with a rough wine, and then boiled with three heminæ of passum, till the whole unites. And this medicine becomes more efficacious by keeping.

For filling the cavities of ulcers *of the eyes*, the best of all those we have mentioned are the sphærion and the collyrium of Philes. The same sphærion is an excellent medicine for inveterate ulcers, and such as can scarcely be brought to cicatrize.

Hermon's.

There is also a collyrium, which though it be serviceable in many cases, yet seems to be most efficacious in these ulcers. It is said to be invented by Hermon. It contains of long pepper p. i. *. z. *. white pepper p. *. cinnamon, costus, each p. i. *. copperas, nard, cassia, castor, each p. ii. *. galls p. v. *. myrrh, saffron, frankincense, lycium, ceruss, each p. viii. *.

poppy tears p. xii. *. aloes, calcined copper, cadmia, each p. xvi. *. acacia, antimony, gum, each p. xxv. *.

Asclepias.

Cicatrices formed from ulcers are liable to two defects; of being either concave, or protuberant. If they be concave, they may be filled by the sphærion collyrium; or that called asclepias. This consists of poppy tears p. ii. *. sagapenum, opopanax, each p. iii. *. verdigrease p. iv. *. gum p. viii. *. pepper p. xii. *. cadmia washed, ceruss, each p. xvi. *. *Canopite.*But if the cicatrices are thick, they are rendered thin by the smilion, or canopite collyrium, which last contains cinnamon, acacia, of each p. i. *. cadmia washed, saffron, myrrh, poppy tears, gum, each p. ii. *. white pepper, frankincense, each p. iii. *. calcined copper p. ix. *. with rain water. *Pyxinum of Euelpides.*Or the pyxinum of Euelpides, which consists of the following ingredients; of fossile salt p. iv. *. ammoniacum thymiama p. viii. *. poppy tears p. xiii. *. ceruss p. xv. *. white pepper, Cilician saffron, each p. lii. gum p. xiii. *. cadmia washed p. ix. *. Yet the composition, which contains gum p. iii. *. verdigrease p. i. *. crocomagma p. iv. *. seems to be the best for removing a cicatrix.

There is also another kind of inflammation, in which if the patient's eyes swell, and are distended with pain, it is necessary to bleed in the forehead; and to foment the head and eyes plentifully with hot water; to gargle with lentils, or cream of figs; to anoint with the acrid medicines mentioned above; particularly that, which is called sphærion, and which has blood-stone in it. And others are useful too, which are

calculated to lessen the roughness; of which I am going to speak.

This commonly follows an inflammation of the eyes; sometimes it is more violent, at other times more slight. Sometimes too a roughness occasions a lippitude, and that again increases the roughness, and in some is short, in others it continues long, and so as to be hardly ever cured.

In this kind of disorder some scrape the thick and hard eye-lids both with a fig-leaf and a specillum asperatum(6), and sometimes with a knife; and turning them up, they rub them every day with medicines. Which ought not to be practised, unless in a considerable and inveterate roughness, nor that often. For the same end is better obtained by a suitable regimen and proper medicines. Therefore we shall use exercises and the bath more frequently: and foment the eye-lids with plenty of warm water. The food must be acrid and extenuating.

Cæsarian.

The medicine, which is called Cæsarian, contains of copperas p. i. *. misy p. *. white pepper p. v. *. poppy tears, gum, each p. ii. *. cadmia washed p. iii. *. antimony p. vi. *. And this collyrium is allowed to be a good remedy against every kind of disorder in the eyes, except those, that are treated by mild medicines.

Hierax's.

That also, which is called Hierax's, is powerful against a roughness. It consists of myrrh p. *.

ammoniacum thymiama p. ii. *. rasile verdigrease p. iv. *. with rain water. For the same purpose that also is proper, which is called canopite, and the smilion, and the pyxinum, and the sphærion. But if compound medicines are not at hand, a roughness may be easily enough cured by goat's gall or the best honey.

Dry lippitude.

There is likewise a kind of dry lippitude, which the Greeks call xerophthalmia[GC]. In this the eyes neither swell, nor run, but are only red, and heavy with some pain, which is commonly slight, also an itching, and the eye-lids without any hardness stick together in the night-time by means of a very troublesome gum: and the less violent in its degree this species is, so much the longer does it continue.

In this disorder it is necessary to walk much, to take much exercise, to bathe often, and sweat in the bagnio, to use much friction. The proper diet is neither such as is filling, nor over acrid, but the middle kind betwixt these. In the morning, when it is evident that the concoction is completed, it is not improper to gargle with mustard, and alter that to rub the head and face a considerable time.

Rhinion.

The collyrium best adapted to this case is that called rhinion. Which contains of myrrh p. i. *. poppy tears, acacia juice, pepper, gum, each p. i. *. blood-stone, Phrygian stone, lycium, scissile stone, each p. i. *. calcined copper p. iv. *. The pyxinum also is suitable for the same purpose.

But if the eyes be scabrous, which mostly happens in the angles, the rhinion mentioned already may be serviceable. For the same purpose that may be useful, which contains, of rasile verdigrease, long pepper, poppy tears each p. ii. *. white pepper, gum, each p. iv. *. cadmia washed, ceruss, each p. vi. *. *Basilicon of Euelpides.* However, there is none better than that of Euelpides, which he called basilicon. It contains of poppy tears, ceruss, Asian stone, each p. ii. *. gum p. xiii. *. white pepper p. iv. *. saffron p. vi. *. psoricum(7) p. xiii. *. Now there is no simple, which by itself is called psoricum; but a certain quantity of chalcitis and a little more than half its quantity of cadmia are rubbed together with vinegar; and this being put into an earthen vessel, and covered over with fig leaves, is deposited under ground for twenty days, and being taken up again it is powdered, and thus is called psoricum. The basilicon collyrium too is generally allowed to be proper for all disorders of the eyes, that are not treated by mild medicines.

But when compound medicines are not to be had, both honey and wine mitigates an asperity in the angles. These and a dry lippitude too are relieved by an application of bread, softened with wine, over the eyes. For since there is generally a humour, which exasperates sometimes the eye itself, sometimes the angles, or eyelids; by this application, if any humour is discharged, it is drawn away, and if it happens to be lodged near, is repelled.

Of a dimness of the eyes.

A dimness comes upon the eyes, sometimes from a lippitude, at other times even without that, from old age, or weakness. If the disorder proceeds from the relics of a lippitude, the collyrium called asclepias is serviceable. Likewise that, which is composed of crocomagma.

The collyrium which is called diacrocou[GD] is composed peculiarly for this. It contains of pepper p. i. *. Cilician saffron, poppy tears, ceruss, each p. ii. *. psoricum, gum, each p. iv. *.

But if it arises from old age, or weakness, it may be proper to anoint with the best honey, and cyprine and old oil. But it is most expedient to mix together one part of balsam, and two of old, or cyprine oil, and three parts of the most pungent honey. The medicines prescribed above for a dimness *from a lippitude*, and those mentioned before for diminishing cicatrices, are useful in this case too.

Whoever is troubled with a dimness must walk much, use exercise, frequent bathing, at which time the whole body must be rubbed, but principally the head, with iris ointment till it sweat; after that it must be veiled, and not uncovered, till after he has got home, and the sweat and heat have ceased. Then he must keep to an acrid and extenuating diet; and after the interval of some days use a gargarism of mustard.

Of a cataract.

A suffusion also, which the Greeks call hypochysis[GE], sometimes obstructs the pupil of the eye, where vision is performed. If this disorder be

inveterate, it requires an operation to remove it. At the beginning sometimes it is discussed by certain methods adapted to the case. It is expedient to bleed in the forehead, or nose; to cauterize the veins in the temples; by the use of gargarisms to evacuate phlegm; to use fumigations; to anoint the eyes with acrid medicines. The best diet is such as extenuates phlegm.

A palsy of the eyes.

Nor is a palsy of the eyes (which the Greeks call paralysis) to be cured by any different diet, or different medicines, so that it is needless to do more than describe the distemper. It happens then sometimes in one eye, sometimes in both, either from a blow, or from an epilepsy, or spasms, where the eye itself is strongly convulsed, so that it can neither be directed to any particular object, nor be kept fixed; but moves to and fro involuntarily; and therefore cannot see any thing distinctly.

Of a mydriasis.

What the Greeks call a mydriasis[GF] is not very different from this distemper. The pupil is dilated, the sight grows dull, and almost dim. This kind of weakness is extremely difficult to remove. Against both disorders, that is, the palsy and mydriasis, we must use the same remedies as have been prescribed in the dimness of the eyes, with a few alterations; thus for the head, to the iris oil must be added sometimes vinegar, sometimes nitre; it is sufficient to

anoint the eyes with honey. In the latter disorder some have made use of hot waters(8), and been relieved; others without any apparent cause have suddenly lost their sight. Some of these, after continuing blind for some time, from a sudden purging have recovered their sight: whence it seems the less improper, both when the disorder is recent, and when it is of some standing, to procure stools by medicines, in order to force all the noxious matter into the lower parts.

A weakness of the eyes.

Besides these, there is a kind of weakness of the eyes, in which patients see well enough in the day-time, but not at all in the night: which never happens to a woman, when her menstrual discharge is regular. But persons labouring under this disorder ought to be anointed with the blood of a liver (particularly the liver of a he-goat; if that cannot be had, of a she-goat) that drops from it while roasting; and they ought to eat the liver itself. They may nevertheless not improperly make use of the same medicines, that extenuate either cicatrices, or an asperity. Some powder the seed of purslane, and add honey to it, till the mixture be of such a consistence, as not to drop off a probe, and anoint with that. They must also use exercises, bathing, frictions.

Of external hurts in the eyes.

These disorders all arise from internal causes. But externally the eye may be hurt by a blow, so as to

become bloodshot. There is nothing more proper for this case than anointing with the blood of a pigeon, or ringdove, or swallow. Nor is this practice without reason; since the sight of these birds being hurt by some accident, in a little time is restored, and that of the swallow soonest; which gave rise to the fable, that their parents perform by an herb the cure, which is really the work of nature. Their blood therefore is a very proper remedy for our eyes in external hurts, in these different degrees of efficacy; the blood of a swallow is best, next to that of a ringdove; that of a pigeon is least medicinal both to itself and us.

Over an eye that has received a blow, in order to assuage the inflammation, it is also proper to apply cataplasms. Now sal ammoniac, or any other, ought to be very finely powdered, oil being dropped in by degrees, till it acquire the consistence of strigment. Then this is to be mixed with barley-meal boiled in mulse. Upon a review of all the cures published, even by physicians, it is easy to see, that there is hardly one of the abovementioned disorders of the eyes, which may not be sometimes removed by very simple and obvious remedies.

CHAP. VII.

OF THE DISEASES OF THE EARS.

Thus far we have recited those disorders of the eyes, in which medicines are most efficacious; we must now proceed to the ears; the part, which nature has bestowed upon us next in usefulness to the eyes. But in these the danger is much greater. For the mischief arising from the distempers of the eyes is confined to themselves; whereas inflammations and pains of the ears sometimes occasion madness and death: which makes it the more necessary to administer speedy relief in their beginnings, to prevent any greater danger.

Wherefore, when a person first feels a pain, he ought to fast, and observe a strict regimen; the day following, if the disorder increases, to clip the hair of his head, and anoint it all over with ointment of iris warm, and to cover it. But a violent pain attended with a fever, and watching, requires also bleeding. If particular circumstances prevent that, the body must be kept open. Hot cataplasms too, frequently changed, are serviceable; either of the meal of fenugreek, or lint-seed, or any other, boiled in mulse. Spunges also squeezed out of hot water are proper to apply now and then. When the pain is eased, cerate made either of iris or cyprine oil ought to be put round it. In some, however, that which is made of oil of roses, succeeds better. If a violent inflammation prevents sleep entirely, to the cataplasm ought to be added half its quantity of poppy heads toasted and

powdered; and then these may be boiled together in passum, or mulse. It is proper too to infuse some medicine into the ear: which ought always to be made tepid first, and is most conveniently dropped in by a strigil(9). When the ear is filled, soft wool is to be put into it to keep the liquor from returning. And these are general remedies.

Now the medicines *for injection* are the juice of roses, and the roots of reeds, and oil, in which worms have been boiled, and the liquor of bitter almonds, or that, which is pressed from a peach kernel. The compositions for alleviating the inflammation and pain are generally these; of castor, poppy tears, equal quantities powdered, and afterwards mixed with passum. Or equal quantities of poppy tears, saffron, and myrrh are beat, rose oil and passum being added alternately. Or the bitter part of an Egyptian bean is powdered, and rose oil added to it: with which some also mix a little myrrh, or poppy tears, or frankincense with breast milk, or the juice of bitter almonds with rose oil. Or castor, myrrh, and poppy tears in equal quantities, with passum. Or of saffron p. i. *. myrrh, scissile allum, each p. iii. *. and in powdering these, three cyathi of passum are to be gradually mixed with them, and less than a cyathus of honey. This is one of the principal remedies. Or poppy tears with vinegar. We may also use Themison's composition, which consists of castor, opopanax, poppy tears with vinegar, each p. ii. *. aphronitre p. iv. *. which being powdered are incorporated with passum, till they be of the consistence of cerate; and so laid by. When they are wanted for use, the medicine is again rubbed down

by a pistil, with the addition of passum. This is a constant rule, whenever a medicine is too thick for dropping into the ear, that liquor must be added, with which it ought to be compounded, till it be sufficiently fluid.

Of pus in the ears.

But if there is pus in the ears, it is proper to infuse lycium by itself; or ointment of iris; or juice of leek, with honey; or juice of centory with passum; or juice of a pomegranate warmed in its own shell, with the addition of a small proportion of myrrh. A proper mixture is also made of the myrrh called stacte p. i. *. the same quantity of saffron, twenty five bitter almonds, a cyathus and half of honey; which being rubbed together, are to be warmed in a pomegranate shell, when they are to be used. Those medicines, which are compounded for an ulcerated mouth, are equally sanative to ulcers of the ears. If these be of pretty long standing, and there is a great discharge of sanies, the proper composition is that generally ascribed to Erasistratus. It contains of pepper, saffron, each p. i. *. myrrh, misy calcined, each p. ii. *. calcined copper p. ii. *. These are rubbed down with wine; when they are grown dry, three heminae of passum are added, and they are boiled together. When they are to be used, honey and wine are added to them. There is also a medicine of Ptolemaeus the surgeon; which contains mastich, galls, of each p. i. *. omphacium p. i. *. juice of the pomegranate. That of Menophilus is very efficacious, which consists of the following things; of long pepper p. i. *. castor p.

ii. *. myrrh, saffron, poppy tears, Syrian nard, frankincense, pomegranate bark, the inner part of an Egyptian bean, bitter almonds, the best honey, each p. iv. *. When they are powdered, the sharpest vinegar is added, till the whole be of the consistence of passum. There is also a composition of Crato's; of cinnamon, cassia, each p. i. *. nard, lycium, myrrh, each p. i. *. aloes p. ii. *. honey, three cyathi, wine a sextarius. Of these the lycium is boiled with the wine; after that mixed with the other ingredients. But if the quantity of pus be great, and there is a bad smell; of rasile verdigrease, frankincense, each p. ii. *. honey, two cyathi, of vinegar four, are boiled all together. When the composition is to be used, it is mixed with sweet wine. Or scissile allum, poppy tears, juice of acacia are mixed in equal quantities, and to these is added juice of henbane less than half the quantity of any of the other ingredients; and these being powdered are diluted with wine. The juice of henbane too by itself is pretty good.

Asclepiades compounded a general remedy against all disorders of the ears, which is now approved by experience. In it there are of cinnamon, cassia, each p. i. *. flowers of round cyperus, castor, white pepper, and long, amomum, myrobalans, each two scruples, male frankincense, Syrian nard, fat myrrh, saffron, aphronitre, each p. ii. *. Which being powdered separately, and afterwards mixed, are rubbed down with vinegar; and being thus preserved are diluted with vinegar when used. In the same manner, the sphragis of Polybus liquified with sweet wine, is a general remedy for disorders in the ears; which composition is contained in the former book.

But if sanies is discharged, and there is a tumour, it is not improper to wash it with diluted wine by a syringe; and then to infuse rough wine mixed with oil of roses, and the addition of a little spodium, or lycium with milk, or the juice of the blood herb, with oil of roses, or juice of pomegranate with a very small proportion of myrrh.

If there are also foul ulcers, it is better to wash them with mulse; and after that, some one of the compositions mentioned above, that contains honey, is infused. If the pus flows more plentifully, in that case, the hair of the head is to be clipped close, and plenty of warm water poured over it; also gargarisms must be used, and walking to lassitude, with a sparing diet. If blood likewise appears from the ulcers, lycium with milk ought to be infused; or a decoction of roses in water; with the addition of the juice either of blood herb, or acacia.

But if a fungus has grown upon the ulcers, which is fetid, and discharges blood, it ought to be washed with tepid water; and after that, the composition infused, which is made of frankincense, verdigrease, vinegar, and honey; or honey boiled with verdigrease. Copper scales too with sandarach, powdered, is proper to be dropped in by a pipe.

Of worms in the ears.

When worms are generated there, if they be within reach, they must be drawn out with a specillum oricularium(10), if farther in, they must be killed by medicines; and means used to prevent the breeding of more. White hellebore powdered with vinegar,

answers both these intentions. The ear ought to be washed also with a decoction of horehound in wine. Thus, the worms being killed slide down into the entrance of the ear, from whence they may be taken out with very great ease.

Obstructions in the ears.

If the orifice of the ear be straitened, and a thick sanies is contained within, the best honey ought to be put into it. If that does little good, to a cyathus and half of the best honey must be added of rasile verdigrease p. ii. *. which are to be boiled together, and made use of. Iris also with honey is good for the same purpose. Likewise of honey and oil of roses two scruples. Also of galbanum p. ii. *. myrrh with honey, and ox-gall, each p. ii. *. wine a sufficient quantity to dilute the myrrh.

Dulness of hearing.

When a person grows dull of hearing, (which most commonly happens after long pains of the head) in the first place, it is proper to inspect the ear itself. For there will appear either a crust, such as grows upon ulcers, or a collection of the cerumen. If there is a crust, either warm oil must be infused, or verdigrease with honey, or juice of leek, or a little nitre with mulse. And when this crust falls forward, it must be washed with tepid water, that after it has fairly disengaged itself it may be the easier pulled out by the specillum oricularium. If there be cerumen, and this is soft, it must be taken out with

the same instrument. But if it be hard, vinegar, and a little nitre with it must be injected; and when it is softened, the ear should be washed in the same manner, and cleansed. And if a heaviness of the head remain, the hair must be clipped, and the head gently rubbed, but a long time, with the oil of iris or laurel, and with either of these may be mixed a little vinegar: then the patient must take a long walk, and after anointing, foment the head gently with warm water; and make use of food of the weakest and middle class, and more especially take diluted drinks; sometimes use gargarisms. Into the ear must be infused castor, with vinegar and laurel oil, and the juice of radish rind, or the juice of wild cucumber, with the addition of rose leaves powdered. The juice also of unripe grapes infused with oil of roses, is pretty good against a deafness.

Of a noise in the ears.

The disorder is of a different nature, where there is a noise within the ears themselves: and this prevents them from receiving an external sound. This is slightest, when it proceeds from a gravedo; worse, when it is occasioned by a distemper or inveterate pains of the head; worst of all, when it is the harbinger of some violent disease, and particularly of an epilepsy. If it happens from a gravedo, the ear ought to be cleansed, and the patient hold in his breath, till some frothy moisture issue from it. If, from a distemper, or pain of the head, the same rules *as prescribed in a dulness of hearing*, must be practised with regard to exercise, friction, pouring on of cold

water, and the use of gargarisms; no food but such as extenuates must be used; juice of radish, with oil of roses, or with the juice of the root of wild cucumber, must be infused into the ear, or castor with vinegar and laurel oil. Hellebore is also rubbed with vinegar, then incorporated with boiled honey, and being made into a collyrium, is introduced into the ear. If it has begun without these, and therefore gives reason to fear the approach of some terrible disease, castor ought to be infused into the ear with vinegar, or oil, either of iris or laurel; or together with the last, castor and the juice of bitter almonds; or myrrh and nitre with oil of roses and vinegar. But a proper diet is more serviceable in this case too. And the same rules are to be observed, which I prescribed above, even with greater exactness; besides which, the patient must refrain from wine, till the noise cease.

But if, at the same time, there are both a noise and an inflammation, it is sufficient to inject laurel oil, or that, which is expressed from bitter almonds; with which, some mix either castor or myrrh.

Of extraneous bodies in the ears.

It sometimes happens too, that something falls into the ear, as a small stone, or some animal. If a flea has got into it, a little wool must be pressed in; and if it comes upon that, it is drawn out along with it. If it has not followed it, or it be any other animal, a probe wrapt in wool must be dipped in the most adhesive resin, particularly turpentine, and this is to be introduced into the ear, and turned round there:

for it will certainly catch hold of it, and bring it away. But if it be any lifeless thing, it must be drawn out by the specillum oricularium, or a blunt hook, but little bent. If these means do not succeed, it may be drawn out by resin, in the same manner as directed in the preceding case. Sternutatories also are very proper to force it out, or water strongly injected by a syringe. *The following method is also practised in this case*; a board is laid down(11), supported in the middle, with both ends hanging over, and the patient is tied upon that, lying on that side, the ear of which is affected, so that he does not reach over the board; then the end of the board, where his feet are, must be struck with a hammer, and thus by shaking the ear, what is within it drops out.

CHAP. VIII.

OF THE DISEASES OF THE NOSE.

Ulcers in the nostrils must be fomented with the steam of hot water. This is done both by applying a squeezed sponge, and putting under the nostrils a narrow-mouthed vessel filled with hot water. After this fomentation, the ulcers are to be anointed either with dross of lead, or ceruss, or litharge. When a person powders any of these, he may add, while they are rubbed, alternately, wine and myrtle oil, till he make it of the consistence of honey. But if these ulcers be near the mouth, and have several crusts, and a fetid smell, which kind the Greeks call ozaena[GG], we may take it for granted, that it is hardly possible to cure that disease. Nevertheless, the following things may be tried; to clip the hair of the head close to the skin, and daily to rub it briskly, and pour plenty of warm water over it; to walk much; to eat sparingly, and such food as is neither acrid nor of the strongest kind. Then to put into the nostril honey, with a very little turpentine resin (which is done by a probe, wrapt up in wool) and let this moisture be drawn in by the breath, till the taste of it be perceived in the mouth. For by these means, the crusts are loosened, which ought then to be discharged by sneezing. The ulcers being thus cleansed must be fumigated with the vapour of hot water; afterwards should be applied, either lycium diluted with wine, or the lees of oil, or omphacium, or juice of mint, or of horehound; or copperas that

has been burnt white, and then powdered; or the pulp of a squill bruised; to any of these honey may be added, of which in the other mixtures there ought to be only a very small part; with the copperas so much as to make it liquid; but with the squill a considerable quantity; then the end of a probe must be wrapped in wool, and dipped in the medicine; and by that the ulcers are to be incarned. And further, a piece of lint is to be rolled up in an oblong form, and dipped in the same medicine, which is to be introduced into the nostril, and loosely tied at the lower part. This ought to be done twice a day, in the winter and spring, and thrice in the summer and autumn.

Of fleshy caruncles in the nostrils.

Sometimes in the nostrils there grow caruncles resembling womens' nipples, and these adhere to its extremities, where it is cartilaginous. These ought to be treated with escharotic medicines; by which they are certainly consumed. A polypus[GH] is a caruncle sometimes white, sometimes inclining to a red colour, which sticks to the bones of the nostrils; and sometimes spreading towards the lips, it fills the nostril, at other times reaching backward through the opening, by which the breath passes from the nose to the fauces, increases so much, that it may be seen behind the uvula; and almost suffocates the patient, especially when the south or east wind blows. It is generally soft, seldom hard; and the latter obstructs the breath more, dilates the nostrils, and is commonly of the cancerous nature, and therefore

ought not to be touched. The other kind is generally cured by cutting; sometimes, however, it withers, if by means of lint or a pencillum, that composition be thrust up into the nose, which contains of Sinopian minium, chalcitis, lime, sandarach, each p. i. *. copperas p. ii. *.

CHAP. IX.

OF THE TOOTHACH.

In the toothach, a disorder, that may justly be ranked even amongst the greatest torments, the use of wine must be entirely forbid; and at first a total abstinence from food must be observed; afterwards it may be taken sparingly, but soft, lest the teeth be irritated by chewing. Then externally, by means of a sponge, the steam of hot water is to be applied, and a cerate made of cyprine, or iris oil spread upon wool, and the head must also be covered. But if the pain be more severe, a clyster is useful, with hot cataplasms applied to the cheek, as also some medicinal hot liquor held in the mouth, and frequently changed. For which purpose is used a decoction of cinquefoil root in diluted wine; and henbane root, either in vinegar and water, or diluted wine, with the addition of a little salt to either of them; and poppy heads not over dry, and mandrake root prepared in the same manner. But in these three, care must be taken not to swallow what is in the mouth. The bark of the root of white poplar, boiled in diluted wine, does very well for this purpose; or hartshorn shavings in vinegar, and catmint with teda(12), and a mellow fig; also a mellow fig, either in mulse or in vinegar and honey, and when the fig is dissolved by boiling, the liquor is strained. A probe also wrapt up in wool is dipped into hot oil; and used to touch the tooth itself. Moreover, something like cataplasms are put into the tooth. For which end the inner part of the

shell of an acid and dry pomegranate is powdered, with an equal quantity of galls and pine bark, and with these is mixed minium; which being powdered, are brought to a consistence with rain water; or panaces, poppy tears, hog's fennel, stavesacre without its seeds, powdered in equal proportions; or three parts of galbanum, and a fourth of poppy tears. Whatever is applied to the teeth, a cerate, such as is directed above, ought, nevertheless, to be kept upon the cheek, and covered with wool. Some also bruise and spread upon linen, myrrh, cardamoms, of each p. i. *. saffron, pellitory, figs, pepper, each p. iv. *. mustard p. viii. *. and apply this to the arm of that side, where the painful tooth is; if it be in the upper jaw, in the part next the scapula; if in the lower, on that next the breast; and this relieves the pain; and when it has given ease, it must be immediately taken away.

Now if the tooth be spoilt, we need not be hasty in extracting it, unless there be a necessity for it; but in such a case, to all the fomentations directed before, must be added some stronger compositions to ease the pain. Such as is that, which contains of poppy tears p. i. *. pepper p. ii. *. sory(13) p. x. *. these are powdered and mixed up with galbanum, and put round the affected tooth; or that of Menemachus principally for double teeth, in which are of saffron p. i. *. cardamoms, soot of frankincense, figs, pepper, pellitory, each p. iv. *. mustard p. viii. *. Some mix of pellitory, pepper, elaterium, each p. i. *. scissile allum, poppy tears, stavesacre, crude sulphur, bitumen, bay-berries, mustard, of each p. ii. *. But if the pain make it necessary to take it out, a pepper

corn stript of its bark, and in the same manner an ivy berry put into its opening, splits the tooth, so that it comes away in scales. The prickle of the planus fish also (which we call pastinaca, the Greeks trygon) is toasted, then powdered, and mixed with resin, which being put round the tooth loosens it. Scissile alum likewise put into the opening disposes the tooth to come away. But it is more expedient to wrap this in a little wool, and then put it in: because in that way it both preserves the tooth, and eases the pain. These are the prescriptions of physicians; but the experience of our peasants has discovered, that for the toothach the herb horsemint ought to be pulled up by the roots, and put into a bason, and water infused upon it, and that the patient should sit down close by it, covered all over with clothes; and then red hot flints are to be thrown into the bason, so as to be covered with the water, and the patient with his mouth open must receive the vapour, close wrapt up as before directed. For both a plentiful sweat follows, and a continued stream of rheum runs from the mouth, which secures health for a pretty long time, and frequently for a whole year.

CHAP. X.

OF THE DISEASES OF THE TONSILS.

If the tonsils swell from an inflammation without an ulcer, the head must be covered as in the last disorder, and the part fomented externally with the vapour of hot water; the patient must walk much; lie in bed with his head raised; and use gargarisms of the repellent medicines. The liquorice root too bruised, and boiled in passum or mulse, has the same effect. And it is not amiss to touch them gently with some medicines, which are made in this manner: the juice is squeezed from a sweet pomegranate, and a sextarius of this is boiled over a gentle fire to the consistence of honey; then saffron, myrrh, scissile alum, of each p. ii. *. are powdered separately, and to these are added gradually two cyathi of mild wine, of honey one; after that, they are mixed with the first mentioned juice; and again gently boiled; or a sextarius of the same juice is boiled in the same way, and the following things powdered in like manner are added to it; of nard p. *. omphacium p. i. *. cinnamon, myrrh, cassia, each p. i. *. And these same compositions are proper both for purulent ears and nostrils. The food in this disorder also ought to be mild, lest it exasperate the inflammation.

But if the inflammation is so great as to obstruct the breath, the patient must rest in bed, abstain from eating, and take nothing else but warm water: a clyster must also be given, and a gargarism used of figs and mulse; and the part touched with honey and

omphacium. Externally the hot vapour must be applied, but for a longer time, till they suppurate and break of themselves. If pus is contained within, and the tumours do not break, they must be cut. Afterwards the patient must gargle with warm mulse.

But if with an inconsiderable swelling there is an ulceration, for a gargarism there must be added to the cream of bran a little honey, and the ulcers are to be anointed with the following medicines: three cyathi of the sweetest passum are boiled into one; then is added of frankincense p. i. *. saffron, myrrh, each p. *. and the whole is set upon the fire again, till it boil. When the ulcers are clean, he must gargle with the same cream of bran, or with milk. And in this case also a mild diet is necessary; to which may be added sweet wine.

CHAP. XI.

OF ULCERS OF THE MOUTH.

Ulcers of the mouth, if they be attended with an inflammation, and are foul and red, are best treated by the medicines prepared from pomegranates mentioned before. And a repellent cream, with the addition of a little honey, is to be held in the mouth often; the patient must walk, and avoid all acrid food. When the ulcers begin to be clean, a mild liquor, and sometimes the best water is to be kept in the mouth: and the use of wine undiluted does service, also a fuller diet, provided it be not at all acrid. The ulcers ought to be sprinkled with scissile allum, and a little more than half its quantity of unripe galls.

If they are already covered with crusts, such as we find in burns, the compositions which the Greeks call antherae[GI] are to be applied. These contain of long cyperus, myrrh, sandarach, allum, equal parts; or, of saffron, myrrh, each p. ii. *. iris, scissile allum, sandarach, each p. iv. *. long cyperus p. viii. *. Or, of galls, myrrh, each p. ii. *. scissile allum p. ii. *. rose leaves, p. iv. *. But some mix together of saffron p. *. scissile allum, myrrh, each p. i. *. sandarach p. ii. *. long cyperus p. iv. *. The former are sprinkled on dry; the last is applied with honey; and not only to these ulcers, but to the tonsils also.

But those ulcers, which the Greek call aphthae, are by far the most dangerous; that is, in children; for

they often kill them: in men and women there is not the same danger. They begin at the gums, next possess the palate, and the whole mouth; then descend to the uvula and fauces. When these are affected, it is not easy for the child to recover. And the case is more deplorable, if the infant is yet sucking; because it is more difficult to apply any remedy. But in the first place the nurse must be obliged to exercise by walking and such employments as move the superior parts; she must be sent to the bath, and ordered to pour warm water there over her breasts; next, her food must be mild, and such as is not easily corrupted; and if the child have a fever, she must drink water; if not, diluted wine. And if the nurse is costive, she must have a clyster; if phlegm collects in her mouth, a vomit. Then *for the infant*, the ulcers must be anointed with honey, to which is added that kind of rhus(14), which is called Syrian, or bitter almonds; or with a mixture of dry rose leaves, pine kernels, and mint incorporated with honey; or that medicine may be used, which is made up with mulberries; the juice of which is boiled in the same manner as that of the pomegranate to the consistence of honey; and in the same way, saffron, myrrh, allum, wine and honey are mixed with it. Nor is any thing to be given, which may provoke the discharge of humour. If the child is come to more strength, he ought to gargle with such mixtures, as have been mentioned before. And if the milder medicines do but little service here, such are to be used, as by their caustic quality may cover the ulcers with crusts. The scissile allum is powerful, or chalcitis, or copperas. Fasting too, in as great a

degree as the patient can bear, does service. The food ought to be mild; however to cleanse the ulcers, it is proper to give sometimes cheese spread with honey.

CHAP. XII.

OF ULCERS OF THE TONGUE.

Ulcers of the tongue require no other medicines than those, that have been laid down in the former part of the last chapter. But such as arise upon the side of it continue longest. And it is necessary to inspect whether some tooth opposite to it is not too sharp, which often prevents an ulcer in that part from healing, and for that reason must be filed.

CHAP. XIII.

OF PARULIDES AND ULCERS IN THE GUMS.

Some painful tubercles also grow sometimes in the gums, near the teeth; the Greeks call them parulides[GJ]. It is proper at the beginning, to rub these gently with powdered salt, or with a mixture of fossile salt calcined, and cypress and catmint; then to wash the mouth with the cream of lentils, withal holding the mouth open, till the phlegm is sufficiently discharged. In a greater inflammation the same medicines are to be used, as were directed before, for ulcers of the mouth; and a little soft lint is to be rolled up in one of those compositions, which I said were called antherae, and that must be put betwixt the tooth and the gum. But if the tumour be too hard to admit of that, the steam of hot water, by means of a spunge, must be used externally, and cerate applied. If a suppuration appears, the steam must be used longer; and a hot decoction of figs in mulse, must also be held in the mouth. And the tubercle must be cut before it be quite ripe, lest the pus, by continuing there too long hurt the bone. If the tumour be pretty large, it is better to cut it out entirely, so that the tooth may be freed on both sides. When the pus is discharged, if the wound be slight, it is sufficient to hold warm water in the mouth, and to foment externally with the same vapour; if it be larger, to make use of the cream of lentils, and the same medicines, by which other ulcers in the mouth are cured.

Other ulcers, likewise, frequently arise in the gums, which are relieved in the same manner, as those in the other parts of the mouth. However, it is highly proper to chew privet, and hold the juice of it in the mouth. It sometimes happens, too, that from an ulcer in the gum, whether it be a parulis or not, pus is discharged for a long time, when a tooth is either rotten, or broke, or the bone otherwise spoilt; and that commonly proceeds from a fistula. When this is the case, the part must be opened, and the tooth extracted; if there be any exfoliation, it must be taken out; if any part of it is spoilt, it must be scraped. After which, the same methods must be taken, as were prescribed before in the cure of other ulcers. But if the gums leave the teeth, the same antherae are helpful. It does good also to chew pears or apples not very ripe, and to keep their juice in the mouth. And mild vinegar held in the mouth may have the same effect.

CHAP. XIV.

OF AN INFLAMMATION OF THE UVULA.

A violent inflammation of the uvula may justly excite our fears. Therefore, in this case, abstinence is necessary, and it is proper to bleed; and if there is any good reason against that, a clyster is serviceable. Besides, the head must be covered, and kept pretty high; next, a decoction of bramble and lentils in water, must be used as a gargarism; and the uvula itself be touched with honey, mixed either with omphacium, or galls, or scissile allum. The medicine also, which is called andronium is suitable to this case. It consists of scissile allum, scales of red copper, copperas, galls, myrrh, and misy; which are powdered separately, and being mixed, they are again rubbed with the addition of rough wine, to the consistence of honey. It does great service also to apply to the uvula the juice of celandine, by means of a spoon. When the uvula is moistened with any of these, a great quantity of phlegm runs out; and when that ceases, the patient must gargle with hot wine.

But if the inflammation be slight, it is sufficient to powder laser, and add to it cold water, and to put this water into a spoon, and hold it below the uvula. And when it is not much swelled, cold water alone, used in the same way, constringes it. The patient must also use a gargarism of water, either with laser, or without it. But the chirurgical cure for a lengthened uvula I shall describe afterwards.

CHAP. XV.

OF A GANGRENE OF THE MOUTH.

If a gangrene seizes ulcers of the mouth, it is to be considered in the first place, whether the body be in a bad habit: if it be, that must be rectified; and then we may proceed to the cure of the ulcers. But if that disorder be on the surface, it does well enough to sprinkle a dry anthera upon the ulcer, if moist: if it be somewhat dry, it must be laid on with a small portion of honey: if a little deeper, two parts of burnt paper, and one of orpiment: if the disorder is of a considerable depth, three parts of burnt paper, and a fourth of orpiment, or equal parts of salt and iris both toasted; or equal parts of chalcitis, lime, and orpiment. But it is necessary to dip lint in rose oil, and apply over that escharotic medicines, to prevent their hurting the sound contiguous part. Some also throw in so much toasted salt into a hemina of strong vinegar, till it will dissolve no more; next, they boil away this vinegar till the remainder be dry; and powder the salt, and sprinkle it on the ulcers. Now, as often as a medicine is applied, both before and after, the mouth must be washed, either with cream of lentils, or a decoction of vetches, or olives, or vervains in water; and with any of these must be mixed a little honey. Vinegar of squills, also held in the mouth, has no small efficacy against these ulcers; and vinegar mixed again with the salt, boiled in vinegar, as before directed. But when either of these is used, it must be kept in the mouth a long time

together, and be repeated twice or thrice in a day, as the malady is more or less severe. And if the patient be a child, a probe must be wrapped in wool, and dipped into a medicine, and held upon the ulcer; lest for want of thought, he should swallow the escharotics. But if there be a pain in the gums, and some of the teeth be loosened, they ought to be pulled out: for they very much obstruct the cure. If medicines do no service, the ulcers will require to be cauterized: which, however, is not necessary in the lips, because it is more convenient to cut them out. And both that which is cauterized, and that which is cut out, are equally incapable of being filled up without the manual operation. Now the bones of the gums, which have but little life in them, when once stripped by burning, continue bare ever after: for the flesh never grows again there. Upon the burnt places, however, lentils must be applied, till they recover their soundness, as far as the case will admit.

CHAP. XVI.

OF PAROTID SWELLINGS.

These are the disorders in the head, which generally require the help of medicines, but under the ears, it is common for parotides[GK] to arise; sometimes in health, when an inflammation commences there; sometimes after long fevers, when the violence of the disease settles in that part. This is a kind of abscess: and therefore requires no peculiar method of cure. This one caution, however, is necessary, that if the swelling came without any preceding distemper, repellents should first of all be tried: if the disorder proceeds from any illness, that method is hurtful; and it is more expedient to have it maturated and opened as soon as possible.

CHAP. XVII.

OF A PROMINENT NAVEL.

In the case of a prominent navel, to prevent the necessity of any chirurgical operation, trial must first be made of abstinence, and a clyster must be given; over the navel may be applied that composition, which consists of hemlock and soot, each p. i. *. ceruss washed, p. iv. *. lead washed p. viii. *. with two eggs; to which is likewise added the juice of night-shade. This ought to lie on for a pretty long time; and, in the mean while, the patient is to be restrained from motion, use a spare diet, and avoid every thing flatulent.

CHAP. XVIII.

OF THE DISEASES OF THE PRIVATE PARTS.

The next disorders we are to treat of, are those of the private parts. The names of which amongst the Greeks are both more tolerable, and already established by custom; since they are of common use in almost every book and discourse of physicians: with us the terms are more indecent, and have had no sanction from the conversation of modest men to qualify their coarseness. This makes it difficult to treat of them so, as at once to preserve a delicacy of expression, and deliver plainly the precepts of the art. Nevertheless this circumstance ought not to deter me from writing. In the first place, because it is my intention to comprehend every thing, that I have learned to be useful; in the next place, because every body should know how to cure those disorders, which we are so unwilling to expose to another.

Therefore, if the penis be swelled from an inflammation, and the prepuce cannot either be drawn back, or brought forward again, the part must be fomented plentifully with warm water. And when the glans is covered, warm water must also be injected by a syringe, betwixt it and the skin. If the skin, mollified and extenuated by this means, can be drawn back, the subsequent part of the cure is more easy; if the swelling prevails *against this remedy*, lentils, or horehound, or olive leaves boiled in wine must be applied, and to any of these, while it is rubbed, a little honey is added; and the penis is to be

tied up to the belly; which is necessary in the cure of all its disorders; and the patient ought to confine himself to a strict regimen, and abstain from eating, and relieve his thirst by nothing but water. The day following, the fomentation of water must be applied in the same way, and trial made, even with some degree of violence, to pull back the prepuce; if it will not give way, the surface of it must be slightly cut with a knife. For when the sanies is discharged, the part will be extenuated, and the prepuce more easily drawn back.

Whether it has yielded to the latter method, or has never resisted, ulcers will be found, either in the inner part(15) of the prepuce, or in the glans, or in the penis beyond that; which must, of necessity, be either clean and dry, or humid and purulent. If they be dry, they must be first fomented with hot water; then lycium, with wine applied, or oil lees boiled with the same, or rose oil with butter. If there is a thin humour in them, they must be washed with wine; then a little honey and oil of roses with butter, and a fourth part of turpentine resin must be used. But if pus is discharged from them, first of all they ought to be washed with warm mulse; after which is applied of pepper p. i. *. myrrh p. ii. *. saffron, calcined milsy, each p. ii. *. which are boiled with a rough wine, to the consistence of honey. The same composition is also proper for the tonsils, a moist uvula, and ulcers of the nostrils and mouth. Another for the same purpose: of pepper p. i. *. myrrh p. i. *. saffron p. ii *. milsy p. i. *. calcined copper p. ii. *. which are first rubbed down with a rough wine, then when they have grown dry, they are again rubbed

with three cyathi of passum, and boiled to the consistence of viscum. Verdigrease too, with boiled honey, and those compositions, which were mentioned before, for ulcers of the mouth, cure these. But the composition of Erasistratus, or Crato, is a proper application for purulent ulcers of the parts of generation. Olive leaves also are boiled in nine cyathi of wine(16), and to these are added of scissile allum p. iv. *. lycium p. viii. *. honey a cyathus and half; and if the quantity of pus be pretty great, this medicine is diluted with honey; if small, with wine. This is a constant rule; after dressing, while the inflammation continues, to apply over it such a cataplasm, as before directed, and to dress the ulcers every day in the same manner. But if pus begins to be discharged in a great quantity, and is fetid, the *ulcer* ought to be washed with cream of lentils, with the addition of a little honey, or a decoction of olive, or mastich leaves; or a decoction of horehound used in the like manner with honey. And the same dressings must be applied; or else omphacium with honey; or that composition for the ears, which is made of verdigrease and honey; or the composition of Andron; or an anthera, with the addition of a little honey. Some dress all the ulcers, which we have yet mentioned, with lycium and wine.

If the ulcer increases in breadth and deepness, it ought to be washed in the same manner; and either verdigrease, or omphacium with honey, applied; or Andron’s composition; or of horehound, myrrh, saffron, scissile alum calcined, dry rose leaves, galls, each p. i. *. Sinopian minium, p. ii. *. which are first

powdered separately; then mixed and rubbed together in honey, till they acquire the consistence of liquid cerate; after which they are boiled in a copper vessel, gently, so as not to boil over; when the drops of it grow hard, the vessel is taken off the fire; and this medicine, as occasion requires, is softened, either with honey or wine. The same composition, by itself, is also good for fistulas.

Sometimes too, the ulcer penetrates to the nerves; and there is a plentiful discharge of humour, and thin sanies and fetid, of no consistence, but like water, in which recent flesh has been washed; there are pains and prickings in the parts. Although this be of the purulent kind, yet it must be cured by mild medicines; such as the tetrapharmacum plaister, liquified with rose oil, and mixed with a little frankincense; or that, which is made of butter, rose oil, resin, and honey, already mentioned. Above all, this ulcer is to be fomented with abundance of warm water, and covered, and not exposed to the cold.

Sometimes also, by these ulcers, the penis under the skin is so consumed, that the glans falls off. In which case, the prepuce itself must be taken off by circumcision. And it is a general rule, whenever the glans, or any part of the penis falls off, or is cut off, that the skin be kept from falling in contact and uniting with the ulcer(17), so that it cannot be drawn back afterwards, and perhaps may even obstruct the urinary passage.

Tubercles likewise, which the Greeks call phymata, arise about the glans; which are cauterized either by medicines, or the actual cautery; and when the

sloughs cast off, copper scales are sprinkled upon them, to prevent any thing growing there again.

Of a gangrene.

In what we have hitherto described there is still no gangrene; to which, as in the other parts, so more especially here, ulcers are liable. It begins with a blackness. If this seizes the prepuce, a probe must be immediately put under it, and an incision made; then the extremities are to be laid hold of with a vulsella(18), and whatever is corrupted must be cut away, and even some of the sound part taken off, and the place cauterized. Whenever any part is burned, the next step is to apply lentils; afterwards, when the sloughs have cast off, the cure is the same with that of common ulcers.

But if a gangrene has seized the penis itself, some of the escharotic medicines must be sprinkled upon it, chiefly that, which is composed of lime, chalcitis, and orpiment. If medicines fail of success, here also whatever is corrupted is to be cut out with a knife, in such a manner as that some of the sound part be taken with it. This rule is as universal as the former, when a gangrened part is cut away, that the wound must be cauterized. But if either by means of medicines, or the actual cautery, the sloughs have grown callous, there is great danger, that when they cast off, a profusion of blood from the penis may follow. Therefore long rest is necessary, and keeping the body almost immoveable, till the sloughs be gently loosened from it in proper time. But if a person either wittingly, or inadvertently, by walking

too soon has separated the sloughs, and there ensues a hæmorrhage, cold water must be applied. If that does not prevail, recourse must be had to those medicines, which stop blood. If even these do not relieve, the part must be cauterized carefully and cautiously; and not afterwards exposed to the same danger by any motion whatsoever.

Of a phagedaena.

Sometimes also in the same place there happens that kind of gangrene, which the Greeks call phagedæna[GL]. In which no time is to be lost, but the same remedies must be immediately applied; and if these are not successful, it must be burnt by the actual cautery. There is likewise a certain blackness, which gives no pain, but spreads, and if we do not resist it, it makes its way to the bladder; and cannot be cured afterwards. But if it be at the end of the glans near the urinary pipe, a small probe should be introduced into that first, to prevent its closing; and then the actual cautery must be applied to the ulcer. But if it has penetrated deep, whatever is tainted must be cut off. For the rest, it must have the same treatment with other gangrenes.

A callosity or carbuncle.

There is likewise sometimes a callous excrescence from the penis, which is almost void of all sensation, and ought to be cut out. A carbuncle, as soon as it appears there, must be washed by means of a syringe; then it must be cauterized too with

medicines, particularly chalcitis with honey, or verdigrease with boiled honey, or sheep's dung toasted and powdered with honey. When it falls off, liquid medicines must be used, which are composed for the lips of ulcers.

Diseases of the testicles.

If any inflammation begins in the testicles without a blow, blood must be taken from the ancle; the patient must abstain from eating; that composition must be applied, which consists of bean meal boiled in mulse, then mixed with powdered cummin, and worked up to a consistence with honey; or powdered cummin with cerate made of rose oil; or lintseed toasted, powdered, and boiled in mulse; or wheat meal boiled in mulse with cypress; or lily root bruised. But if the testicles are grown hard, lint or fenugreek seed, boiled in mulse, should be applied; or cerate made of cyprine oil; or fine flour rubbed with wine and the addition of a little saffron. If the hardness be already of pretty long standing, the root of wild cucumber boiled in mulse and then bruised does a great deal of service.

If they are swelled from a blow, it is necessary to let blood, and more so if they are livid besides; and either of these compositions made with cummin above mentioned must be applied; or that composition, which contains of nitre calcined p. i. *. pine resin, cummin, each p. ii. *. stavesacre without the seeds p. iv. *. honey, a sufficient quantity to bring them to a consistence. But if from the blow the testicle ceases to receive nourishment, there is

generally a collection of pus at the same time, and there is no other remedy for it, than by making an incision in the scrotum, to discharge the pus, and extirpate the testicle itself.

Diseases of the anus.
Rhagadia.

The anus too is liable to many and very tedious disorders; and these are cured by methods not very different from one another. In the first place it is a common ailment here, that the skin is chopped, and that in several places: the Greeks call it rhagadia[GM]. When this is recent, the patient ought to rest, and sit down in hot water. Pigeons eggs are also to be boiled, and when they are hard, the shells taken off, after that one of them ought to lie in water well heated, while the part is fomented with the other warm; and thus each of them must be used alternately for some time. Then the tetrapharmacum or the rhypodes must be softened with rose oil; or recent œsypum mixed with liquid cerate made of rose oil; or to the same liquid cerate must be added washed lead; or myrrh to turpentine resin; or old oil to litharge: and the part anointed with any of these. If the part affected be external, and not concealed within, a piece of lint dipped in the same medicine ought to be applied to it, and whatever is laid first on, must be covered with cerate. In this case neither acrid food, nor austere, nor binding must be used; nothing even dried is good, unless the quantity be very small. Liquid, mild, fat and glutinous food is better. There is no reason to refrain from the use of mild wine.

*Of condyl-
omata.*

A condyloma is a tubercle, which commonly proceeds from some inflammation. When it appears, the directions must be observed, which were just now given, with regard to rest, meat, and drink. It is proper to foment this tubercle with eggs, as in the other case. But the patient should first sit down in a decoction of repellent vervains in water; then it is fit to apply lentils with a small proportion of honey, mellilot boiled with wine, and bramble leaves bruised with cerate made of rose oil; and with the same cerate either a quince bruised, or the inner part of pomegranate bark boiled in wine; and chalcitis burnt, and powdered, then mixed with œsypum and rose oil; and some of that composition, which contains of frankincense p. i. *. scissile alum p. ii. *. ceruss p. iii. *. litharge p. v. *. to these, while they are powdered, is instilled alternately oil of roses and wine. The bandage for that part is a square piece of linen or woollen cloth, which at two of its corners has two loops, and at the other as many fillets; and when it is put under the patient, the loops being turned toward the belly, the two fillets from behind are put through them, and when drawn tight, the right one must be extended to the left, and that on the left to the right, and lastly both being brought round are tied in a knot over the belly. But if the condyloma be inveterate, and is grown hard, and does not give way to these methods, it may be cauterized by a medicine, which consists of the following ingredients; of verdigrease p. ii. *. myrrh p. iv. *. gum p. viii. *. frankincense p. xii. *. antimony,

poppy tears, acacia, each p. xvi. *. with which medicine some chuse to renew those ulcers of which I was lately treating. If this has no effect upon the condyloma, even stronger caustics may be used. When the tumour is consumed, we must change to the mild applications.

Of the hemorrhoids.

The third disease of the anus is when the orifices of the *hemorrhoidal* veins grow turgid, and shoot out something like small heads, which often discharge blood; the Greeks call them the hæmorrhoides[GN]. And this frequently happens to women in the mouth of the womb. And it is not safe to stop it in some people, who are not weakened by the discharge of blood: for this serves for a drain, and is not a disease. And therefore some that have been cured, as the blood had no exit, have been seized with sudden and very dangerous distempers, from the matter settling upon the præcordia and bowels. But a man that feels bad effects from this discharge, ought to sit down in a decoction of vervains; and to apply principally pomegranate bark powdered, with dry rose leaves; and some of those things, which stop blood. An inflammation sometimes comes on, especially when hard excrements hurt the part. Then the patient must sit down in pure water, and foment the part with eggs, and apply the yolks with rose leaves beat up with passum; and if the disorder be within, this must be put to it with the finger; if without, it must be applied spread upon a cloth. Those medicines too, which are calculated for recent fissures, are suitable

here. And the same diet must be used in this, as in the former cases. If these methods give but little relief, it is usual by the application of caustic medicines to consume these small heads. But if they be inveterate, by the direction of Dionysius, sandarach is to be sprinkled upon them; after that the following composition must be applied: of copper scales, orpiment, each p. v. *. stone lime p. viii. *. the next day, they must be punctured with a needle. By cauterizing these small heads a cicatrix is formed(19), which prevents the effusion of blood. But whenever this is stopped, to avoid any dangerous consequence from the suppression, the matter must be dissipated by much exercise; and besides both men, and such women, whose menstrual discharge is stopped, ought sometimes to be bled in the arm.

Of a prolapsus of the anus or womb.

But if the anus itself, or the mouth of the womb fall down (for that sometimes happens) it ought to be considered whether the part, which is protruded, be clean, or covered with a mucous humour. If it be clean, the patient ought to sit down in salt water, or a decoction of vervains or of pomegranate bark in water: but if moist, it must be washed with a rough wine, and rubbed with burnt lees of wine. When it has been treated in either way, it must be replaced; and an application made of bruised plantain, or willow leaves boiled in vinegar; over that, linen and wool: these must be tied on, and the legs bound close together.

Of a fungous ulcer.

There sometimes appears an ulcer in the same part resembling a mushroom. This, if it be the winter-time, must be fomented with water just warm; if any other season, with cold; afterwards it must be sprinkled on copper scales, and over that cerate applied made of myrtle oil, with the addition of a little scales, soot, and lime. If it is not removed in this method, it must be consumed either by stronger medicines(20) or the actual cautery.

CHAP. XIX.

OF ULCERS IN THE FINGERS.

The best cure for ulcers of long standing in the fingers is either lycium or lees of oil boiled; to either of which wine is added. A caruncle here also sometimes recedes from the nails with great pain; the Greeks call it pterygion[GO]. It is proper to dissolve as much round Melian alum in water, as to make it of the consistence of honey; then to pour into it the same quantity of honey as there was of alum, and to stir it with a spatula, till it becomes of a saffron colour, and rub that over it; some people for the same purpose chuse to mix equal quantities of dry alum and honey, and boil them together to the due consistence. If they are not extirpated by this method, they must be cut off; then the fingers must be fomented with a decoction of vervains, and a medicine applied over them compounded thus; chalcitis, pomegranate bark, and copper scales are incorporated with a mellow fig gently boiled, and honey; or equal quantities of burnt paper, orpiment, and crude sulphur are mixed with cerate made of myrtle oil; or of rasile verdigrease p. i. *. copper scales p. ii. *. are brought to a consistence with a cyathus of honey; or equal parts of stone lime, chalcitis, and orpiment are mixed together. Which ever of these is applied, it must be covered with a linen cloth dipped in water. On the third day, the finger must be opened, and what is dry, must be cut away as before, and the like dressing applied. If it

does not yield to this method, it must be cleansed with a knife, and burnt with small irons, and cured like other burns.

But where the nails are scabrous, they ought to be opened round, where they are joined to the flesh; then some of the following composition must be applied over them; of sandarach, sulphur, each p. ii. *. nitre, orpiment, each p. iv. *. liquid resin p. viii. *. And this is to be taken off on the third day. This medicine causes the spoiled nails to fall off and better to grow in their place.

A. CORNELIUS CELSUS

OF

MEDICINE.

BOOK VII.

PREFACE.

That surgery makes the third part of medicine, is both universally known, and has been already observed. This does not indeed discard medicines, and a proper regimen; but yet the principal part is accomplished by the hand. And the effect of this is the most evident of all the parts of medicine. For as fortune contributes a good deal to the cure of distempers, and the same things are often salutary, often fruitless; it may be doubted, whether the recovery be owing to physic, or the constitution. In those diseases also, in which we chiefly make use of medicines, although their success be pretty evident, nevertheless it is plain, that health is both sought for

by their means in vain, and often restored without them. As may be observed with regard to the eyes, which after having long suffered from the applications of physicians, sometimes recover of themselves. But in surgery it is manifest that the success, though it may be somewhat promoted by other means, is chiefly to be ascribed to this. Now this branch, though it be the most ancient, yet has been more cultivated by Hippocrates the father of all medicine, than by his predecessors. Afterwards being separated from the other parts, it began to have its peculiar professors, and received considerable improvements in Egypt, as well as elsewhere, principally from Philoxenus, who has treated of this part fully, and with great accuracy, in several volumes. Gorgias also, and Sostratus, the two Herons, and the two Apollonii, and Ammonius Alexandrinus, and many other celebrated men, have each of them made some discoveries. And at Rome too professors of no small note, and particularly of late Tryphon the father, and Euelpistus the son of Phleges, and Meges the most learned of them all, as appears from his writings, by altering some things for the better have made considerable additions to this art.

A surgeon ought to be young, or at most but middle aged, to have a strong and steady hand, never subject to tremble, and be no less dexterous with his left than his right hand; to have a quick and clear sight; to be bold, and so far void of pity, that he may have only in view the cure of him, whom he has taken in hand, and not in compassion to cries either make more haste than the case requires, or his cut

less than is necessary; but to do all, as if he was not moved by the shrieks of his patient.

Now it may be asked what peculiarly belongs to this branch: because surgeons assume to themselves the curing of many wounds and ulcers, which I have treated of elsewhere. I can very well suppose the same person capable of performing all these: and since they are divided, I esteem him most, whose skill is most extensive. For my part, I have left to this branch those cases, in which the physician(1) makes wound, where he does not find one; and those wounds and ulcers, in which I believe manual operation to be more useful than medicines; lastly whatever relates to the bones. Which things I shall consider in order, and deferring the bones to another book, I shall in this explain the two former; so treating first of these, which are found indifferently in every part of the body, I shall proceed to those, that fall upon particular parts.

CHAP. I.

OF CONTUSIONS.

Contusions, in whatever part of the body they are, ought as soon as possible to be treated in this manner; the skin of the part, where the pain is, must be cut in several places, and the *grumous* blood issuing from them must be wiped away with the back of the knife. If it is not taken in time, and there is a redness, so much of the skin as is red *must be cut*; if there is a tumour too, wherever that extends, the same remedy is still the best. Then repellents are to be applied over it; and particularly sordid wool squeezed out of vinegar and oil. But if the hurt be more slight, the same applications without an incision may perform the cure. And if nothing else is at hand, ashes, especially of burnt twigs; if they are not to be got, any other ashes mixed up with vinegar, or even with water.

CHAP. II.

OF THE OPERATIONS NECESSARY IN SUPPURATED TUMOURS.

The foregoing case is easily managed. But there is more trouble with those tumours, that come from an internal cause, and tend to suppuration. That all these are kinds of abscesses, I have elsewhere shewn, and treated of the medicines proper for them: it now remains, that I mention the manual operations necessary for their cure. Wherefore it is requisite, before they grow hard, to cut the skin, and apply a cupping vessel to evacuate any bad and corrupted matter which may have been collected there: and this may be repeated a second and third time, till all the symptoms of an inflammation be gone. Nevertheless, it is not right to trust(2) entirely to the cupping vessel.

Sometimes also it happens, though rarely, that a collection of pus is inclosed in a covering of its own: the ancients called this a coat. Meges, because every coat is nervous, affirmed a nerve was not generated in a disorder, which destroyed the flesh, but that the pus being lodged below for a long time, was surrounded with a callosity. This however has not the least relation to the method of cure; because the same course, that ought to be pursued if it be a coat, is also necessary if it be a callosity. And though it should be a callosity, yet as it invelops something, there is no reason against calling it a coat. And then

again, it is not uncommon for this to be found even before the suppuration is formed(3), and therefore what is below it cannot be extracted by a cupping vessel. But this is easily discovered, when the application of that instrument has made no change. Therefore, where-ever that happens, or when there is already a hardness, nothing is to be expected from this remedy: but as I have directed elsewhere, either the afflux of matter to the part must be diverted, or it must be discussed, or brought to a perfect suppuration. If either of the former has taken place, nothing further is necessary. If the pus has been maturated, in the armpits and groin an incision is rarely to be made: likewise where-ever the abscess is but small; also where-ever the malady is in the surface of the skin, or even in the flesh; unless the weakness of the patient obliges us to lose no time. And it is sufficient by cataplasms to assist the pus to make its own way. For the part, that has not been touched by an instrument, is generally free from a scar. If the malady lies deeper, it ought to be considered whether the part be nervous or not. For if it be nervous, it should be opened by the actual cautery; the reason of which is, that a small wound may keep open longer for evacuating the pus, and the cicatrix afterwards may be small. But if there be nerves near it, the actual cautery is improper, lest convulsions follow, which may debilitate(4) the limb; yet the assistance of the knife is necessary. The others may be opened before they be quite mature: but amongst tendons the utmost ripeness is to be waited for, that the skin may be thin, and the pus brought close to it, that it may be the sooner found.

And some again require a wound(5) in a straight direction, as those in the flesh: but others render the skin extremely thin; and in such the whole surface of it above the pus must be cut away. Now in all cases where the knife is used, care must be taken, that the wounds be as small and as few in number as possible: with this caution, however, that we do all the case requires, both with regard to size and number: for larger cavities require broader incisions; sometimes even in two or three different directions. And we must endeavour that the deepest part of the sinus shall have a free discharge, lest any of the humour settle within, which by corroding the contiguous parts yet sound, may make sinuses there. Cases also sometimes occur, in which the skin must be taken off to a more considerable breadth. For when after long distempers, the habit of the whole body has been vitiated, and the sinus is enlarged to a great compass, and the skin is pale; we may take it for granted that it is already mortified, and will be useless: therefore it is more proper to cut it off: and especially if this happen about the larger joints, and the patient has been troubled with a purging while he was confined to his bed, and he gains no flesh by the nourishment he takes. But the excision should be made in the form of a myrtle leaf, that it may heal the more easily. And this rule must constantly be observed, whenever a physician upon any account cuts away the skin. After the pus is discharged, in the armpits and groin there is no need of lint, but a sponge squeezed out of wine must be laid on. In the other parts, if lint is equally needless, a little honey must be infused to cleanse it; then agglutinants are to

be applied: if lint be necessary, over it also in like manner ought to be laid a sponge squeezed out of wine in the same way. When lint is necessary, and when not, has been determined elsewhere. The other directions are to be observed when the suppurated tumour is cut, which I gave for one, that has been broke by medicines.

CHAP. III.

OF THE GOOD OR BAD SYMPTOMS OF SUPPURATIONS.

It is soon known from the nature of the symptoms, how a cure advances, and what event is to be hoped or feared: and these are commonly the same with what have been laid down in wounds. For they are good signs to sleep, to breathe easily, not to be troubled with thirst, not to loathe food, if there has been a slight fever, to be free of it: also that the pus be white, smooth, and not fetid. The bad signs are wakefulness, difficulty in breathing, thirst, loathing of food, a fever, and the pus black, or feculent, and fetid: also a hemorrhage in the process of the cure; or if before the cavity is filled up with flesh, the lips become callous, and the flesh there be dull of sensation, and spongy. But for a person to faint either in the dressing or afterwards, is worst of all. Moreover, if the fever cease suddenly, before the suppuration is begun, or if it continue after the discharge of the pus, these are just grounds for fear. There is room to fear also, if the wound is not sensible of corrosive medicines. But whatever symptoms shall happen to arise, it is the part of a physician to endeavour the recovery of his patient. Therefore, as often as he shall open a wound, he ought to wash it, if it seems necessary to repel the humour, with a mixture of wine and rain water, or with a decoction of lentils in water: if it needs cleansing, with mulse; and to apply the same dressings again. When the humour shall appear to be

stopt, and the ulcer clean, it will be convenient to promote the growth of the flesh, and dress the ulcer with equal parts of wine and honey, and apply a sponge dipt in wine and oil of roses, which things are incarning. A proper regimen however, as I have observed elsewhere, is more effectual for this purpose: that is, when the fever is removed, and the appetite restored, bathing now and then, daily but mild gestation, and such kinds of food and drink as are of the most nourishing nature. All which rules also hold with regard to an abscess, that has been broken by medicines. But because it is hardly possible to cure a large tumour without the knife, the mention of these has been reserved to this place.

CHAP. IV.

OF FISTULAS.

With regard to fistulas, if they penetrate pretty deep, so that a collyrium cannot reach the bottom of them, if they are tortuous, or consist of several sinuses, operations are more useful than medicines; and those, that run in a transverse direction below the skin, give less trouble than such as go directly inward. Therefore, if the fistula be transverse under the skin, a probe ought to be introduced, and an incision made upon that. If it be tortuous, its windings are to be followed by the probe and knife. And the same course must be taken, if several of them appear like rivulets *uniting their streams*. When we have reached to the end of the fistula, all the callosity must be cut out, and fibulae applied to it with medicines to agglutinate. But if it points directly inward, when its direction is found by a probe, that sinus must be cut out: then a fibula put upon the lips of the skin, and agglutinating medicines laid over it; or if the ulcer be very foul (which sometimes happens from a carious bone) when that also is cured, medicines to promote a digestion.

Of fistulas amongst the ribs.

It is common for fistulas to extend beneath the ribs. When this case occurs, the rib in that part must be

cut through on both sides, and taken out, lest any thing corrupt be left within. It is usual for them also, when they have got through the ribs, to penetrate the transverse septum, that divides the intestines from the superior viscera. Which circumstance may be known, both from the situation, and from the violence of the pain, and because sometimes the air comes out with the matter, as it were bubbling, and particularly when the patient keeps in his breath. For this case there is no remedy. In the other kinds about the ribs, which are curable, greasy medicines are hurtful, and *therefore* we should use such as are adapted to wounds: but the best application is dry lint, or if any thing requires to be cleansed, the same dipped in honey.

Of fistulas in the belly.

There is no bone within the skin of the belly; but fistulas in that part are extremely dangerous; insomuch that Sostratus believed them incurable. That they are not always so, experience has shewn. And indeed, which may seem very wonderful, a fistula opposite to the liver and spleen, and stomach, is more safe than one opposite to the intestines: not that the thing is of its own nature more pernicious there, but because it exposes to a danger of another kind. The reason of which fact some authors have but little understood, though their experience convinced them of this difficulty. For the belly itself is often wounded by a weapon, and the intestines, that have fallen out, are replaced, and the wound united by sutures: the manner of doing which I shall

point out presently. Therefore, when a small fistula has even penetrated the abdomen, it may be cut out, and the lips of it joined by a suture. But if the fistula spreads wider within, upon its being cut out, it must necessarily leave a pretty large vacuity, which cannot be sewed up without great violence; especially on the internal side, where there is a kind of membrane, which the Greeks call peritonaeum, that surrounds the abdomen. Therefore, as soon as a person begins to walk or move, the suture breaks, and the intestines are let loose, so that the patient must perish. But the case is not always desperate; and therefore, we must attempt the cure of smaller fistulas there.

Of fistulas in the anus.

Fistulas in the anus require a particular treatment. A probe being put into them, an incision must be made in the skin at its further end: then the probe must be drawn out at the new orifice with a thread following it, which was put through an eye made in the other end for the purpose. There the thread must be taken hold of, and tied to the other end, that it may gently take hold of the skin above the fistula: and the thread should be made of crude lint(6), double or triple, and so twisted as to make one string. In the mean time the patient may go about his business, walk, bathe, and eat, just as if he were in the most perfect health. Only loosing this knot(7) twice a day, the string must be drawn in such a manner, that the part, which was above, may then be within the fistula. And the thread must not be suffered to rot,

but every third day, the knot must be untied, and at its one end must be fixed a fresh ligature, which when the old one is drawn out, must be left in the fistula with a like knot. For thus it gradually cuts the skin that is above the fistula: and, at the same time, the part that has been eat through by the thread, heals; whilst the remainder, which is pinched by the thread, continues to be cut by it. This method of cure is long, but is attended with no pain.

Those, that are for making quick dispatch, ought to tie the skin tight with the string, that it may be the sooner cut; and at night to introduce some small slips of a penecillum, that the skin may be made thin by the same means that it is distended; however this occasions pain. The dispatch, as well as the pain, is increased, if both the string and the penecillum be turned with some one of those medicines, which I mentioned, for consuming a callosity. It may happen, however, that the use of the knife may be necessary, even in this part, if the fistula points inward, or consists of several sinuses. Wherefore in these kinds, the probe must be introduced, and the skin must be cut in two lines, so that betwixt them a very small habenula may be cut out(8), to prevent the lips from uniting presently; and that room may be left for pledgits of lint, as few of which as possible ought to be laid on; and the same course must be pursued as was directed in abscesses. But if, from one orifice, there shall be several sinuses, that sinus, that runs straight, must be opened with a knife, and the others, that branch from it, which will then appear, must be tied with a ligature. If any one penetrate so deeply, that an instrument cannot be safely used, a

collyrium must be put in.

The food, in all these cases, whether the treatment be by an operation, or by medicines, ought to be moist; the quantity of drink pretty liberal, and for a long time water. And when the flesh begins to sprout up, then indeed the bath may be used, but sparingly, and such food as plumps the body.

CHAP. V.

OF EXTRACTING WEAPONS OUT OF THE BODY.

Weapons, that lodge in the body, are very often troublesome to extract. For there are some difficulties, which arise from their different forms; others from the situation of the parts, into which they have penetrated. Now every weapon is extracted, either on that side, where it entered, or on that, to which it points. In the first case it returns by the way itself made: in the other, it receives one from the knife; for the flesh is cut directly upon the point of the weapon. If the weapon does not lie deep, but is in the surface of the flesh, or at least has not past through large veins and nervous parts, the best method is to pull it out by the way it entered. But if the space, through which the weapon must return, be greater than that, which is to be laid open, and it has already past through veins and nerves, it is more expedient to open what remains, and extract it that way; for it is both nearer at hand, and is drawn out with more safety. And in one of the larger limbs, if the point of the weapon has past beyond the middle of it, it will heal the more readily for being open quite through, as the remedies will act at both extremities of the wound. But if the weapon is to be brought back the same way, the wound must be enlarged, that it may move the more easily, and occasion the less inflammation; which will be considerable, if the body be lacerated by the weapon as it returns. And in like manner, if an opening be

made on the opposite part, it ought to be so large, as not to be increased afterwards by the weapon passing through it. In either case, the greatest caution must be used not to cut a tendon, or a large vein, or an artery. When any of these are exposed, it must be laid hold of with a blunt hook, and drawn aside from the knife. When an incision is made large enough, the weapon must be taken out: then also the same method, and the same precaution are to be used, lest any of the abovementioned parts should be injured, which lie under the weapon, that is to be extracted.

Of arrows.

The foregoing directions are general: besides which, there are some particular rules for the several kinds of weapons, which I shall immediately subjoin. Nothing is so easily lodged in the body as an arrow, and it goes to the greatest depth. The reasons are, both that it moves with great force, and because it is small. Therefore, it must be extracted more frequently on the opposite part, than on that by which it entered, and especially because it is generally surrounded with beards, which lacerate more, if they be drawn backward than forward. But an orifice being made on the opposite part, the flesh ought to be opened by an instrument made in the form of the Greek letter ν; and when the point appears, if the shaft adheres to it, it must be pushed forward, till it can be taken hold of at the opposite part, and extracted. If that is already broke off, and only the iron head is within, the point must be taken hold of by the fingers, or a forceps, and thus pulled

out. And there is no other method of extracting it, when it is thought adviseable to pull it out by the orifice it entered at: for after the wound is enlarged, either the shaft, if that be lodged within, must be pulled out; or if that be not there, the iron itself. But if the beards are visible, and they are short and small, they ought to be broke off with a forceps, and the weapon, when freed of them, to be brought out; if they are larger and stronger, they must be covered with writing reeds split, to prevent their lacerating any part, and thus pulled out. This is the method observed in extracting arrows.

Of broad weapons.

But if a person has a broad weapon lodged within his flesh, it is not proper to draw it out at the opposite part, lest we add another great wound to the large one already made. It must therefore be pulled out with a certain kind of iron instrument, which the Greeks call the graphiscus of Diocles[GP], because it was invented by Diocles, whom I have already taken notice of among the ancient and greatest physicians. This is a plate of iron, or sometimes of copper, at the one end, having two claws turned downwards on each side; the other perforated and folded back on each side; bent a little at that extremity, which has the claws; and likewise on the other, which is perforated. This is introduced transversely, hard by the weapon; and then, when it has reached its point, it is turned a little, that it may receive the weapon into the perforation. When the point is in the hole, the operator, clapping two of his fingers to the claws

at the other end, draws out at once his instrument and the weapon.

Of leaden bullets, &c.

A third kind of weapon, which requires sometimes to be pulled out, is a leaden bullet, or a stone, or some such thing, which having broke through the skin, is entirely lodged within. In all these cases, the wound must be enlarged, and what is within must be extracted by a forceps the way it entered.

But there is an additional difficulty attending every wound, where the weapon is either fixed in a bone, or has sunk into an articulation between two bones. If, in a bone, the weapon must be moved to and fro, till the part, which gripes the point, gives way, and then the weapon must be extracted, either with the hand, or a forceps. Which is also the method of extracting the teeth. And it is very rare that the weapon does not follow in this way. But if it still remains, it may be forced out with some kind of instrument. The last resource, when it is not extracted, is to make a perforation near it by a terebra, and from that opening, to cut the bone in the form of the letter v, opposite to the weapon, in such a manner, that the opening of the lines be directed towards the weapon; when this is done, it must necessarily give way, and be easily taken out.

If it has made its way into an articulation between two bones, the two limbs must be bound up with rollers and straps, and by means of these drawn contrary ways, to stretch the tendons: which being extended, will leave a larger space between the

bones, so that the weapon may be extracted without difficulty. Care must be taken, as I observed in other cases, in its extraction, that no nerve, vein, or artery be wounded by the weapon, whilst it is extracting, *which is to be guarded against* by the method mentioned before.

Of poisonous weapons.

But if a person be wounded by a poisoned weapon, all that is above mentioned being, if possible, still more expeditiously executed, he must also be treated in the method prescribed for one that has drunk poison, or been bit by a serpent. The treatment of the wound itself, after the extraction of the weapon, is the same as if nothing had been lodged there; of which I have said enough elsewhere.

CHAP. VI.

OF A GANGLION, MELICERIS, ATHEROMA, STEATOMA, AND OTHER TUBERCLES OF THE HEAD.

These are cases that occur in any part of the body indifferently: the rest have certain seats, which I am going to speak of, beginning with those in the head. In this a great number and variety of tubercles rise, called ganglia[GQ] melicerides[GR], atheromata[GS]; there are some other kinds, to which authors give different names; to which I shall also add steatomata[GT]: which though they often arise in the neck, and in the armpits, and sides, I have not mentioned separately; since all of them differ but little, and neither are threatening, nor require any different treatment from each other. Now all these rise from a very small beginning, and increase gradually for a long time, and are inclosed each in a coat of its own. Some of them are hard, and resist pressure, others are soft and yielding; some of them are bald in a part, others remain covered with hair, and are commonly without pain. What their contents are, though it may be pretty well guessed at, yet cannot be certainly known, till they be taken out. However, generally in these that resist, there are found either some stony substance, or a number of hairs concreted together: but in those that yield, something resembling honey, or thin pulticula, or the scrapings of cartilage, or insensible or bloody flesh; and these are commonly of different colours. And for the most part ganglia are elastic: the atheroma

contains a liquor like thin pulticula: the meliceris a more liquid one, which therefore fluctuates upon being pressed: there is a fat substance in the steatoma, and that generally has the largest circumference, and so relaxes the whole surface of the skin above it, as to make it slide backward and forward; whereas, in the rest, it is more bound. It is proper first to shave them all if they be covered with hair, and then to cut them through the middle, that whatever was collected within may be evacuated. But the coat of the steatoma must also be cut; because it is not easily separated from the skin and subjacent flesh. In the others the coat is to be preserved entire: and immediately, when it appears white and tense, it must be separated by the handle of the knife from the skin and flesh, and taken out together with its contents. If, however, it should happen, that the lower side of the coat adheres to a muscle, lest that be wounded, the upper side must be taken away, and the lower left in its place. When the whole is extracted, the lips must be brought together, and a fibula put upon them, and over that an agglutinating medicine. When either the whole coat, or any part of it is left behind, medicines to promote a digestion must be applied.

CHAP. VII.

OF THE DISEASES OF THE EYES, WHICH ARE CURED BY MANUAL OPERATIONS.

But as the foregoing disorders do not differ much either in their nature, or method of cure, so these in the eyes, which require manual operations, are both different in their kinds, and require different methods of cure.

Of vesicles in the upper eye-lids.

In the upper eye-lids then it is common for fat and heavy vesicles to rise, which scarcely allow the eye to be raised, and occasion gentle, but constant fluxes of gum in the eyes. And they commonly happen to children. *In this case*, it is necessary to compress the eye with two fingers, and thus stretching the skin, to cut with the knife in a transverse line, with a very light hand, in such a manner as not to wound the vesicle, and so that it may pass out when a way is made for it; then to catch hold of it with the fingers, and pull it out: for it easily separates. After this the part ought to be anointed over with any of these collyriums, that are used in lippitudes; by which means it is covered with a cicatrix in a very few days. It is more troublesome, when the vesicle is cut: for it discharges its humour, and cannot be laid hold of after, because of its smallness. If that accident should happen, one of the medicines that promotes a

digestion, may be laid on.

Of a crithe.

In the eye-lid, likewise, above the lashes, there grows a small tubercle, which from its resemblance to a barley-corn, is, by the Greeks, called crithe[GU]. It is contained in a coat, and seldom maturates. Upon this should be applied hot bread, or wax heated now and then, provided the degree of heat be no more, than the part can easily bear: for by this method it is often discussed, sometimes maturated. If pus appear, it ought to be divided by a knife, and the contained humour squeezed out: and to be afterwards treated with the same warmth, and anointed, till it recover a sound state.

Of chalazia.

Other tubercles not unlike this, grow in the eye-lids; but however not of the same form, and also moveable, when they are impelled this way or that by the finger: which because of their resemblance to hail-stones, the Greeks call chalazia[GV]. These ought to be cut on the external side, if they be immediately under the skin; on the internal, if they lie below the cartilage; after that, they must be separated by the handle of the knife from the sound parts. And if the wound be on the internal side, it must be anointed at first with mild, and afterwards more acrid medicines; if, on the external, an agglutinating plaister must be applied over it.

Of the unguis.

The unguis, called by the Greeks, pterygium[GW], is a

small nervous membrane, which arising from the angle of the eye, sometimes reaches to the pupil, and obstructs the sight. It oftener begins from the angle, near the nose, sometimes too from that towards the temples. It is no difficult matter to discuss this, when recent, by the medicines, which lessen cicatrices in the eyes. If it be of long standing, and has acquired some thickness, it ought to be cut out. After an abstinence of one day, the patient must be placed in a seat, either with his face opposite to the physician, or with his back to him, in such a manner, that he may recline his head upon his breast. Some, if the disease be in the left eye, chuse to have him set with his face to the physician; if in the right, in the reclined posture. One eye-lid ought to be opened by an assistant, and the other by the physician. If the physician face him, he must take hold of the lower one; if he be reclined, the upper one. Then the physician is to fix under the extremity of the unguis, a small sharp hook, with its point turned a little inward; and to let go the eye-lid, which is then to be held by an assistant, and taking hold of the hook, he is to lift up the unguis, and pass a needle through, drawing a thread after it; then to lay aside the needle, and take hold of the ends of the thread, and by them raising up the unguis, if it adheres any where to the eye, to separate it by the handle of the knife, till he come to the angle; then alternately sometimes to slacken, sometimes to draw it, that so both its origin and the extremity of the angle may be found. For there is a double danger attends it; either lest some part of the unguis be left, which being ulcerated is hardly ever cured, or lest the caruncle be

cut away from the angle; for if the unguis be drawn away with too much force, that also follows, and comes away. If it is torn off, an orifice is opened, through which afterwards a humour always descends, which the Greeks call rhyas[GX]. The true termination then of the angle must be found out. When that plainly appears, the knife is to be used, the unguis not being too straight drawn; and then this small membrane is to be cut out in such a manner, that no part of the angle be wounded. Afterwards lint covered with honey must be laid on, and over that a linen cloth, and either spunge, or sordid wool. The following days the eye must be opened daily, lest the eye-lids be agglutinated together by a cicatrix (for that is also a third danger) and lint be put on in the same way: lastly, it must be anointed with a collyrium, that cicatrizes ulcers.

But this operation should be performed in the spring, or at least before winter. Which circumstance, though it belongs to several places, it will be sufficient to mention once for all. For there are two kinds of cures; one, in which we are not at liberty to chuse a time, but that must be laid hold of, that offers, as in wounds and fistulas; another, in which we are not pressed for time; but it is quite safe and easy to wait the most convenient season; as is the case in these disorders, which both increase slowly, and are not extremely painful. In such, we must defer it till spring; or if there is any urgent circumstance, the autumn however, is better than the winter or summer; and of that the middle, when the excessive heats are gone, and the colds not yet set in. Now the more necessary the part is, whose cure shall

be undertaken, the greater will the danger be it is exposed to. And often by how much larger the wound is to be made, so much the more must the season of the year be regarded.

Of an encanthis.

From the operation for the unguis, as I observed, disorders arise, which may also sometimes proceed from other causes. For sometimes after the imperfect excision of an unguis, or upon some other occasion, a tubercle grows in the angle, which hinders the entire opening of the eye-lids; the Greek name for it is encanthis[GY]. It ought to be laid hold of with a hook, and cut round; and here also the operator must be cautious not to cut away any thing from the angle itself. Then a small piece of lint must be sprinkled either with cadmia, or copperas; and the eye-lids being opened it must be introduced into that angle, and bound over in the same manner as the former; and for some following days must be dressed in like manner, first bathing it with water, just warm, or even cold water.

Of the ancyloblepharon.

Sometimes the eye-lids grow together, and the eye cannot be opened. Which is often attended with this disorder besides, that the eye-lids adhere to the white of the eye; that is when an ulcer in either of them has been negligently cured. For as it heals, what might, and ought to have been separated, will be agglutinated; both species of the distemper is

called by the Greeks ancyloblepharon[GZ]. When the eye-lids only cohere, they are separated without difficulty; but sometimes to no purpose: for they are agglutinated again. However trial ought to be made; because the case often turns out well. Therefore the broad end of the probe must be introduced betwixt them, and the eye-lids separated by that; then small penecilla are to be put between them, till the ulceration of the part be cured. But when the eye-lid adheres to the white of the eye itself, Heraclides the Tarentine advises to cut under it gently with a knife with great caution, lest any thing be cut away either from the eye, or the eye-lid; and if that cannot be entirely avoided, rather to take something from the eye-lid. After these let the eye be anointed with such medicines as cure an asperity; and the eye-lid be inverted every day, not only that the medicine may be applied to the ulcer, but also to prevent its adhesion: the patient himself must also be charged to raise it often with two fingers. I do not remember an instance of one person cured by this method. Meges too tells us he tried many ways, and never was successful; for the eye-lid always adhered again to the eye.

Of the aegilops.

Again in that angle, that is next the nose, from some disorder, a kind of small fistula is opened, through which gum(9) perpetually distils; the Greeks call it ægilops[HA]. And this gives constant uneasiness to the eye; sometimes also eating through the bone, it penetrates to the nostrils. This sometimes is of a

cancerous nature; when the veins are tense and crooked, the colour of it is pale, the skin hard, and irritated by a slight touch, and it raises an inflammation in the contiguous parts. It is dangerous to attempt the cure of those, that are cancerous: for it even hastens death. And it is needless to meddle with such as reach to the nostrils: for neither do they heal. But the cure of these in the angle may be attempted; though it should be known however that it is difficult; and the nearer to the angle the opening is, so much the more difficult, because there is a very little room for the management of the hand; yet it is easier to cure the disorder when recent. The top of the opening must be taken hold of with a small hook; and then all the cavity as I directed in fistulas, must be cut out to the bone; and the eye and other contiguous parts being well covered, the bone must be strongly cauterized with a hot iron. But if it be already affected with a caries, that a thicker scale may cast off, some apply caustic medicines; as copperas, or chalcitis, or rasile verdigrease: which method is both slower, and not so effectual. When the bone is cauterized, the remaining part of the cure is the same as in other burns.

Of hairs in the eye lashes irritating the eye.

The hairs of the eye-lids sometimes irritate the eye; and that from two causes. For sometimes the skin of the eye-lid is relaxed, and falls down; whence it happens, that the lashes are turned in upon the eye itself, because the cartilage is not also relaxed; at

other times, beside the natural row of hairs, another grows under it, which point directly inward upon the eye. The methods of cure are these. If preternatural hairs have grown, an iron needle thin and broad, like a spatha(10), must be put into the fire, and when it is red-hot, the eye-lid being lift up in such a manner, that the offending lashes are in the view of the operator, it must be passed from the angle close to the roots of the hair, till it move over the third part of the eye-lid; then it must be applied a second and third time, as far as the other angle. The consequence of which is, that all the roots of the hairs being burnt, die away. Then a medicine to prevent an inflammation must be applied: and when the eschars have cast off, it must be brought to cicatrize. This kind heals very easily. Some alledge that it is proper to pierce the external part of the eye-lid near the eye-lashes with a needle, which must be passed through with a woman's hair doubled for a thread; and when the needle has gone through, that the offending hair must be taken up into the loop of the woman's hair, and by that drawn upward to the superior part of the eye-lid, and there to be glued down to the flesh, and a medicine applied to close up the orifice thus made: for that this will cause the eye-lash to point afterwards externally. This in the first place cannot be practised, but upon a pretty long hair; whereas they generally grow short there. And then if there be several hairs, the patient must suffer a long torture, and the needle passing so often through will raise a great inflammation. Lastly, when any humour is settled there, the eye being irritated both before by the hairs, and afterwards by the

perforations of the eye-lids, it is hardly possible to prevent the glutinous matter, which fastens the hair, from being dissolved: and thus of course the hair returns to the place, from whence it was drawn away.

The method of cure for a relaxed eye-lid, which is universally practised, never fails of success. For the eye being closed, one must take hold of the middle part of the skin of the eye-lid, whether it be the upper or the lower, with his fingers, and raise it; then consider how much must be taken away, to reduce it to its natural condition. For there are two dangers attending this case; lest if too much be cut off, the eye cannot be covered; if too little, the end be not obtained, and the patient have suffered to no purpose. The part, which it shall be thought needful to cut, must be marked by two lines with ink in such a manner, that betwixt the range of hairs and the line nearest to it, some space may be left for the needle to lay hold of. These things being determined, the knife is to be used: and if it be the upper eye-lid, the incision next the eye-lashes must be made first; if the inferior one, last: and it must begin in the left eye, at the angle next the temple; in the right, at the angle next the nose; and what lies between the two lines must be cut out. Then the lips of the wound are to be joined together by a single stitch, and the eye must be covered; and if the eye-lid does not descend far enough, it must be relaxed; if too much, it must be either straiter drawn, or a small habenula again cut off from that lip of the wound, which is farthest from the eye-lashes. When it is cut off, other stitches must be added, not above three. Moreover a

scarification must be made in the upper eye-lid, under the roots of the eye-lashes, that being raised from the inferior part they may point upwards: and this alone will be sufficient for the cure, if they are but little turned in. The lower eyelid does not need this process. When these are done, a spunge squeezed out of cold water must be bound on: the day following an agglutinating plaister should be applied. On the fourth, the stitches must be taken away, and the wound anointed with a collyrium, to prevent an inflammation.

Of the lagophthalmus.

Sometimes from this operation, when too much of the skin is cut away, it happens, that the eye cannot be covered. And this sometimes proceeds from another cause. The Greeks call the disorder lagophthalmos[HB]. When too much of the eye-lid is wanting, there is no remedy for it; if but a small part, it may be cured. An arched incision must be made in the skin a little below the eye-brow, with its horns pointing downward. The wound ought to go as deep as the cartilage, but without injuring it: for if that be cut, the eye-lid falls down, and cannot afterwards be raised. Let the skin then be only divided, so as to allow it to descend a little in the lower part of the eye; which will be the consequence of the wound's gaping above. Let lint be put into it to prevent the union of the divided skin, and to generate a little flesh in the middle: and when this has filled up the part, the eye is afterwards properly covered *by the eye-lid.*

Of an ectropium.

As it is a disorder of the upper eye-lid not to descend far enough to cover the eye, so there is a disease of the lower, in which it is not raised high enough, but hangs down, and cannot be brought close to the other. And this also sometimes proceeds from a similar fault in the cure, sometimes even from old age. The Greeks call it ectropium[HC]. If it happens from a faulty cure, the treatment is the same as in the foregoing case: only the horns of the wound are turned towards the cheeks, and not to the eye. If it proceed from old age, the whole of it must be cauterized externally with a thin plate of iron; then anointed with honey; and from the fourth day fomented with hot water, and anointed with medicines to bring on a cicatrix.

Of the staphyloma.

These then are the general disorders, that commonly occur in the parts about the eye, the angles, and eye-lids. In the eye itself the external coat is sometimes raised, either from the rupture or relaxation of some of the internal membranes; and it resembles a raisin stone in its form, whence the Greeks call it a staphyloma[HD]. There are two methods of cure for it. One is to pass through the middle, at the root of it, a needle with a double thread; then to tie tight the ends of one of the threads above, and of the other below; which by cutting it gradually may bring it off. The other is, to cut out from its surface about the bigness of a lentil; then to rub in spodium or cadmia.

When either of these is done, the white of an egg must be spread upon wool and applied; and afterwards the eye must be fomented with the steam of hot water, and anointed with mild medicines.

Of clavi.

Callous tubercles in the white of the eye are called clavi; which name is given them from their figure. The best method is to pierce them at their very roots with a needle; and below that to cut them off, and then to anoint with mild medicines.

Description of the eye.

I have already elsewhere mentioned a cataract, because when recent, it is often removed by medicines. But when it is of long standing, it requires a manual operation, and one, which may be reckoned amongst the nicest. Before I treat of this, I shall give a short account of the nature of the eye; the knowledge of which, as it is of importance in several other parts, so it is peculiarly necessary here. The eye then has two external coats; the exterior of which by the Greeks is called ceratoides[HE]; and this, where it is white, is pretty thick, but before the pupil is thinner. The interior coat is joined to this, in the middle where the pupil is, and is concave, with a small aperture; round the pupil it is thin, but at a distance from it, something thicker; and by the Greeks is called chorioides[HF]. As these two coats surround the internal part of the eye, they again join behind it, and becoming finer, and uniting together, pass through the opening, which is between the

bones, to the membrane of the brain, and are fixed to it. Under these, in the part where the pupil is, there is a void space; then again below, is an exceeding fine coat, which Herophilus called arachnoides[HG], the middle part of which subsides, and in that cavity is contained somewhat, which from its resemblance to glass the Greeks call hyaloides[HH]. This is neither liquid, nor dry; but seems to be a concreted humour; from the colour of which, that of the pupil is either black, or grey, though the external coat be white. This is inclosed by a small membrane, which proceeds from the internal part of the eye. Under these is a drop of humour resembling the white of an egg, from which proceeds the faculty of vision. By the Greeks it is called chrystalloides.

Of a cataract.

Now a humour concretes under the twoὑαλοειδὴς. coats, where I mentioned the void space to be, either from a disease, or a blow; and being gradually indurated, it obstructs the interior faculty *of vision*. There are several species of this malady, some of which are curable, and others not. For if the cataract be small, immoveable, of the colour of sea-water, or burnished iron, and leaves some sense of light on its sides, there remains hope. If it is large, if the black part of the eye, losing its natural appearance, is changed into some other, if the cataract be of the colour of wax(11), or gold; if it slides and moves to and fro, it is scarcely ever cured. And for the most part, the more severe the disease, or the greater the pains of the head, or the more violent the blow has been, which gave rise to it, so much the worse it is.

Neither is old age a proper time of life for a cure; which without an additional disease causes a dimness of sight: nor even childhood; but the middle age betwixt these. Neither is a very small eye, nor one, that is hollow, fit for this operation. And there is also a certain maturity of the cataract itself: wherefore we must wait till it seems to be no longer fluid, but to have concreted with a certain degree of hardness.

Before the operation, the patient must use a spare diet, drink water for three days, the day immediately preceding take nothing at all. After this preparation he must be set in a light place, in a seat facing the light, and the physician must sit opposite to the patient on a seat a little higher; an assistant behind taking hold of the patient's head, and keeping it immoveable; for the sight may be lost for ever by a slight motion. Moreover the eye itself, that is to be cured, must be rendered more fixed by laying wool upon the other, and tying it on. The operation must be performed on the left eye by the right hand, and on the right by the left hand. Then the needle sharp pointed(12), but by no means too slender, is to be applied, and must be thrust in, but in a straight direction, through the two coats, in the middle part betwixt the black of the eye and the external angle opposite to the middle of the cataract, care being taken to wound no vein. And it must not be introduced with timidity(13) neither, because it comes into a void space. A person of very moderate skill cannot but know when it arrives there; for there is no resistance to the needle: when we reach it, the needle must be turned upon the cataract, and gently

moved up and down there, and by degrees work the cataract downward below the pupil; when it has past the pupil, it must be prest down with a considerable force, that it may settle in the inferior part. If it remain there, the operation is compleated. If it rises again, it must be more cut with the same needle, and divided into several pieces; which when separate, are both more easily lodged, and give less obstruction. After this the needle must be brought out in a straight direction, and the white of an egg spread upon wool must be applied, and over that something to prevent an inflammation, and then *the eye* be bound up.

Afterwards there is a necessity for rest, abstinence, mild unctuous medicines, and food (which it is soon enough to give on the day following) at first liquid, that the jaws may not be too much employed, then when the inflammation is gone, such as was directed in wounds. To which we must add this rule, that the patient's drink be water for a pretty long time.

Of a flux of gum.

I have already treated of a flux of thin gum, which infests the eyes, so far as the cure depends upon medicines. I now come to these cases, that require manual operation. Now we observe that some people's eyes never grow dry, but are always moistened with a thin humour; which circumstance occasions a constant asperity, and from slight causes excites inflammations, and lippitudes, and in fine renders a person uneasy all his life. And this disorder in some no remedy can relieve; in others it is

curable. Which difference ought first of all to be known, that we may relieve the one, and not meddle with the other.

And in the first place, it is in vain to attempt the operation in those, who have this disorder from their infancy, because it will certainly continue to their dying day. Secondly, it is needless, where the discharge is not great, but acrid; because they are not assisted by a manual operation, but are brought to a sound state by medicines, and a proper diet for generating a thicker phlegm. Broad heads also are hardly susceptible of the remedy. Then it makes a difference whether the gum be discharged by the veins, that lye between the skull and the skin, or by those between the membrane of the brain and the skull: for the former moisten the eyes by the temples; the others by the way of those membranes, that go from the eyes to the brain. Now a remedy may be applied to those veins, that discharge above the bone, but not to those below the bone(14). Neither can relief be given, where the discharge comes from both places; because when one part is relieved, nevertheless the other remains disordered.

The source of the disorder is discovered by this method. After shaving the head, such medicines, as stop the gum in a lippitude, ought to be laid on from the eye-brows as far as the top of the head: if the eyes begin to be dry, it appears that they are moistened by those veins, which are under the skin: if the moisture is not diminished, it is manifest it descends from below the bone: if a humour still flows(15), but in less quantity, the disorder is from both. In most patients however the complaint is

found to be derived from the superior veins; and therefore the greater number may be relieved. And this is very well known, not only in Greece, but amongst other nations too: so that no part of medicine has been more clearly explained in any country.

Some *practitioners* in Greece cut the skin of the head in nine lines; two straight ones in the occiput, one transverse above these; then two above the ears, one also transverse betwixt them; and lastly three straight ones between the top of the head and the forehead. Others drew these incisions in a straight direction from the top of the head to the temples; and discovering from the motion of the jaws the origins of the muscles, made gentle incisions in the skin above these, and separating their lips by means of blunt hooks, they inserted lint in such a manner, as to prevent the edges of the skin from uniting, and to cause flesh to sprout up in the middle, which might bind those veins, from whence the humour passes to the eyes. Others again have drawn a line with ink from the middle of one ear to the middle of the other, and another line from the nose to the crown of the head; and where these lines met, made an incision with a knife; and after the effusion of blood, cauterized the bone in that part. And notwithstanding this, they also applied the actual cautery to the rising veins both in the temples, and betwixt the forehead and crown of the head.

It is a common method of cure to cauterize the veins in the temples, which indeed are generally turgid in this kind of disorder; but that they may be more inflated and show themselves better, the neck must

first be tied pretty strait. And the veins must be cauterized with small and blunt irons; till the flux of gum upon the eyes stop: for that is a sign the passages are blocked up, by which the humour was conveyed.

However it is a more effectual method, when the veins are small and lie deep, and therefore cannot be separated(16), to make a ligature about the neck in the same manner, and the patient keeping in his breath, that the veins may rise the more, to mark with ink these in the temples, and between the crown of the head and the forehead; then loosing the neck, to cut the veins, where these marks are, and discharge blood; when a sufficient quantity has flowed, to cauterize them with small irons: in the temples indeed with caution; lest the muscles lying below, which secure the jaws, be hurt; but betwixt the forehead and the crown so strongly, that a scale may cast off from the bone.

But the method of the Africans is still more efficacious, who cauterize the crown of the head to the bone, so as to make it cast off a scale. But nothing is better than what is done in Gallia Comata, where they separate the veins in the temples, and the upper part of the head. The manner of treating cauterized parts I have already explained. At present I shall add this one direction; that when veins are cauterized, we should not endeavour to hasten the separation of the eschars, nor the filling up of the ulcers; lest either an hemorrhage ensue, or the pus be quickly suppressed; since it is fit these parts be dried by the latter, and it is not proper they should be exhausted by the former. If however an hemorrhage

should at any time happen, medicines for stopping blood must be rubbed in, but not such as will prove caustic. Now the method of separating veins, and what is to be done, when they are separated, I shall explain, when I come to the varices of the legs.

CHAP. VIII.

OF THE OPERATIONS REQUISITE IN THE EARS.

But as the eyes require many operations, so in the ears there are very few disorders, which come under this branch of medicine. However it sometimes happens, either immediately from the birth, or some time after, when there has been an ulceration, and the ear has been filled by a cicatrix, that there is no opening in it, and there it is deprived of the faculty of hearing. When this happens, trial must be made with a probe whether it be filled up to any depth, or be only agglutinated in the surface. For if it be deep, it does not yield to the pressure; if superficial, it presently receives the probe. The first ought not to be touched, lest a convulsion follow without any hopes of success, and from that there may be a danger of death; the other is easily cured. For where the foramen ought to be, either some caustic medicine must be applied, or it must be opened by the actual cautery, or even cut with a knife. And when that is opened, and the ulcer is clean, a quill must be introduced there, armed with a cicatrizing medicine; and round something must be applied, to promote the healing of the skin about the quill; the effect of which is, that after it is removed, the patient has the faculty of hearing.

But where the ears have been bored and give offence, it is sufficient to pass a hot needle through the cavity very quick, that its lips may be slightly ulcerated; or even to ulcerate it with a caustic

medicine; then afterwards to apply something to deterge it; next somewhat to fill up the part, and bring on a cicatrix. But if this opening be large, as it generally is in those who have worn heavy ear-rings, it is proper to cut through what remains,(17) to its extremity; then above that to scarify the edges *of the foramen* with a knife, and afterwards to stitch them, and apply an agglutinating medicine. The third case consists in giving a supply to any part, that is deficient; which as it may also be done in the lips and nose, and the method is the same, it will be best to treat of it once for all.

CHAP. IX.

THE OPERATION NECESSARY IN A WANT OF SUBSTANCE IN THE EARS, LIPS, AND NOSE.

Defects in these three parts, if they be small(18), may be cured: if considerable, they either do not admit of a cure, or by the cure itself are so deformed, that they were less offensive before. And in the ear indeed, and the nose, deformity is the only thing to be feared: but in the lips, if they are too much contracted, there is also a disadvantage in respect of their use; because the food is taken, and the speech is articulated with more difficulty. For flesh is not generated there; but is brought from the adjacent part. Which though in a slight mutilation it may both cause no defect, and escape observation, in a great one cannot. Now an old person is not a proper subject for this operation, nor one in a bad habit of body, nor one in whom ulcers heal with difficulty; because there is no part, where a gangrene more quickly seizes, or is harder to remove.

The method of cure is this; to reduce that, which is mutilated, into a square; from its interior angles to cut in transverse lines, so as to divide the part, that lies within these lines, from that beyond them; then to draw together the parts we have thus opened: if they do not fully meet, then beyond the lines we made before, to cut in two places in a lunated form, with the horns turned towards the wound, so as only to separate the surface of the skin: for by this means what we draw together will be more at liberty to

follow; which is not to be forced by violence, but gently drawn, so as it may easily follow, and when let go, not recede far.

Sometimes however, the skin not being altogether brought from one side, renders the part, which it has left, deformed(19). In such a place an incision must be made only on one side, and the other kept untouched. Therefore we must not attempt to draw any thing either from the lower part of the ears, or the middle of the nose, or the lower parts of the nostrils, or from the angles of the lips. We may draw on both sides, where there is any defect in the upper parts of the ear, or the lower parts or the middle of the nostrils, or the middle of the lips: which however are sometimes mutilated in two places; but the method of cure is the same. If a cartilage projects in the part where the incision is made, it must be cut off; for it neither unites again, nor is safely pierced by the needle. Neither must much of it be cut away, lest between the two extremities of the skin freed from it on both sides, there should be a collection of pus. Then the lips of the wound being brought into contact, must be stitched together, the skin being taken up on both sides; and where the lines above mentioned are, there also the suture must be used. In dry parts, as the nostrils, the application of litharge does very well. Into the interior and lunated incisions lint must be put; that granulations of flesh may fill up the wound. And that the part thus sewed must be attended to with the greatest care, may appear from what I said before of a gangrene. Therefore every third day, it must be fomented with the steam of hot water, and the same medicine applied again, which

commonly on the seventh day unites it. Then the stitches ought to be taken out, and the ulcer healed up.

CHAP. X.

OF THE EXTIRPATION OF A POLYPUS IN THE NOSE.

I have elsewhere said that the knife is the principal cure for a polypus growing in the nostrils. Wherefore it is necessary to separate this from the bone with a sharp iron instrument made in the form of a spatha: care being taken not to hurt the cartilage below, which is difficult to cure. When it is cut off, it must be extracted with an iron hook. Then a piece of lint twisted, or some part of a penecillum must be sprinkled with a styptick medicine, and the nostrils be gently filled with it. The blood being stopped, the ulcer must be deterged with lint. When it is clean, a quill armed with a cicatrizing medicine must be introduced within, in the same manner as was directed in the ear, till it be entirely sound.

CHAP. XI.

OF THE CHIRURGICAL CURE OF AN OZÆNA.

I do not find in the eminent surgeons any operation for the cure of that disorder, which the Greeks call ozæna, when it does not yield to medicines. I suppose because the operation seldom works a cure, and is nevertheless attended with great pain. By some however it is directed to introduce either a small cannula, or writing reed into the nostril, till it reach up to the bone; then through this to pass a small hot iron to the very bone; next to deterge the cauterized part with verdigrease and honey; and when clean, to heal it up with lycium: Or that an incision be made in the nostril from its extremity to the bone, that the part may be seen, and the hot iron may be more easily applied; then that the nostril be stitched; and the cauterized ulcer cured as in the former method; and litharge or some other agglutinant laid upon the suture.

CHAP. XII.

OF THE OPERATIONS REQUISITE IN THE MOUTH.

Of the teeth.

In the mouth also some disorders are cured by manual operation. Here in the first place the teeth are sometimes loosened, either by reason of the weakness of their roots, or from the gums decaying. It is proper in both cases to apply a hot iron to the gums, so as to touch them gently, but not to make a deep impression. The gums when cauterized must be rubbed with honey, and washed with mulse. When the ulcers begin to be clean, some dry repellent medicines must be sprinkled upon them.

But if a tooth occasions pain, and it seems proper to extract it, because medicines give no relief, it ought to be scraped all round, that the gum may be loosened from it; then it is to be shook; which must be continued till it move easily: for the extraction of a fast tooth is attended with the greatest danger, and sometimes the jaw-bone is dislocated. It is attended with more danger still in the upper teeth; because it may give a shock to the temples or eyes. After these precautions, the tooth is to be taken out, if possible, by the hand, if not, by a forceps.

But if it be corrupted before, its cavity must be filled up either with lint, or lead well adapted to it, lest it break under the forceps. The forceps must be drawn out straight, lest the thin bone, to which the tooth

adheres, be fractured in some part by its bended roots. Neither is this without danger; especially in the short teeth, which generally have longer roots; for often, when the forceps cannot lay hold of the tooth, or does it without success, it takes hold of the jaw-bone, and breaks that.

One may immediately be sure, when there is a large effusion of blood, that something is broken off from the bone. Therefore the scale, that has come off, must be sought for by a probe, and taken out with a vulsella. If it does not come away, the gum ought to be cut, till the scale loosened from the bone can be taken out. And if it be not entirely broken, but the external part of the jaw swells, so that the mouth cannot open, on the outside must be applied a warm cataplasm of meal and figs, till it bring on a suppuration there; then an incision must be made in the gum. A copious discharge of pus is also a sign of a fractured bone: so that even then it is proper to extract it. Sometimes too, when it is injured, there is a fissure, which ought to be scraped.

A rough tooth ought to be scraped, where it is black, and rubbed with the powder of rose leaves, with an addition of one-fourth part of galls, and another of myrrh; and pure wine must be held in the mouth frequently. And in this case the head must be covered, the patient must walk much, make use of friction to his head, and a diet not acrid.

But if either, from a blow, or some other misfortune, some of the teeth are loosened, they must be tied with gold to those that are firm; and restringents must be held in the mouth, such as wine, in which

pomegranate bark has been boiled, or in which hot galls have been infused. And if one tooth should happen to grow in children, before the former has fallen out, that, which should have dropped, must be scraped round and pulled out; that which is growing in the place of the former, must be pushed into its proper place, with the finger, every day, till it come to its just size. Whenever a tooth is extracted, and its root has been left, that also must be immediately taken out by a forceps made for that purpose, which the Greeks call rizagra.

Of indurated tonsils.

Tonsils, that are indurated, after an inflammation, called antiades[HI] by the Greeks, when they are covered by a slight coat, should be disengaged all round by the finger, and pulled out. If they are not separated by this method, it is necessary to take hold of them with a small hook, and cut them out with a knife; then to wash the ulcer with vinegar, and rub the wound with a styptic medicine.

Of the uvula.

The uvula, if it is inflamed, and falls down, and is painful, and of a ruddy colour, cannot be cut without danger; for there is commonly a great effusion of blood: therefore it is better to make use of those remedies I have mentioned elsewhere. But if there be no inflammation, and nevertheless it is relaxed to a great length by a humour, and is small, sharp, and white, a portion of it ought to be cut off: and likewise, if the extremity of it be livid and thick, and

the superior part small. There is no better method than to take hold of it with a vulsella (*a kind of forceps*), and under that, to cut off what we think fit: for there is no danger, that either too much or too little be cut off; as we have it in our power to leave no more below the vulsella, than appears to be useless, and to cut off so much as shall reduce the uvula to its natural magnitude. After the operation, the same applications are proper, which were prescribed above for the tonsils.

Of the tongue.

The tongue, in some people, is joined with the part below it from their birth; who are by that means deprived of speech. The end of their tongue must be taken hold of with a vulsella, and the membrane below it cut; great care being taken, that the contiguous veins be not wounded, and the patient hurt by an effusion of blood. The remaining part of the cure of the wound is already directed in the preceding cases. And most people speak, as soon as it is healed. But I have known an instance, where a person after the cutting of his tongue, though he could thrust it far enough beyond his teeth, did not attain the faculty of speaking. Thus it happens in the practice of physic, that what is always right to do, is not always attended with success.

An abscess under the tongue.

An abscess also sometimes gathers under the tongue; which is generally included in a coat, and excites

violent pains. If this be small, it is sufficient to make one incision into it: if larger, the surface of the skin must also be cut off to the coat, then the lips of it are to be laid hold of on both sides with small hooks, and the membrane must be freed from its connections all round; great care being taken in this operation not to wound any large vein.

Of chopped lips.

The lips are frequently chopped; which besides the pain, is attended with this inconvenience, that it hinders our speaking, as that action by opening the fissures causes them to bleed, and to give pain. If these be only in the surface, it is better to treat them by those medicines, which are composed for ulcers of the mouth: if they are deeper, it is necessary to cauterize them with a thin iron; which being made in the form of a spatha, ought to slide over them as it were, and not press upon them. Afterwards, the same method must be followed, as was laid down in cauterized ulcers of the nostrils.

CHAP. XIII.

OF THE BRONCHOCELE.

In the neck, between the skin and the wind-pipe, a tumour rises, which the Greeks call bronchocele[HJ], in which there is contained sometimes insensible flesh, at other times a humour like honey or water; sometimes also hairs mixed with small bones. Whatever that be, which is contained in the coat, it may be cured by caustic medicines, which burn the surface of the skin, together with the coat below it. When this is done, if it be a humour, it runs out; if it be any thing substantial, it is taken out by the fingers; then the ulcer is healed by lint. But the cure by the knife is more expeditious. An incision is made in one line in the middle of the tumour down to the coat; after which, the morbid body is separated by the finger from the sound parts, and is taken out entire with its coat: then it is washed with vinegar, to which either salt or nitre has been added; and the lips are joined by one stitch. The other applications are the same as in other sutures; afterwards it must be bound up gently, lest it press the fauces. If it should happen that the coat cannot be taken out, we must sprinkle escharotics into it, and dress it with lint and other digestives.

CHAP. XIV.

OF THE OPERATIONS PERFORMED AT THE NAVEL.

There are several disorders about the navel, concerning which, because they are very uncommon, authors are not agreed. Now it is probable, that each one omitted what he had not met with, and that none of them feigned a disease he had not seen. An indecent prominence of the navel is common to them all. The question is, what are its causes? Meges has assigned three; that sometimes the intestine makes its way into that part, sometimes the omentum, at other times a humour. Sostratus has not mentioned the omentum. To the other two he has added, that flesh sometimes grows there; which is sometimes sound, at other times of a cancerous nature. Gorgias also has omitted the omentum, but allowing the other three causes, says, that air too sometimes is forced into this part. Heron has mentioned all these four, and the omentum too; and that species also, in which there is both the omentum and the intestine.

The following symptoms discover what species it is. When the intestine is protruded, the tumour is neither hard nor soft; is lessened by cold, increases not only by heat, but even by keeping in the breath; sometimes it sounds; and when a person lies on his back, the intestine returns of itself, and the swelling subsides. When it is the omentum, the other symptoms are similar, but the tumour is softer, and from its base, tapers towards the top; and if one takes hold of it, it slips away. Where both these are

together, the symptoms are also complicated, and the degree of softness is between both. But flesh is harder, and there is a swelling always, though the patient lies on his back; it does not yield to pressure, whereas the former easily does. If it be corrupted, it has the same appearances which I described in a cancer. A humour, if it be pressed, fluctuates. Air gives way to pressure, but quickly returns; and when the body is in a supine posture, the tumour retains the same figure.

Of these species, that which proceeds from air, does not admit of a cure. It is dangerous also to meddle with flesh that resembles a cancer; and therefore it must be let alone. Where it is sound, it ought to be cut out, and the wound dressed with lint. Some discharge the humour by making an incision in the top of the tumour, and cure that also by lint. With regard to the others, the opinions are various. However, the circumstances themselves make it plain, that the body must be laid in a supine posture; that whether it be the intestine or the omentum, it may fall back into the abdomen. Then the cavity of the navel being empty, by some is laid hold of by two regulae(20), and their ends being tied tight, the part mortifies: by others it is pierced to the bottom with a needle, followed by two threads, and is tied on the one side and the other by the two ends of each of these threads (as is done in the staphyloma of the eye) for by this means the part above the ligature mortifies. Others added this process to the operation: before tying, they made a single incision on the top, that, by introducing a finger, they might push back the protruded part, and then made the

ligature. But it is sufficient to order the patient to hold in his breath, that the tumour may show itself in its full magnitude; then to mark the base of it with ink; and laying the person on his back, to press down the tumour, that if any part has not returned, it may be forced in by the hand; this done, to draw up the navel, and where the mark of the ink is, to tie it strongly with a thread; then to cauterize the part above the ligature, either with medicines, or the actual cautery, till it be mortified; and to dress the ulcer like other burns. This method is very successful not only when the intestine, or the omentum, or both are contained in it, but even where it is a tumour.

But some circumstances are to be considered, before proceeding to the operation, that no danger may arise from the ligature. For neither an infant, nor an adult, nor an old man are proper subjects for this method of cure; but generally such as are from seven to fourteen years old. Next, that person is in a fit condition for it, whose body is sound; but one, who is in a bad habit, and labours under papulæ, impetigoes, and the like disorders, is not a proper subject. Slight tumours also are easily removed; but there is danger in attempting to cure those that are too large. The autumnal and winter season of the year must be avoided. Spring is most suitable: and the beginning of summer is not amiss. Besides these precautions, it is necessary to fast the day before. Nor is that sufficient; for a clyster must also be given, that all the protruded parts may the more easily subside within the abdomen.

CHAP. XV.

THE METHOD OF DISCHARGING THE WATER IN HYDROPICK PEOPLE.

I have elsewhere observed, that it is necessary to discharge the water in dropsical patients. I must now describe the manner of performing it. Some do it below the navel, about four fingers breadth to the left: some by perforating the navel itself. Others first cauterize the skin, and then make an incision through the interior teguments, because what is divided by the actual cautery unites less quickly. The instrument is to be introduced with great care not to wound any vein. It ought to be of such a form, that the breadth of its point should be about the third part of a finger; and it must be introduced so as to pass through the membrane also, which separates the flesh from the internal part; then a leaden or copper pipe must be introduced into it, its lips being either spread outward, or surrounded with some check to prevent its slipping through. The part that goes within ought to be a little longer than that without, that it may reach beyond the internal membrane. By this the water must be evacuated, and when the greater part of it is discharged, the pipe must be stopped with a bit of linen, and left in the wound, if it was not cauterized. Then on the following days, about a hemina must be let out every day, till no water appears to remain. Some even take out the pipe, though the skin has not been cauterized, and tie over the wound a spunge squeezed out of cold

water, or vinegar, and the day following introduce the pipe again (which the recent wound, by being a little stretched open, will admit of) that so, if any humour remains, it may be evacuated; and this they recommend to be done only twice.

CHAP. XVI.

OF WOUNDS OF THE BELLY AND INTESTINES.

Sometimes the belly is perforated by a wound; upon which the intestines roll out. When this happens, it must be first of all considered, whether they be unhurt; and then whether they retain their natural colour. If the smaller intestine be perforated, I have already observed, that there is no cure for it. The large intestine may be sewed; not that there is any reliance on the cure, but because a doubtful hope is preferable to certain despair: for it sometimes reunites. However, if either the intestine be livid, or pale, or black, which symptoms also are necessarily attended with a want of sensation, all remedies are vain. But if they yet retain their proper colour, they must be treated with great expedition; for they are changed in a moment, when exposed to the external air, to which they are not accustomed. The patient must be laid on his back, with his hips raised pretty high; and if the wound be so narrow, that the intestines cannot be conveniently reduced, a sufficient opening must be made by incision. And if the intestines are already become too dry, they must be washed with water mixed with a little oil. Then the assistant ought gently to separate the lips of the wound with his hands, or even with two hooks passed through the peritonaeum, and the physician must insert those intestines first that came out last, in such a manner as to preserve the order of their several convolutions. When they are all replaced, the

patient must be shook gently, which causes all the intestines to return to their proper places, and settle there. These being lodged, the omentum must also be considered; and if any part of that be already black or mortified, it must be cut off by the scissars; if any of it is sound, it must be reduced upon the intestines. Now, neither a suture of the skin alone, nor of the interior membrane is sufficient, but both of them together. And that must be performed with two threads, and sewed closer than in other places; because it may both be more easily broken by the motion of the belly, and this part is not so liable to violent inflammations. Therefore, threads are to be put into two needles, and these held in both hands; the interior membrane must be sewed first, beginning at the extremity of the wound, in such a manner, that the needle may pass from the internal towards the external part, the left hand carrying it through the right lip, and the right hand through the left, by which means, the points of the needles are always farthest from the intestines, and the blunt part next to them. When each side is pierced once, the needles must be changed in the hands, that the needle, which was in the left hand, may be in the right, and that come into the left, which the right held before: and in the same manner they must pass through the lips again; and also a third and fourth time, and so on, the hands each time interchanging the needles, and thus the wound must be closed. Then the same threads and needles must be brought to the skin, and in like manner both sutures be performed on that part too; the needles always passing from the internal part, and from the one

hand to the other. Afterwards agglutinants must be applied: to which it is needless to repeat, from time to time, that it is necessary to add either spunge or sordid wool squeezed out of vinegar. When these are applied, a gentle bandage ought to be passed round the belly.

CHAP. XVII.

OF A RUPTURE OF THE PERITONAEUM.

Sometimes either from a blow, or keeping in the breath too long, or by the pressure of a heavy load, the internal membrane of the abdomen breaks, when the skin above is whole: which also frequently happens to women from pregnancy; and it generally occurs about the ilia. The consequence is, that the flesh above being soft, does not bind the intestines strongly enough, and the skin distended by them forms an indecent tumour. And this disease is cured in different ways. For some passing a needle with two threads into the base *of the tumour*, tie it on both sides in the same manner described in the cases of the navel and the staphyloma, that whatever is above the ligature may mortify. Others cut out the middle of it in the form of a myrtle leaf (according to the rule before laid down for all cases of a like nature) and then join the lips by a suture. However, the best method is to lay the patient on his back, and try by the hand, in what part the tumour yields most, because the membrane must necessarily be ruptured there, and resist more, where it is sound: then, where it appears to be ruptured, incisions are to be made in two lines(21) by a knife, that the part betwixt them being cut out, the internal membrane may have a recent wound on both sides; because what has been long disunited does not unite by a suture. The place being laid open, if the membrane in any part should appear not to be fresh wounded, a small slip must be

cut off, only to ulcerate its edges. What else relates to the suture, and the remaining part of the cure, has been above directed.

Of varices in the belly.

Besides these, some people have varices in their bellies; but as the method of cure here does not differ from that which is practised in the legs, and being about to describe it by and by, I shall refer it to that place.

CHAP. XVIII.

A DESCRIPTION OF THE TESTICLES, AND THEIR DISEASES.

I now come to those diseases which arise in the private parts about the testicles: which, that I may the more easily explain, I shall first give a short account of the nature of the part. The testicles then have something resembling small glands(22): for they do not discharge blood, and are void of all sensation; the coats, however(23), which contain them, are pained in wounds and inflammations. Now each of them hangs from the groin by a nerve (*the vas deferens*) which the Greeks call cremaster[HK]: and with each descends both a vein and an artery. And these are covered with a membrane, thin, nervous, not sanguineous, and white, which by the Greeks is called elytroides[HL]. Over that is a firmer coat, which adheres strongly in the lowest part to the interior one. The Greeks call it dartos[HM]. Besides, there are many small membranes, which inclose the veins and arteries, and those nerves; and betwixt the two coats in the superior part they are thin and open. Thus far then the coats and vessels are peculiar to each testicle. But there is a sinus common to both, and to all the internal part, which is also exposed to our view. The Greeks call it oscheum[HN]; in our language it is scrotum. And this in the lower part is slightly connected with the middle coats, above only envelopes them.

Under this then several disorders occur: which

happen sometimes when these coats, which I said had their origin from the groin, are ruptured; at other times, when they are entire: for sometimes the coat, which ought to separate the intestines from the inferior parts, is either first inflamed from a distemper, and afterwards burst by the weight, or ruptured at once by some wound. Then either the omentum alone, or that and the intestine together, fall down into it by their own weight. And finding a way there, they bear down gradually from the groin upon the inferior parts, and by and by divide the nervous coats, which, for the reason I gave before, are open. The Greeks call these enterocele[HO] and epiplocele[HP]: with us an indecent, but common name for them is hernia.

Now if the omentum descends, the tumour in the scrotum is never removed either by fasting, turning the body one way or another, or placing it in any particular posture; and if the breath be kept in, it is not much increased, is unequal to the touch, and soft and slippery.

But if the intestine also descends, the tumour without any inflammation sometimes lessens, at other times increases, and it is generally free from pain, and when a person is at rest, or lies down, it sometimes entirely subsides, at other times it is so diminished, that a very small part of it remains in the scrotum; but upon vociferation, or repletion, and a violent exertion of force in bearing a great weight, it increases: by cold it is contracted, by heat dilated; and at that time the scrotum is both round and smooth to the touch, and what lies within is slippery; if it be pressed, it returns to the groin; and being let

go, it rolls down again with a murmuring kind of noise, and this happens in the lesser degrees of this malady. But sometimes from the reception of excrements, the swelling is vastly enlarged, and cannot be reduced; and occasions pain at such times to the scrotum and groin, and abdomen. Sometimes too the stomach is affected, and throws up first reddish coloured bile, then green, and in some even black.

Sometimes the membranes being entire, a fluid distends this part: and there are also two species of this. For it either collects between the coats, or in the membranes, which surround the veins and arteries in that part, when they are oppressed, and have grown callous. Neither has that fluid betwixt the coats one certain seat: for sometimes it lodges between the external and middle, sometimes betwixt the middle and internal coat. The Greeks call this by the general name of hydrocele[HQ], of whatever species it be. Our countrymen, not being acquainted with any distinctions, include this also under the same name as the former disorders.

Now in these there are some symptoms, that belong to all, and others, that are peculiar to each particular species. The general are such as indicate the collection of a fluid; the particular, its seat. We know a fluid is contained within, if there be a tumour, that never disappears entirely, but is sometimes lessened by fasting, or a slight fever, and chiefly in children. And this is soft, if there is not a very great quantity of fluid within; but if it has greatly increased, it resists like a bottle filled, and tightly tied; the veins in the scrotum also are inflated; if we press upon it

with our finger, the fluid yields, and fluctuating raises the part that is not pressed; and it appears through the scrotum, as if it were in a glass or a horn; and in itself is attended with no pain. The seat of it is thus known: If the water be betwixt the external and middle coat, when we press with two fingers, it gradually returns between them; the scrotum is somewhat lax and whitish; if it is stroked, it stretches little or nothing; the testicle can neither be seen nor felt in that part. But if it is within the middle coat, the scrotum is more stretched and raised higher, so that the penis above it is concealed under the swelling.

Besides these, when the coats are equally entire, a ramex grows there. The Greeks call it cirsocele[HR], when the veins swell. These being sometimes twisted, and rolled up toward the superior part, fill either the scrotum, or the middle coat, or the innermost one; sometimes they grow even within the innermost coat about the testicle itself and its nerve. Those that are in the scrotum itself are exposed to view; and those which lie upon the middle or innermost coat, as being deeper, are not indeed equally discernible, but yet are visible; besides that there is both some swelling, according to the size and capacity of the veins, and it also resists pressure more, and is unequal by reason of the varicous dilatations of the veins; and on that side where it is, the testicle is more dependent than it should be. But when this malady has grown upon the testicle itself and its nerve, the testicle hangs down much lower, and becomes less than the other, as being deprived of its nutriment.

Sometimes, though seldom, flesh grows between the coats. The Greeks call that sarcocele[HS].

Sometimes too the testicle itself swells from an inflammation, and also brings on fevers; and unless the inflammation has quickly ceased, the pain reaches to the groin and ilia; and these parts swell, and the nerve, by which the testicle hangs, is enlarged, and grows hard at the same time.

Besides the foregoing, the groin is also sometimes filled with ramices; which case they call bubonocele[HT].

CHAP. XIX.

GENERAL DIRECTIONS FOR OPERATIONS IN THE FOREGOING DISEASES ABOUT THE TESTICLES.

These disorders being known, we must proceed to treat of their cure: in which some things are common to them all, some proper to the particular kinds. I shall first speak of the general: and now treat of those, which require the knife. For those, that are either incurable, or ought to be treated in a different manner, I shall take notice of, when I come to the particular species. Now the incision is made sometimes in the groin, sometimes in the scrotum. In either method it is necessary for the patient to drink water for three days before; and the preceding day even to fast: on the day of the operation, he must be laid on his back; and if the incision is to be in the groin, and that is covered with hair, it must first be shaved; then the scrotum being extended to render the skin tense, the incision must be made at the bottom of the belly, where the inferior coats are joined to the abdomen. It must be opened boldly, till the external coat, which is the scrotum itself, be cut, and the middle one come in view. When the wound is made, there is an opening toward the inferior parts. Into that the fore finger of the left hand must be introduced, that by separating the intervening membranes it may enlarge the sinus. And an assistant taking hold of the scrotum with his left hand, must extend it upward, drawing it away as much as possible from the groin; at first with the

testicle, while the physician cuts away by the knife, if he cannot separate them by his finger, all the small membranes, that are above the middle coat; after this, letting go the testicle, that it may slip down, and come near to the wound, and be brought out thence by the finger, and laid upon the belly with its two coats. And if any part of it is corrupted, it must be cut off. And as several veins are dispersed upon it, the small ones may be cut at once, but the larger should be first tied with a pretty long thread, to prevent a dangerous hemorrhage from them.

But if the middle coat be affected, or the disease lies below it, it must be cut out in such manner, that in the higher part close to the groin it should be clean cut off: but the whole must not be taken away below; for what is strongly connected at the base of the testicle with the innermost coat, cannot be cut off without the greatest danger, and for that reason must be left there.

The same method is to be taken in the innermost coat too, if that be injured. But it must be cut off, not at the top of the wound in the groin, but a little below that; lest it bring on inflammations by wounding the membrane of the abdomen. Neither on the contrary must too much of it be left; lest afterwards it form a sinus, and afford a receptacle to the same distemper.

The testicle being thus cleansed must be gently let down through the wound, with the veins, and arteries and its nerve; and care must be taken, that no blood fall into the scrotum, and that it does not remain coagulated in any part: which will be

prevented, if the physician has been careful to tie the veins. The threads, by which their ends are secured, must hang without the wound: and when a suppuration comes on, they will fall off without any pain. Upon the wound itself must be put two fibulæ; and over them an agglutinating medicine.

It is sometimes necessary to cut off something from one of the lips, that the cicatrix may be larger and broader. When this is the case, the lint must not be pressed down upon it, but only laid on lightly; and over it some medicines to repel an inflammation, such as sordid wool, or spunge squeezed out of vinegar; every thing else must be used as when a suppuration ought to be excited. But when it is necessary to make the incision beneath, the patient being laid on his back, the left hand must be put below the scrotum; and a strong hold must be taken of it, and the incision made; if the seat of the disorder be small, the incision must be moderately sized, so as to leave a third part *of the scrotum* below entire, in order to support the testicle; if it be larger, the wound may be greater, a little at the bottom only being left entire, upon which the testicle may rest. But the knife at first should be held in a straight direction, with a very light hand, till it divide the scrotum itself; then the point of it must be turned aside a little, to cut the transverse membranes, that are between the external and middle coats. But the middle coat ought not to be touched, if the disease lie above it; but if it lies below the middle coat, that must be cut too; as likewise the third, if that cover the malady. Wherever the disorder is found, the assistant should squeeze the scrotum gently at the

lower part; and the physician having separated the inferior part by his finger, or the handle of the knife, should bring the coat out of the wound, and make such an incision with an instrument, which from its figure is called corvus, that he may introduce his fore and middle fingers: when this is done, the remaining part of the coat must be cut, and the knife must pass between the two fingers, and whatever is noxious must either be taken out, or be allowed to run out.

Whatever coat is injured in the operation must be cut off; and the middle one, as I observed before, as high as possible at the groin; the innermost one a little lower. But before they are cut off, the vessels ought to be tied very carefully by a thread; and the ends of this thread must be left without the wound, which must be done also in other veins, where the ligature is requisite.

When that is done, the testicle must be returned into its place: and the lips of the scrotum joined together by a suture: and the stitches must not be too few, lest they be not agglutinated, and the cure prove tedious; nor yet too many, lest they increase the inflammation. And in this case too we must be cautious, that no blood remain in the scrotum: afterwards agglutinants must be applied.

If however blood has made its way into the scrotum, or any coagulated blood has fallen down into it, an incision should be made below it; and after cleansing it, a spunge moistened with sharp vinegar must be applied round it. A wound that has been made for these reasons, after it is tied up, if there be no pain, must not be opened for the first five days; but either

the wool or spunge, that lies over it, must be sprinkled twice a day with vinegar alone; if there be pain, it must be opened on the third day; and where there are fibulæ, they must be cut; and where lint, that must be changed; and what is put on, must be wet with oil of roses and wine. If the inflammation increases, to the foregoing applications must be added a cataplasm of lentils and honey, of pomegranate bark boiled in a rough wine, or a mixture of these. If the inflammation does not give way to them, after the fifth day, the wound must be fomented with plenty of hot water, till the scrotum itself be both extenuated, and become more wrinkled; then a cataplasm must be applied of wheat meal, with an addition of pine resin; which, if the patient be a robust man, must be boiled up with vinegar; if more delicate, with honey. And whatever the disorder has been, if there be a great inflammation, without doubt medicines to promote a suppuration must be applied.

But if pus is generated within the scrotum, a small incision ought to be made to give a vent; and so much lint is to be applied as to cover the orifice. When the inflammation is removed, upon account of the nerves, the last-mentioned cataplasm, and then cerate must be used. This is the peculiar treatment of wounds of this kind. All other things both in regard to the manner of dressing, and the diet, should be conformable to the directions we have given about other wounds.

CHAP. XX.

OF THE CURE OF A RUPTURE OF THE INTESTINE INTO THE SCROTUM.

These things being premised, we must descend to the particular species. And if the intestine comes down in a young child, a bandage must be made trial of before the knife: for this purpose a roller is sewed, to which in one part a bolster is used made of cloths, which is applied under the intestine to repel it; and then the rest of the roller is bound tight about him: by means of which, the intestine is often forced in, and the coats are agglutinated together. Again if the patient be advanced in years, and from the largeness of the tumour it appears, that much of the intestine has fallen down, and the case is attended with pains and vomiting (which generally proceeds from the excrements getting down into that part by a crudity) it is plain that the knife cannot be used without fatal consequences; the complaint is therefore only to be alleviated; and the intestine evacuated by other methods.

The patient ought to be bled in the arm: and then if his strength will admit, abstinence must be enjoined for three days; if he cannot bear that, at least as long as his strength will allow. At the same time must be kept upon it a cataplasm of lintseed boiled in mulse. After these both barley meal with resin must be applied, and the patient put into a bath of warm water mixed with oil; and some light and hot food must be given. Some even administer clysters. These

may carry something into the scrotum, but cannot evacuate any thing from thence. The disease being mitigated by the methods above prescribed, if the pain returns at any time, the same course must be pursued.

If a great portion of the intestine has fallen down without pain, it is also needless to make an incision; not but that it may be removed from the scrotum (unless an inflammation prevent) but because when repelled thence, it stops at the groin, and raises a tumour there; and thus there is not a termination, but a change of the malady.

But where the use of the knife is proper, as soon as the wound made in the groin shall reach to the second coat, that must be taken hold of near the lips with two small hooks, while the physician disengages it by taking out all the small membranes: for that, which is to be cut, cannot be injured without danger, as the intestine must lie below it. When it shall be separated, an incision must be made from the groin to the testicle, care being taken not to wound the last; then it must be cut out. For the most part however this operation is *only* practicable in children, and in a moderate degree of the malady.

But if it be a robust man, and the disorder be more considerable, the testicle ought not to be taken out, but to remain in its place. The operation is performed in this manner. The groin is opened in the same way by a knife, as far as the middle coat; and this coat in like manner is taken hold of with two hooks, and the testicle is held by an assistant(24), so as to prevent its coming out at the wound; then an

incision must be made downward in this coat with a knife; and below it the fore finger of the left hand is introduced to the bottom of the testicle, which it forces up to the wound: then the thumb and fore finger of the right hand separate the vein and artery, and their nerve, and coat from the external coat. And if any small membranes obstruct this, they are divided by the knife, till the coat be wholly exposed to view. When all is cut out, that requires excision, and the testicle is replaced, a pretty broad habenula is to be taken from the lip of the wound in the groin, that the wound may be the larger, and generate the more flesh.

CHAP. XXI.

OF THE CURE OF A RUPTURE OF THE OMENTUM INTO THE SCROTUM.

But if the omentum descends, the groin must be opened, and the coats separated in the same manner as directed before. And it must be considered whether it be a large or small part of it. For when it is very small, it must be forced back over the groin into the abdomen by a finger or the broad end of a probe: if it is large, whatever has fallen out of the abdomen must be allowed to remain there; and it must have escharotic medicines laid on it, till it mortify and fall off. Some in this case pass through it a needle with two threads, and tie the two ends of each contrary ways; by which it mortifies with equal certainty, but not so soon. The effect is accomplished sooner, if the part of the omentum above the ligature be rubbed with eating medicines, but not corrosive; they are called septica by the Greeks. There have been others, who have cut off the omentum with scissars: which is not necessary, where the quantity is small; and if large, it may occasion an hemorrhage; for the omentum is also connected by veins, and some of them large. Neither can this practice be justified by an example drawn from the cases of the belly opened by a wound, where the part of the omentum, which falls out, is cut away by the scissars: since in this case, it is both mortified, and cannot be taken off in any other way more safely. If the omentum be reduced, the wound ought to be

stitched; or if it has been large and has mortified externally, the lips must be cut off, as proposed before.

Of a hydrocele.

If there be a fluid within *the membranes*, an incision must be made, in boys upon the groin, unless too large a quantity of fluid forbid the operation in that place; but in men, and where-ever there is a large quantity, the scrotum must be opened. Then if the incision be made in the groin, the coats must be drawn out at that part, and the humour evacuated; if at the scrotum, and the disease be immediately below that coat, there is no more required but to evacuate the humour, and cut away any of the membranes, that happen to contain it; then it must be washed with water, and an addition either of salt, or nitre: if the disease lie within the middle or innermost coat, they must be taken entirely out of the scrotum and cut off.

CHAP. XXII.

OF A RAMEX IN THE SCROTUM.

A ramex situated upon the scrotum must be cauterized with small and sharp irons run into the veins themselves, provided they burn nothing else: it is peculiarly necessary to apply the cautery where they are twisted and rolled together; afterwards meal mixed up with cold water must be laid on; and the bandage must be applied, which I recommended for the anus; on the third day lentils with honey must be put to it: after the separation of the eschars, the ulcers must be deterged with honey, embrocated with rose oil, and brought to cicatrize by dry lint. Where the veins above the middle coat swell, the groin must be cut, and the coat brought without the orifice; after which the veins are to be separated from it by the finger, or the handle of the knife, and where they adhere, tied both above and below by a thread; then they must be cut through close to the ligatures, and the testicle replaced. But if the ramex be situated upon the innermost coat, it is necessary to cut out the middle one. And then if two or three veins swell, so that some part be affected, but the greater part be from the disease, the same method must be pursued as directed above; that is, the veins being tied both at the groin and testicle, may be cut off, and the testicle reduced to its place. But if the ramex have seized upon the whole of it, the fore finger must be introduced through the wound, and put under the veins, so as to draw them out

gradually and uniformly, till the one testicle be equal to the other; then fibulæ are to be put in the lips in such a manner, as to lay hold of these veins likewise. It is done thus. A needle passes through the lip from the external part, and then is directed not through the vein itself, but its membrane, and from thence is forced into the other lip. The veins ought not to be wounded, lest they discharge blood. There is always a membrane between these veins, which occasions no danger, and holds them fast enough, when taken up by the thread: and therefore two fibulæ are sufficient. After this, whatever veins have been brought out, should be returned into the groin with the broad end of the probe. The time for loosing the fibulæ is, when the inflammation is gone, and the ulcer deterged; that the cicatrix may at once bind up both the lips and the veins.

When the ramex has grown between the innermost coat, and the testicle itself and its nerve, the only cure is to cut off the whole testicle: for it does not in the least contribute to generation, and hangs down in all indecently, in some even with pain. But in this case too, an incision is to be made in the groin, and the middle coat must be drawn out and cut away; the innermost one is to be treated in the same manner; and the nerve, by which the testicle depends, to be cut off. After this, the veins and arteries must be tied by a thread at the groin, and cut off below the ligature.

CHAP. XXIII.

OF A SARCOCELE.

If flesh happen to grow between the coats, it must certainly be taken out; and the most convenient way of doing it is by an incision in the scrotum.

But if the nerve be indurated, the disorder cannot be cured either by the hand or medicines. For the patients are oppressed with ardent fevers, and either green, or black vomitings, besides these a violent thirst, and roughness of the tongue; and generally about the third day, frothy bile is discharged by stool, which excoriates the parts; and food can neither be easily taken or retained; not long after, the extremities grow cold, a tumour comes on, the hands are expanded involuntarily; then comes on a cold sweat in the forehead, which is followed by death.

CHAP. XXIV.

OF A RAMEX IN THE GROIN.

When there is a ramex in the groin, if the swelling be small, a single incision ought to be made; if it be larger, it ought to be done in two lines, that what lies between may be cut out; and then without taking away the testicle, as I have above shewn to be sometimes practised in a rupture of the intestines, the veins must be taken up, and tied, where they adhere to the coats, and cut off below these knots. The cure of this wound is no way different from others.

CHAP. XXV.

THE OPERATIONS REQUISITE IN THE DISORDERS OF THE PENIS.

From those we are to proceed to the operations upon the penis. If the glans be bare, and a person chuses for the sake of decency to have it covered, that may be done; but more easily in a boy than a man; and more easily in one, to whom it is natural, than in another, who according to the custom of some nations has been circumcised; better where the glans is small, and the skin about it pretty large, and the penis itself short, than where there is quite the reverse of these circumstances. The cure of these, in whom it is natural, is performed in this manner. The skin about the glans is laid hold of, and extended till it cover it, and tied there; then near the pubes a circular incision is made on the skin of the penis, till it be laid bare; and great caution is used not to cut either the urinary pipe, or the veins in that part. When this is done, the skin is drawn towards the ligature, so that a part near the pubes is laid bare resembling a hoop; then over it is applied lint, that the flesh may grow and fill it up, and the breadth of the wound may afford a sufficient covering to the glans. But the ligature must be continued till a cicatrix be formed, leaving only in the middle a small passage for the urine. But in a person, that has been circumcised, under the circle of the glans, the skin ought to be separated by a knife from the inner part of the penis. This is not very painful, because the

extremity being loosened, it may be drawn backwards by the hand, as far as the pubes; and no hemorrhage follows upon it. The skin being disengaged, is extended again over the glans; then it is bathed with plenty of cold water, and a plaister put round it of efficacy in repelling an inflammation. For the following days the patient is to fast, till he be almost overcome with hunger, lest a full diet should perhaps cause an erection of that part. When the inflammation is gone, it ought to be bound up from the pubercles to the circle of the glans; and a plaister being first laid on the glans, the skin ought to be brought over it; for thus it will happen, that the inferior part may be united, and the superior heal so as not to adhere.

On the contrary, if the glans be covered, so that it cannot be denuded (which malady the Greeks call phymosis) it must be opened: which is done in this manner. An incision is made in the prepuce below its extremity, in a right line to the frænum; and the upper part being thus relaxed, may be drawn back. But if this be not effectual, either upon account of the straitness or hardness of the prepuce, a piece of skin must be immediately cut out in the lower part in the form of a triangle, with its vertex at the frænum, and the base at the extremity of the prepuce. Then lint is to be applied over it, and other medicines to heal it. And it is necessary to continue at rest till it be cicatrized; for walking, by the attrition it causes, renders the ulcer foul.

Of infibulating boys.

Some have made a practice of infibulating boys, sometimes upon account of their health(25): the method of doing it is this. The skin that covers the glans is extended, and marked on both sides with ink, where it may be perforated, and then is let go. If these marks return upon the glans, too much has been taken up, and it ought to be marked nearer the extremity: if the glans is not reached by them, that part is proper for the fibula. Then where the marks are, the skin is pierced by a needle followed by a thread, and the two ends of this thread are tied together, and moved every day, till small cicatrices be formed about the orifice. When these are confirmed, the thread is taken out, and a fibula put in, which, the lighter it is, is so much the better. But this operation however is more frequently needless than necessary.

CHAP. XXVI.

OF THE OPERATION NECESSARY IN A SUPPRESSION OF URINE, AND LITHOTOMY.

Sometimes when no urine is made, an operation is necessary to discharge it, either because the passage is collapsed from old age, or because a stone, or some other concretion from blood has obstructed it within; and a moderate inflammation also often prevents it from being evacuated in a natural way. And this is requisite not only in men, but in women too sometimes. For this purpose are made copper pipes; and that these may serve for all bodies larger and smaller, a physician must have by him three for men, and two for women. Of the male kind, the largest is fifteen fingers breadth long, the middle size twelve, the least nine; for the females, the greater is nine, and the lesser six. They ought to be curved, but more especially the male kind, and very smooth; and their diameter neither too large, nor too small.

The patient then is to be laid on his back, in the same manner as is described in the operation for the stone, either on a couch or bed. The physician standing on the right side, ought with his left hand to take hold of the penis if it be a man, and with his right to introduce the pipe into the urinary passage; and when it comes to the neck of the bladder, by an inclination of the pipe and the penis at once, to force it into the bladder, and when the urine is evacuated, to take it out again. In a woman, the urethra is both shorter, and straighter, and resembles a caruncle,

being situated between the labia pudenda above the vagina; and they as frequently require assistance, but it is not attended with so much difficulty.

Sometimes a stone sliding into the urethra, sticks, where that grows narrower(26), not far from the end; if possible it ought to be drawn out either by a specillum oricularium, or the instrument, with which the stone is extracted in cutting for that distemper. If that has proved impracticable, the prepuce must be drawn out as much as possible, and the glans being covered, must be tied by a thread; then on one side a longitudinal incision must be made into the penis, and the stone extracted; after this the prepuce is let go; for by this means the sound part of the skin covers the incision in the penis, and the urine will be discharged in the natural way.

Since I have made mention of the bladder and stone, the place itself seems to require me to subjoin the *chirurgical* cure for calculous patients, when they can be relieved no other way. But since that is a very dangerous method, it is by no means proper to undertake it precipitately. Nor is it to be attempted in every season, nor at all times of life, nor in every degree of the disease; but only in the spring, and upon a patient, whose age exceeds nine years, and not fourteen; also if the disease has arisen to such a height that it can neither be overcome by medicines, nor protracted, but that in some time it must kill. Not but that now and then even a rash attempt succeeds; however it more frequently fails in this case, because there are more kinds and seasons of danger, all which I shall mention together with the operation itself.

Therefore when it is resolved to try the last remedy, for some days before, the body must be prepared by diet, that is, by taking moderately wholesome food, no way glutinous, and drinking water. In the mean time the patient must exercise by walking, to cause the stone to descend towards the neck of the bladder. Whether this has happened may be known by introducing the fingers, as I shall shew in the operation. When that is certain, the boy must first fast for a day; and then the operation must be performed in a warm place; which is conducted in this manner.

A strong and skilful man sits down upon a high seat, and laying the boy, whose back is towards him, in a supine posture, setting his hips upon his knees, takes hold of him, and drawing up his legs, orders the boy to put down his hands to his hams, and pull them toward his body with all his might, and at the same time he holds them in that posture. But if the patient be pretty strong, two able men must sit behind him on two contiguous seats, and both their seats, and their legs next each other must be tied together, to prevent their giving way. Then he is placed upon both their knees in the same manner, and the one according as he sits, lays hold of his left leg, and the other of his right; and at the same time he himself draws up his hams. Whether he be held by one or two, they lie forward with their breasts upon his shoulders. Whence it happens, that the sinus above the pubes, between the ilia, is extended without any wrinkles, and the bladder being compressed into a small compass, the stone may be the more easily laid hold of. Besides, two strong men are placed one at

each side, who stand by, and do not suffer either the one or two, that hold the boy, to give way.

Then the physician, having carefully pared his nails, introduces his fore and middle fingers of the left hand together, being first slightly anointed with oil(27), into the anus of the patient, and lays the fingers of his right hand lightly upon the lowest part of his abdomen; lest if his fingers on both sides at once should press strongly upon the calculus, it might hurt the bladder. And this must not be done hastily, as in most cases; but so as may be safest: for hurting the bladder brings on convulsions, with a danger of death. And first of all the stone is sought for about the neck: where if it be found, it is expelled with less trouble; and therefore I said the operation was not to be attempted, unless this were known by its proper signs. If either it was not there, or has gone backward, the fingers are applied to the end of the bladder; and the right hand being removed also beyond it, it is brought gradually down.

And when the stone is found (as it must necessarily fall between the surgeon's hands) it is drawn down with the greater caution by how much it is smaller and smoother, lest it escape, that is, lest there be a necessity to harass the bladder again and again. Therefore the right hand is always kept before the stone; and the fingers of the left force it downwards, till it come to the neck. Into which part, if it be oblong, it must be forced so as to come out prone(28); if flat, so as to be transverse; if square, that it may rest upon two angles; if it be larger at one end, so that the smallest may pass first. In a round one, from the figure itself it is plain, there is no difference, save

that if it be smoother in one part than another, that should come out first.

When it is brought to rest upon the neck of the bladder, a lunated incision must be made in the skin, near the anus, as far as the neck of the bladder, with the horns pointing a little towards the ischia; then in that part where the bottom of the wound is straiter, again under the skin(29), another transverse wound must be made, by which the neck may be cut; till the urinary passage be open in such a manner, that the wound is something larger than the stone. For those, who through fear of a fistula (which in that part the Greeks call ouroruas[HU]) make but a small opening, are reduced to the same inconvenience with greater danger; because the stone, when it is brought away by force, makes a passage, if it does not find one. And this is even more pernicious, if the shape or asperity of the stone contribute any thing to it: whence both an hemorrhage and convulsion may ensue. But though a person escape these, the fistula will be much larger, when the neck is lacerated, than it would have been if cut.

When the opening is made, the stone comes into view; the size of which makes a material difference *with respect to its management*. Therefore if it be small, it may be pushed forward on one side, and drawn out on the other by the fingers. If larger, a crotchet(30) made for the purpose must be put over the upper part of it. This at its extremity is thin, beat out into the form of a semicircle, broad and blunt; on the external part smooth(31), where it comes in contact with the wound; on the inside rough, where

it touches the stone. And it ought to be pretty long; for one too short has not force enough to extract it. When it is fixed, it ought to be inclined to each side, that the stone may appear, and be held fast, because if it be laid hold of, it also gives way to it. And the necessity for this is, lest when the crotchet begins to be drawn, the stone may fly inward, and the crotchet fall upon the edge of the wound, and lacerate it, the danger of which I have already shewn.

When it appears that the stone is securely held, a triple motion must be made, almost at the same instant, to both sides, and then externally; but this must be done gently, and the stone must be first drawn a little forward; after this, the end of the crotchet must be raised upward, that it may be farther within the bladder, and bring it out the more easily. But if the stone cannot be conveniently held at the superior part, its side must be taken hold of. This is the most simple method.

But a variety of circumstances requires some particular observations. For there are some stones not only rough, but also full of sharp points, which falling of themselves into the neck of the bladder, are extracted without any danger. But if they are within the bladder, it is neither safe to seek them, nor draw them forward; because when they wound it, they bring on convulsions and death; and more especially if any point is fixed in the bladder, and causes it to fall into folds, as it is brought down *towards the neck*. Now a stone is discovered to be in the neck, when the urine is made with greater difficulty than ordinary; and to be pointed, when it comes away bloody; and this is particularly to be tried by the

fingers, and the operation is not to be attempted unless we are sure it is there. And even then the fingers must be introduced, and opposed to it behind tenderly, lest they wound by pushing it with violence; then the incision must be made. And in this case also many have made use of the knife. Meges (because the knife being weak might fall on some prominence of the stone, and after having cut the flesh above it, would not divide where there is a hollow, but leave what will require a second incision) made an iron straight instrument, with a broad back on its upper part, and its lower part semicircular and sharp. This being taken between his fore and middle fingers, and his thumb laid upon it, he prest it so, that together with the flesh, he might cut any part of the stone that was prominent: by which he gained this advantage, that he made a sufficient opening at once. Now in whatever method the incision in the neck is made, a rough stone ought to be extracted gently; no violence being used for the sake of expedition.

But a sandy stone is easily discovered both before the operation, from the discharge of sandy urine, and in the operation; because it makes but a faint resistance to the fingers, and that not equally, and besides is apt to slide away. Also urine, that brings off with it something like scales, discovers the stones to be soft, and that they are composed of several small ones not firmly united together. All these it is proper to bring away gently, changing alternately the fingers in such a manner, that they may not hurt the bladder, and no broken relics stay behind, which may afterwards render the cure difficult. Any of these, that come into

view, must be extracted either by the fingers or crotchet.

But if there are several stones, they must every one be taken out; but if any very small one remain, it may rather be left: for it is difficult to find it in the bladder; and when found, it quickly escapes. Thus by long search the bladder is hurt, and mortal inflammations are brought on; in so much that some, though they were not cut, when the bladder has been long, and to no purpose, roughly handled, by the fingers, have died. Besides all which, a small stone being brought to the wound afterwards by the urine, drops out.

In case the stone appears so large, that it cannot be extracted without lacerating the neck, it must be split. The author of this contrivance was Ammonius, who upon that account was called Lithotomus[HV] (*the stone-cutter*.) It is done in this manner. A crotchet is fixed upon the stone with so sure a hold as to prevent it from recoiling inward: then an iron instrument of moderate thickness, with a thin edge, but not sharp, is made use of. This is applied to the stone, and being struck on the other side, cleaves it; great care being taken, that neither the instrument come to the bladder, nor any thing fall in by the breaking of the stone.

These operations are performed upon females much in the same manner, concerning whom a very few peculiarities must be mentioned. For in them, where the stone is very small, cutting is unnecessary; because it is forced by the urine into the neck, which is both shorter, and laxer than in men: therefore it

often drops out of itself, and if it sticks in the urinary passage, which is narrower, it is however extracted without any harm by the abovementioned crotchet. But in larger stones the same method is necessary. However, in a virgin, the fingers should be introduced *into the rectum* as in a man, in a married woman by the vagina. Again, in a virgin, the incision must be made below the left lip of the pudendum; but in a married woman, between the urinary passage, and the bone of the pubes; the wound also must be transverse in both places, and we need not be alarmed if the hæmorrhage be considerable from a female body.

When a stone is extracted, if the patient be strong, and not greatly spent, we may let the blood flow to lessen the inflammation. And it is not amiss for the patient to walk a little, that if any grumous blood remain within, it may drop out. But if it does not cease of itself, it must be stopped, lest the strength be entirely exhausted; and this is to be done immediately after the operation in weak patients. For as a person is in danger of a convulsion, whilst the bladder is fatigued, so there is another fear, when the applications are removed, lest there be such an hæmorrhage as to prove mortal: to prevent which, the patient ought to sit down in sharp vinegar with the addition of a little salt; by which means both the blood commonly stops, and the bladder is contracted, and therefore is less inflamed. But if that does little service, a cupping vessel must be applied, both in the knees(32) and hips, and above the pubes too.

When either a sufficient quantity of blood has been

evacuated, or the hæmorrhage stopped, the patient must be laid upon his back, with his head low, and his hips a little raised; and over the wound must be applied a double or triple linen cloth wet with vinegar. Then after an interval of two hours, he must be let down in a supine posture into a bath of hot water, so that he may be under water from the knees to the navel, the other parts being covered with clothes, only with his hands and feet bare, that he may be both less exhausted, and be able to continue there the longer. This commonly produces a plentiful sweat; which in the face is to be now and then wiped off by a spunge. And the rule for the continuance of this bathing is, till it hurts by weakening. After that the patient must be anointed plentifully with oil, and a handful of soft wool saturated with warm oil, must be laid on, so as to cover the pubes and hips, and groin, and the wound itself, which must still remain covered with the linen beforementioned; and this is to be moistened now and then with warm oil; that it may both prevent the admission of cold to the bladder, and gently mollify the nerves. Some make use of healing cataplasms. These do more hurt by their weight, which by pressing upon the bladder(33) irritates the wound, than service by their heat: and for that reason, not so much as any kind of bandage is necessary.

On the day following, if there be a difficulty in breathing, if the urine is not evacuated, or if the part above the pubes has immediately swelled, we may be assured, that grumous blood has staid within the bladder. Therefore the fingers being introduced in the same manner as above, the bladder must be

handled gently, and whatever has happened to be coagulated there dispersed; by which means it is afterwards discharged from the bladder through the wound. Neither is it improper to inject through the wound into the bladder by a syringe, a mixture of vinegar and nitre; for if there be any bloody concretions, they are discussed in that way. And these may be done even the first day, if we are afraid of any thing being within; especially when weakness has prevented the evacuation of it by walking. The other methods laid down for the preceding day, the putting him into the bath, applying the cloth, and wool in the manner above described, are to be continued.

But a boy is neither to be put so often into the warm water, nor kept there so long *at a time*, as a youth; the weak, as the strong; one affected with a slight inflammation, as another, in whom it is more violent; one whose body is disposed to evacuations, as he that is bound. But in the mean time, if the patient sleep, and his breathing be equal, his tongue moist, his thirst tolerable, his lower belly not at all swelled, and the pain and fever moderate, we may take it for granted that the cure goes on well.

But in such patients the inflammation ceases commonly about the fifth or seventh day: when that is abated, the bath is needless. Only the wound, as the patient lies in a supine posture, must be fomented with hot water, that if the urine corrodes, it may be washed away. Digestive medicines must be laid on; and if the ulcer appears to want deterging, honey may be applied. If that corrodes, it must be tempered with rose oil. The enneapharmacum

plaister seems fittest for this intention, for it both contains suet to promote digestion, and honey to deterge the ulcer, marrow also, and especially that of veal, which is particularly efficacious in preventing a fistula from remaining. And at that time lint is not necessary over the ulcer; but is properly laid above the medicine to keep that on. But when the ulcer is cleansed, it must be brought to cicatrize by lint alone.

At this time, however, if the cure has not proceeded happily, various dangers arise: which one may quickly prognosticate, if there be a continual watching, or a difficulty of breathing, if the tongue be dry, if there be a violent thirst, if the bottom of the belly swells, if the wound gapes, if the urine that makes its way through it, does not corrode it; in like manner, if before the third day some livid stuff drops out; if the patient makes no answers to questions, or very slowly; if there are vehement pains; if after the fifth day violent fevers come on, and a nausea continues; if lying upon the belly is the most agreeable posture. However nothing is worse than a convulsion, and a bilious vomiting before the ninth day. But there being reason to fear an inflammation, it must be obviated by abstinence, and moderate food seasonably administered; and by applying, at the same time, fomentations, and the other means above prescribed.

CHAP. XXVII.

OF A GANGRENE AFTER CUTTING FOR THE STONE.

The next danger is that of a gangrene. This is known by a discharge of fetid sanies both by the wound and the penis, and together with that, something not very different from grumous blood, and little films like small locks of wool; it is also known by the lips of the wound being dry, by a pain in the groin, by the continuance of the fever, and its increase at night, and by the accession of irregular shudderings. Now it must be considered to what part the gangrene spreads. If to the penis, that part grows hard and red, and is painful to the touch, and the testicles swell, if to the bladder, a pain of the anus follows, the hips swell, the legs cannot be easily extended; but if to one side, it is apparent to the sight, and has these same symptoms on either side, but not so violent.

The first circumstance of importance is, that the body lie in a proper posture, that the part into which the disease is propagated be always laid highest. Thus if it tends to the penis, the patient should lie supine; if to the bladder, upon his belly; if to one side, upon the other, which is sound. Then as to the means of cure, the patient must be put into a bath made of a decoction of horehound, or cypress, or myrtle, and the same liquor must be injected into the wound by a syringe; then a mixture of lentils and pomegranate bark both boiled in wine must be laid on; or bramble, or olive leaves boiled in the same manner, or other medicines, which we have

prescribed for restraining and cleansing gangrenes. And if any of these shall be in a dry form, they must be blown in through a writing reed.

When the gangrene begins to stop, the ulcer should be washed with mulse. And at this time cerate must be avoided, which softens the flesh, and prepares it for receiving the infection. Rather let washed lead with wine be laid on; over which shall be applied the same spread upon a linen cloth: by which a cure may be accomplished. Nevertheless we should not be ignorant, that when a gangrene has begun, the stomach, which has a certain sympathy with the bladder, is often affected; whence it happens, that the food can neither be retained, nor if any is retained, can it be concocted, nor the body nourished; and therefore the wound can neither be deterged nor incarned: which must of necessity soon bring on death.

But as it is not possible, by any means, to save patients under these circumstances, from the first day however, the method of cure must be *regularly* observed. In *the conduct of* which some caution is also necessary with regard to the food and drink: for at the beginning, none but moist food ought to be given; when the ulcer is deterged, of the middle kind; greens and salt fish are always hurtful. A moderate quantity of drink is required: for if too little is drunk, the wound is inflamed, the patient labours under a want of sleep, and the strength of the body is diminished: if too much be taken, the bladder is frequently filled, and by that means irritated. It is too plain to require a frequent repetition, that the drink must be nothing but water.

It generally happens from a diet of this kind, that the belly is bound. A clyster must be given of a decoction of fenugreek or mallows in water. The same liquor mixed with rose oil, must be injected into the wound by a syringe, when the urine corrodes it, and prevents it from being cleansed. For the most part, at first, the urine is discharged by the wound; whilst it is healing, it is divided, and part begins to be discharged by the penis, till the wound be entirely closed: which happens sometimes in the third month, sometimes not before the sixth, at other times after a whole year.

And we should not despair of a solid agglutination of the wound, unless where the neck has been greatly lacerated, or many and large caruncles, and at the same time some nervous substances have come away by a gangrene. But the greatest precaution must be used, that no fistula, or at least a very small one, be left there. Therefore, where the wound tends to cicatrize, the patient should lie with his thighs and legs extended: unless the stones have been soft or sandy; for in that case the bladder is not so soon cleansed: and, therefore, it is necessary for the wound to be longer open; and never to be brought to cicatrize till nothing more of that nature be discharged.

But if the lips have united before the bladder was cleansed, and the pain and inflammation have returned, the wound must be separated by the fingers, or the broad end of a probe, to allow a passage to what causes the pain: which being evacuated, and the urine having come away pure for a pretty while, cicatrizing medicines must at length

be laid on, and the feet extended, as I directed before, as close to one another as possible.

But if from those causes, which I mentioned, there appears to be danger of a fistula, to close it the more easily, or at least to contract it, a leaden pipe must be introduced into the anus(34); and the legs being extended, the thighs and ancles must be tied together, till there be a cicatrix as good as we can obtain.

CHAP. XXVIII.

OF THE OPERATIONS REQUIRED WHEN A MEMBRANE, OR FLESH OBSTRUCTS THE VAGINA IN WOMEN.

The foregoing diseases may happen both to men and women. But some are peculiar to women; as in the first place, where the vagina, by its lips being joined, does not admit of coition. And this happens sometimes in the womb of the mother; at other times, from an ulcer in those parts, and the lips, in healing, having by bad management been united. If it be from the birth, a membrane obstructs the vagina: if from an ulcer, it is filled up with flesh.

In the membrane an incision must be made in two lines crossing each other, in the form of the letter X, great care being taken not to wound the urinary passage; and then the membrane is to be cut out. But if flesh has grown there, it is necessary to open it in a straight line; then taking hold of it with a vulsella or hook, to cut off a small habenula, as it were, from the orifice of the vagina, after which must be introduced a piece of lint rolled in a long form (by the Greeks called lemniscus) dipped in vinegar; and over this sordid wool moistened with vinegar is to be bound on; the third day, these are to be removed, and the part dressed like other wounds. And when it begins to heal, it is proper to introduce into the part a leaden pipe armed with a cicatrizing medicine; and over that to apply the same medicine, till the wound be cicatrized.

CHAP. XXIX.

THE METHOD OF EXTRACTING A DEAD FOETUS OUT OF THE WOMB.

When a woman conceives, if the foetus dies in the womb, near the time of delivery, and cannot come away of itself, an operation is necessary. This may be reckoned amongst the most difficult: for it both requires the highest prudence and tenderness, and is attended with the greatest danger. But above all, the wonderful nature of the womb, as in other cases, so in this also, is easily discovered.

In the first place, it is proper to lay the woman on her back, across a bed, in such a posture, that her ilia may be compressed by her thighs: whence it happens, that both the bottom of her belly is presented to the view of the physician, and the child is forced to the mouth of the womb; which is close shut, when the foetus is dead, but at intervals opens a little. The physician, making use of this opportunity, having his hand anointed, ought to introduce, at first, the fore-finger, and keep it there till the mouth be opened again, and then he must introduce another finger, and the rest upon the like opportunities offering, till his whole hand be within it. Both the capacity of the womb, and the strength of its nerves, and the habit of the whole body, and even the fortitude of the mind conduce much to the facility of doing this: especially, as in some cases, it is necessary to have both hands within the womb.

It is of importance, that both the bottom of the belly, and the extremities of the body be as warm as possible; and that an inflammation be not begun, but that help be administered instantly, while the case is recent. For if the body be already swelled, the hand can neither be introduced, nor the fœtus brought away without the greatest difficulty; and together with a vomiting and tremor, there generally follow mortal convulsions. When the hand is introduced upon the dead fœtus, it immediately discovers its posture: for it is either turned upon the head, or the feet, or lies transverse but commonly in such a manner; that either its hand or foot is near.

The intention of the physician is, by his hand, to turn the child, either upon its head, or even upon its feet, if it happened to be in a different posture. And if there is no other hinderance, taking hold of the hand or foot puts the body in a better posture: for the hand *being laid hold of*, will turn it upon the head, and the foot upon its feet. Then if the head is nearest, a crotchet should be introduced, in every part smooth, with a short point, which is properly fixed, either in the eye, or the ear, or the mouth, sometimes even in the forehead; and then being drawn outwards, brings away the child. Yet it is not to be extracted at any moment of time indifferently: for should it be attempted, when the mouth of the womb is shut, there being no exit for the child, it breaks to pieces, and the point of the crotchet slips upon the mouth of the womb itself, and there ensue convulsions, and extreme danger of death. Therefore, it is necessary to forbear, when the womb is shut; and when it opens, to draw gently; and every such

opportunity to extract it gradually. The right hand must draw the crotchet, the left being kept within, must pull the child, and at the same time direct it.

It sometimes happens, that the child is distended with water, and there is a fœtid sanies discharged from it. If this be the case, the body must be perforated with the fore-finger, that its bulk may be lessened by the discharge of the humour: then it must be taken out gently by the hands only: for the crotchet being fixed in a putrid body, easily loses its hold. The danger attending which, I have already pointed out.

But a child being turned upon its feet, is not difficult to extract: for these being taken hold of, it is easily brought away by the hands alone.

If it be transverse, and cannot be got into a proper direction, a crotchet must be fixed in the armpit, and gradually pulled: in this case, the neck is generally doubled, and the head turns back upon the body. The remedy is, to cut through the neck, that the two parts may be brought away separately. This is done by a crotchet, which resembles the former, save that it is sharp all along the internal part. Then we must endeavour to bring away the head first, after that, the rest of the body: because generally, when the largest part is extracted, the head slips back into the womb, and cannot be extracted without the greatest danger.

However, if this has happened, a double cloth must be laid upon the belly of the woman, and a strong and skilful man ought to stand at her left side, and put both his hands upon the lower part of her belly,

and press with one upon another: by which means the head is forced into the mouth of the womb, and may then be extracted by the crotchet, in the manner above described.

But if one foot be found at the mouth of the womb, and the other is behind, with the body, whatever is protruded, must be gradually cut away. And if the buttocks begin to press upon the mouth of the womb, they must be thrust back again, and the other foot sought for and brought forward. There are also some other difficulties, which make it necessary to cut the child into pieces, when it cannot be brought away entire.

Whenever a fœtus is brought away, it must be delivered to an assistant; who must take it in his hands, and then the physician ought to draw the umbilical cord gently with his left hand, but not to break it, and with the right to follow it, as far as what they call the secundines, which were the covering of the fœtus within the womb; and taking hold of the extremities of these, to separate all the small veins and membranes in the same manner, by his hand, from the womb, and to extract the whole of it, and any concreted blood that remains within. Then the woman's thighs must be laid close together, and she placed in a room moderately warm, without any thorough air. To the bottom of her belly must be applied sordid wool dipped in vinegar and rose-oil. The remaining part of the cure ought to be the same, as is used in inflammations, and such wounds as are in nervous parts.

CHAP. XXX.

THE OPERATIONS REQUIRED IN DISEASES OF THE ANUS.

Diseases of the anus also, when they are not removed by medicines, require the assistance of the hand. Therefore, if any fissures, in that part, by long continuance, have become indurated, and are already callous, it is most proper to give a clyster; then to apply a hot spunge, in order to relax them, and bring them to the external part, when they are in view, to cut off each of them with a knife, and renew the ulcers; then to lay on soft lint, and over it honey spread upon a linen cloth; and to fill up the part with soft wool, and thus bind it up; on the next and following days, to dress with mild medicines, which I have elsewhere prescribed for the same disorders when recent; and in the first days to diet the patient with gruels, after that gradually to add to the food, but something of that kind, which I have directed in the same place. If at any time, from an inflammation, pus arises in them, as soon as that appears, an incision must be made to prevent the anus itself from suppurating. But we must not be in a hurry to do it before; for if it be cut while crude, the inflammation is much increased, and a greater quantity of pus is generated. In these wounds too, there is a necessity for mild food, and the same kind of medicines.

But the tubercles called condylomata, when they have grown hard, are cured in this manner. First of all, a clyster must be given. Then the tubercle being

laid hold of by a vulsella, must be cut out near its roots. When this is done, the same course must be followed, that I prescribed after the preceding operation; only if there is any fungus, it must be kept under by copper scales.

The mouths of the hæmorrhoidal veins, discharging blood, are taken off thus. When there is a discharge of sanies besides blood, an acrid clyster must be administered, that the mouths of the veins may be pushed the farther outward; which causes all the vessels to appear like small heads. Then if a head be very little, and have a small base, it must be tied with a thread a little above the point, where it joins the anus; and a spunge squeezed out of hot water must be laid over it, till it grow livid; then above the knot it must be scarified either by the nail or the knife. If this is not done, violent pains ensue, and a difficulty in making water. If it be pretty big, and the base broad, it must be taken hold of with a small hook or two, and an incision made round the tumour, a little above the base; and neither any part of the head must be left, nor any thing taken off the anus: which a person may accomplish, if he neither draws the hooks too much nor too little. Where the incision has been made, a needle should be put in, and below that the head tied with a thread. If there be two or three of them, the inmost must be cured first; if more than that number, not all at once, lest there be(35) sore places all round the part at the same time. If there is a discharge of blood, it must be received in a spunge; then lint must be applied; the thighs, groin, and what lies contiguous to the ulcer, be anointed, and cerate laid over it, and the part

filled with warm barley meal, and thus bound up. The day following, the patient ought to sit down in warm water, and be dressed with the same cataplasm. And twice in the day, both before and after the dressing, the ischia and thighs must be anointed with liquid cerate, and the patient kept in a warm place. After an interval of five or six days, the lint is to be taken out with a specillum oricularium; and if these heads have not dropped off at the same time, they must be pushed off by the finger. Afterwards, the ulcer must be brought to heal by mild medicines, such as I have prescribed before. The proper treatment, when the disease is cured, I have already mentioned elsewhere.

CHAP. XXXI.

OF VARICES IN THE LEGS.

From these disorders we go on to the legs. Varices in these are not difficult to remove. To this place I have deferred the cure of those small veins, which hurt in the head, as also the varices in the belly, because it is the same in them all. Therefore any vein that is troublesome, either is cauterized, and so decays, or is cut out. If it be straight, or though transverse, yet simple, it is better to cauterize it. If it be crooked, and as it were twisted into orbs, or several of them are involved within each other, it is more convenient to cut them out.

The method of cauterizing is this. An incision is made in the skin over it; then the vein being laid bare, is moderately pressed by a small and blunt iron instrument red hot: and we must avoid burning the lips of the wound itself, which it is easy to draw back with small hooks. This is repeated over the whole varix, at the distance of about four fingers breadth; and after that a medicine for healing burns is laid on.

But it is cut out in this manner. An incision being made in the same way in the skin over the vein, the lips are taken up with a small hook; and the vein is separated all round from the flesh by a knife, but in this great care is taken not to wound the vein itself; and a blunt hook is put under it; and generally, at the same distance mentioned before, in the same vein, the same operation is repeated. The course of it

is easily discovered by extending it with the hook.

When this has been done, as far as the varices go, the vein, being brought forward in one part by the hook, is cut through, then where the next hook is, it is drawn up and pulled away, and is cut off there again. And in this manner the leg being entirely freed from the varices, the lips of the wounds are then brought together, and an agglutinating plaister is laid over them.

CHAP. XXXII.

OPERATIONS REQUIRED IN COHERING AND CROOKED FINGERS.

If the fingers, either from the birth, or by an ulceration in their opposite sides, have afterwards adhered together, they are separated by the knife; round each of them a plaister, not greasy, is put on, and thus they heal separately.

But if there has been an ulcer in a finger, and afterwards a cicatrix injudiciously brought on, has rendered it crooked; in the first place a malagma must be tried. If that does no good (which generally happens both in an old cicatrix, and where the tendons are hurt) then we ought to see whether the fault be in the tendon or the skin. If in the tendon, it ought not to be touched, for it is not curable: if in the skin, the whole cicatrix must be cut off, which being generally callous, prevents the fingers from being extended. Then being kept extended, it must be brought to cicatrize afresh.

CHAP. XXXIII.

OF THE OPERATION REQUIRED IN A GANGRENE.

I have elsewhere observed, that a gangrene comes about the nails, armpits or groin; and that if it does not yield to medicines, the member ought to be cut off.

But even this is attended with very great danger: for the patients often die in the operation, either by a hæmorrhage, or faintings. But in this, as well as other cases, it is not to be considered, whether the remedy is very safe, which is the only one we have. Between the sound and corrupted part then, an incision must be made with a knife in the flesh, as far as the bone. But this must not be done over a joint; and some of the sound part must rather be cut off, than any of the corrupt left. When we come to the bone, the sound flesh must be drawn back from it, and cut below round the bone, that some part of the bone may also be laid bare under it; then the bone must be cut off with a saw, as close as we can to the sound flesh, that still adheres to it; and then the fore part of the bone, that has been roughened with the saw, must be smoothed, and the skin brought over it; which in a cure of this kind ought to be lax, that it may cover the bone as much as possible all round. The part, which the skin does not reach, must be covered with lint, and above that a spunge squeezed out of vinegar must be tied on the place. The remaining part of the cure must be the same, as I have directed in wounds which are

brought to digestion(36).

A. CORNELIUS CELSUS

OF

MEDICINE.

BOOK VIII.

CHAP. I.

OF THE SITUATION AND FIGURE OF THE BONES OF THE HUMAN BODY.

It now remains, that I speak of what relates to the bones: for the easier understanding of which, I shall first describe their situations and forms. The first then is the skull, which is concave on the internal side, externally gibbous, and on each side smooth, both where it covers the membrane of the brain, and where itself is covered by the skin, from which the hair grows. In the occiput and temples it is simple; but double from the forehead to the vertex. And the bones of it in their external part are hard; on the inside, where they are connected with each other,

softer. And veins are distributed between them, which probably supply them with nourishment.

Now the skull is rarely entire without sutures; but in hot countries it is more frequently found so. And such a head is strongest, and the most safe from pain; of others, the fewer sutures there are, so much the freer is the head from complaints; for their number is not certain, nor indeed their situation. However, for the most part two above the ears divide the temples from the upper part of the head; the third running to each side through the vertex, separates the occiput from the top of the head; the fourth goes from the vertex along the middle of the head to the forehead; and this ends in some at the point, to which the hair extends, in others between the eye-brows, dividing the forehead itself(1). The other sutures are exactly fitted to each other upon the same level. But the transverse ones above the ears, grow gradually thinner to their edges; and thus the inferior bones slightly overtop the superior ones. The bone behind the ear is the thickest in the head; for which reason, probably hair does not grow there. Over these muscles too(2), that cover the temples, a bone is situated in the middle, which is inclined to the external part. But the face has the largest suture; which beginning from the one temple runs transversely through the middle of the eyes, and the nose, to the other temple; from which two short ones point downward under the internal angles. The cheek-bones also have each of them a transverse suture in the upper part. And from the middle of the nose, or the sockets of the upper teeth, proceeds one through the middle of the palate; and another also

divides the palate transversely. These then are the sutures found in most people.

The largest foramina of the head are those of the eyes; next the foramina of the nose; then those we have at the ears. The foramina of the eyes run straight and undivided to the brain. Two foramina are observed in the nose, divided by a bone in the middle: for these about the eye-brows and angles of the eyes begin osseous, and so proceed near the third part of the way; then turning cartilaginous, the nearer they approach to the mouth, so much the softer and more fleshy they become. But these foramina, which from the beginning of the nostrils to the internal part are simple, are there again divided each into two courses; the branches opening into the fauces both emit and receive the breath; the others go to the brain; in the end they are branched into many small openings, which afford the sense of smelling. In the ear too the passage at first is straight, and simple, but farther in, it becomes winding; the part next the brain is separated into many and small openings, from which we have the faculty of hearing. Near these there are as it were two small sinuses; and above them, that bone terminates, which going in a transverse direction from the cheeks is sustained by the inferior bones. It may be called jugale from the same resemblance, which gave it the Greek name of Zygodes[HW]. The maxilla is a soft bone(3), and only one in number: the middle and lowest part of which compose the chin; from whence it proceeds on both sides to the temples; and this only moves: for the malæ with the whole bone, that contains the upper teeth, are

immoveable: but the extremities of the maxilla shoot as it were into two horns. One of these processes is broader below(4), and is narrowed at the vertex, and being extended forward enters below the os jugale, and over that is tied down by the muscles of the temples. The other is shorter and rounder, and is lodged like a hinge in that cavity, which is near the foramina of the ear; and there turning itself different ways, gives the maxilla a power of moving.

The teeth are harder than bone; part of them are fixed in the lower jaw-bone, and part in the upper. The four first from their cutting are by the Greeks called tomici[HX]. On each side of these *above and below* stand the four canine teeth; beyond which there are commonly five maxillary teeth, except in those, in whom the genuine (*dentes sapientiae*) which generally grow late, have not come out. The fore teeth adhere each by one root, the maxillary by two at least, some by three or four. And a longer root commonly emits a shorter tooth; and the root of a straight tooth is straight, that of a crooked one bent. From this root in children, a new tooth springs, which most frequently forces out the former; sometimes however it appears above or below it.

Next to the head is the spine, which consists of twenty-four Vertebræ. There are seven in the neck, twelve by the ribs, and the other five are below the ribs. These are round and short, and send out two processes on each side; in the middle they are perforated, where the spinal marrow, connected with the brain, descends. The sides also between the two processes are perforated by small holes, through which, from the membrane of the brain similar small

membranes proceed. And all the Vertebræ(5) (except the three uppermost) at the superior part in the processes themselves have small depressions; at the lower, on the contrary, they send out processes pointing downwards. The first then immediately sustains the head, by receiving small processes of it into two depressions; which is the reason that the surface of the head below is rendered unequal by two prominences. The second is inserted into the under part of the first, and the superior part of the second is round and narrow (*processus dentatus*) in order to admit of a circular motion, so that the first surrounding the second allows the head to move towards each side. The third receives the second in the same manner; whence the neck has great facility of motion. And indeed it would not be able to sustain the head, if straight and strong nerves on each side did not secure the neck; these the Greeks call Carotæ. For one of them in every flexure, being always stretched, prevents the upper parts from slipping further. The third Vertebra has prominences, which are inserted into that below it. All the rest are inserted each into its inferior one by processes pointing downwards; and by depressions, which they have on each side, they receive the superior, and are secured by many ligaments, and a great quantity of cartilage. And thus one moderate flexure forward being allowed, a man both stands erect for some kinds of employment, and at other times bends himself as the actions he is engaged in require.

Below the neck, the first rib is situated opposite to the shoulders. After that the six inferior ones(6) reach the bottom of the breast: and these at their origin

being round, and furnished with something like small heads, are fixed to the transverse processes of the vertebræ, which are in that part a little depressed; then they grow broader, and bending outward, degenerate gradually into cartilage; and in that part being again turned gently inward, are joined to the pectoral bone: which begins strong and hard at the fauces, being excavated on each side, and terminates at the præcordia, where it is softened into a cartilage. And under the superior ribs there are five, which the Greeks call Nothæ (*spurious*) shorter, and thinner, which also gradually turn to cartilage, and adhere to the external parts of the abdomen; the lowest of these in the greatest part of it is nothing else but a cartilage.

From the neck two broad bones, one on either side, go to the shoulders, by us called scutula operta, by the Greeks Omoplatæ. These have cavities at their vertices; from the vertices they become triangular, and growing gradually broader tend to the spine; and the broader they are in any part, so much the duller is their sensation. These too at their extremity are cartilaginous, and in their back part lie as it were loose, because, unless at the top, they are fixed to no bone, but are there tied down by strong muscles and nerves.

But at the first rib(7) a little within the middle of it, a bone grows out, in that part indeed slender; but going forward, the nearer it comes to the broad bone of the scapula, it becomes thicker, and broader, bending a little inwards, which being a little enlarged at its other vertex, sustains the clavicle. This bone is crooked, and is to be reckoned amongst

the hardest bones; the one end of it is joined to the bone I just mentioned before, and by the other it is fixed in a small depression of the pectoral bone, and is moved a little in the motion of the arm; and its lower head is connected by ligaments and a cartilage with the broad bone of the shoulders.

Here the humerus begins, which at both its ends is enlarged, soft, without marrow, and cartilaginous; in the middle round and hard, and containing marrow; is a little concave(8) in its fore and internal part; and convex in its posterior and external part. Now the fore part is next the breast; the posterior is toward the scapulæ; the internal next the side; and the external at the greatest distance from the side: which distinctions will afterwards appear applicable to all joints in the extremities. The upper end of the humerus is rounder than the other bones, which I have yet mentioned, and *a small part of it* is inserted into the vertex of the broad bone of the shoulder; the greatest part, standing out of it, is secured by ligaments. But the inferior head has two processes; the intermediate space between which, is even more depressed than its extremities.

This affords a reception to the fore-arm; which consists of two bones. The Radius, which the Greeks call cercis[HY], is the superior one and shorter, and at first being more slender, with its ends round, and a little concave, receives the small tubercle of the humerus, which is secured there by ligaments and a cartilage. The cubitus is the inferior and longer; it is at first larger in its upper end, and by two vertices, as it were, standing out, fixes itself into the sinus of

the humerus, which I mentioned, betwixt its two processes. The two bones of the fore arm at first(9) are close together, then separate by degrees, and meet again at the hand, their former proportions being reversed: for there the radius is pretty large, and the cubitus very small. After that the radius rising to a cartilaginous head is inserted into its neck. The cubitus is round at its extremity, and projects a little on one part. And to save frequent repetition, this ought to be known, that most bones end in a cartilage, and that every articulation is thus terminated: for it could neither be moved, unless it pressed upon something smooth, nor be joined with flesh and ligaments, unless these were connected by some matter of a middle nature.

In the hand, the first part of the palm consists of many and small bones, the number of which is uncertain. But all of them are oblong and triangular, and connected together by a peculiar kind of structure, the plain of each one being higher than another alternately; whence it happens, that the whole makes up the appearance of one bone a little concave on the internal part. But from the hand two small processes are lodged in the cavity of the radius. Then at the other end five straight bones going to the fingers, compleat the palm; from which the fingers themselves have their origin. These consist each of three bones. The conformation of them all is the same. The more internal bone has a depression in its vertex, and receives the small tubercle of the external, and these are secured by ligaments. From them arise the nails, which grow hard: and thus they adhere by their roots, not to bone, but rather to

flesh. This then is the construction of the superior parts.

But the lower part of the spine ends in the hip-bone, which is transverse, and far the strongest, and defends the womb, bladder, and intestine Rectum. And this in the external part is convex; at the spine inclined backward; on the sides, that is, at the hips themselves, it has round cavities; from whence arises the bone, which is called pecten; and that being situated transversely over the intestines under the pubes, strengthens the belly; it is straighter in men, but in women more bent externally, that it may not prevent the birth.

From these proceed the thigh bones; the heads of which are still rounder than those of the humeri; though the latter have more rotundity, than is found in any of the rest. A little lower they have two processes on the fore and posterior part. From that they descend hard and full of marrow, externally convex, and are again enlarged at the inferior heads. The superior ones are inserted into the cavities of the hip-bone, as the humeri into the bones of the scapulæ; then, lower down, they slope gently inward, that they may more equally sustain the superior parts. And their inferior heads have also depressions between them, that they may be the more easily received by the bones of the leg: which articulation is covered by a small, soft, and cartilaginous bone, which is called Patella. This floating above, and not being fixed to any bone, but bound down by flesh and tendons, and a little more inclined to the thigh bone, defends the joint in all flexures of the legs.

The leg consists of two bones; for in every thing the thigh resembles the arm, and the leg the fore-arm; so that the shape and elegance of the one may be known from the other; which beginning with the bones, answers also in the flesh. One of these bones is situated on the external part of the calf of the leg, and from that properly enough takes the name of Sura(10). This is shorter and more slender above, but is enlarged at the ancles. The other, which is placed in the fore part, and has the name of Tibia, is longer and larger in the upper part, and is alone connected with the lower end of the thigh-bone, as the cubitus is with the humerus: and these bones too, being joined both below and above, separate in the middle, as those of the fore arm.

The leg bones are received below by a transverse bone in the ancle; and that is situated above the heel bone; which in one part has a depression and in another prominences, and it both receives the processes from the ancle-bone, and is inserted into its cavity. And this is hard, without marrow, and projecting more to the posterior part makes a round figure there. The other bones of the foot are constructed in a similar manner to those of the hand. The soles answer to the palms, the toes to the fingers, and the nails to the nails.

CHAP. II.

GENERAL DIVISION OF DISORDERS IN THE BONES. OF A BLACKNESS AND CARIES, AND THEIR TREATMENT.

Whenever a bone is injured, it is either corrupted, or fissured, or fractured, or perforated, or contused, or dislocated. A corrupted bone generally turns first oily, and afterwards either black or carious. These cases happen from large ulcers, or fistulas over them, when they have either grown antient, or have been seized with a gangrene. First of all it is necessary to lay bare the bone, cutting out the ulcer, and if the disorder extends farther than the ulcer was, to pare away the flesh below, till the sound part of the bone be exposed all round; then it is sufficient to cauterize the part that is oily, once or twice, by the application of an iron instrument, that so a scale may cast off; or to scrape it, till some blood appear, which is the mark of a sound bone: for whatever is vitiated must necessarily be dry. The same method must also be pursued in a cartilage that is injured; for that too must be scraped by a knife, till what remains be sound. And then what is thus scraped, whether bone or cartilage, must be sprinkled with nitre well powdered. And nothing else is to be done, where a caries or blackness is in the surface of the bone: for in that case, the cautery or the scraping must only be continued a little longer. A person, that scrapes these, ought to press the instrument boldly, that he may both do it effectually, and have the sooner done. The operation is finished, when we come to the

white or firm bone. It is evident, that when the defect is a blackness, it ends in the white, and that where there is a certain degree of solidity, there the caries terminates. We have already observed, that there is also some blood in a sound bone: But when either of these happen to go in pretty deep, it is uncertain where they end.

It is easy to form a judgment in a caries, if a small probe is introduced into the foramina, which by penetrating more or less, shews that the caries is either in the surface, or of greater depth. The same may be collected(11) even from the pain and fever; for when these are moderate, it cannot have penetrated deep. A greater certainty is obtained however by the application of the perforator: for the disease ends, where the dust of the bone ceases to be black. Therefore if the caries has gone deep, several holes must be made in it by the perforator, as deep as the disease goes; then into these holes must be put hot irons, till the bone become entirely dry. For the consequences of this operation will be, that whatever is spoilt will be separated from the bone below; and the cavity will be filled up with flesh; and afterwards either no humour at all, or a small quantity will be discharged.

But if the blackness goes through(12) to the other side of the bone, it ought to be cut out. The same may be done also in a caries, that penetrates to the other side of the bone. But where the whole is spoilt, the whole must be taken away. If the inferior part is sound, so far as is corrupted, ought to be cut out. Likewise if the skull or pectoral bone, or a rib be carious, the actual cautery is needless, but there is a necessity for

excision. Neither does the opinion of these people deserve our attention, who defer the excision to the third day after the bone is laid bare, before they cut it out; for in all cases it is safer to perform an operation, before an inflammation come on. Therefore both the skin is to be cut, and the bone laid bare, and freed from every fault, as far as possible, in the same moment. Now a disease in the pectoral bone is far the most pernicious of any; because though the operation have succeeded well, it hardly ever restores a perfect soundness.

CHAP. III.

OF THE USE OF THE MODIOLUS AND PERFORATOR, AND OTHER INSTRUMENTS, ESPECIALLY FOR THE BONES OF THE HEAD.

There are two ways of cutting out a bone; if the part injured be very small, by a modiolus, which the Greeks call chœnicion[HZ], if larger by terebræ. I shall explain the method of each. The modiolus is a concave and round iron instrument with serrated edges in its lowest extremity; through the middle of which is put a pin, surrounded also by an interior circle. Of perforators there are two kinds: one of them resembling that, which carpenters use; the other with a longer head, which begins from a sharp point, and then turns quickly broader; and again from another beginning goes upward with thickness pretty near equal.

If the disease be confined to a small space, so that the modiolus can cover it, that must be used preferably. But if a caries appear below, the pin in the middle is put into the opening. If there be a blackness, a small hole is made by the angle of a chisel(13) to receive the pin, that the modiolus resting upon that, by being turned round may not slip, and then it is turned like the perforator by a strap. And there is a certain degree of pressure required, that both a perforation may be made, and it may go round; because if it be lightly impressed, it does not produce the effect; if too much, it has no motion. And it is not improper to drop in a little rose oil or

milk, the smoothness of which may make it turn with the greater ease; yet too much of the liquid blunts the edge of the instrument. But when the modiolus has marked out a way for itself, the middle pin is taken out, and it is worked about by itself. And then, when the soundness of the inferior part is discovered by the dust, the modiolus is taken away.

But if the disease is more extended than to be covered by that, we must make use of the perforator. By this a hole is made in the limit, that divides the injured from the sound part of the bone; and not far from that a second, and a third, till the part, that is to be cut out, be surrounded with these holes. And in this case too the dust indicates how deep the perforator is to go. Then a chisel being drove by a mallet from one hole to another, cuts out the intermediate space between them; and thus a circumference is formed like to that, which is imprinted in a smaller circle by the modiolus. In whichever way the circle has been made, let the same chisel, laid flat on the corrupted bone, smooth each superior lamina, till the bone be left entirely sound.

A blackness hardly ever goes quite through a bone, but a caries does, especially where the skull is faulty. There also the disorder is discovered by the probe, which being introduced into the hole, that terminates at the sound part of the bone, both finds some resistance, and comes out moist. If it prove pervious, the probe going in deeper between the bone and the membrane, meets with no resistance, and comes out dry: not because there is no corrupt sanies within, but because it is there diffused, as being in a larger

cavity.

Now whether a blackness, which the perforator has discovered, or a caries, which the probe has shewn, pass through the bone, the use of the modiolus is generally fruitless: because, where the disease has penetrated so deep, it must also necessarily be largely extended in breadth. Here then we must use the second kind of perforator above described; and to prevent its growing too hot, it must be dipped now and then in cold water. But then we must proceed with greater caution, when we have perforated either half through in a simple bone, or the superior lamina in a double one. The space itself guides us in the first case; and in the other, the blood. Therefore at that time the strap must be drawn slower, the left hand should press more gently, and be taken off pretty frequently: also the depth of the perforation is to be considered, that we may be sensible whenever the bone is broke through, and run no risque of wounding the membrane of the brain by its point, from which proceed violent inflammations, with danger of death.

When the holes are made, the intermediate spaces must be cut out in the same manner, but with much more circumspection; lest the angle of the chisel chance to wound the same membrane; till a passage be made, through which the instrument to protect the membrane may be introduced. The Greeks call it meningo-phylax[IA]. It is a copper plate, firm, bent a little upward towards the end, and externally smooth: which being introduced in such a manner, that its external surface be next the brain, is put under that part, which is to be separated by the

chisel; and if it receives its angles, it stops its progress; and upon this account the physician repeats his strokes upon the chisel both more boldly, and more safely, till the bone being cut out all round is raised by this plate, and may be taken away without any hurt to the brain. When the whole bone is taken out, the edges must be scraped round and smoothed, and if any dust has fallen upon the membrane, it must be gathered up. When the superior part is taken away, and the inferior left, not only the edges, but the whole bone must be smoothed, that the skin may afterwards generate upon it without being hurt, which growing upon a rough bone, does not immediately become sound, but produces new pains.

The steps to be taken after the brain is uncovered, I shall mention, when I come to fractured bones. If any base is preserved, medicines not greasy, that are calculated for recent wounds, must be applied, and over them must be laid sordid wool moistened with oil and vinegar. In process of time flesh grows from the bone itself, which fills up the cavity made by the operation. And when any bone is cauterized, it separates from the sound part, and granulations sprout up between the sound and mortified part, which expel what has separated. And this, because it is a thin and small lamina, by the Greeks is called lepis[IB], that is, a scale.

It may happen too, that from a blow, a bone may be neither fissured, nor broke through, but the surface of it only contused, and rendered rough. When this occurs, it is sufficient to scrape and smooth it. Though these methods are most commonly practised in the head, yet they are common to the other bones

too; so that wherever the like case shall occur, the same remedy must be used. But as they are fractured, fissured, perforated, and contused, they require some particular methods of cure in each kind, and in most of them, some general ones also. Of these I shall proceed to treat, beginning with the head.

CHAP. IV.

OF FRACTURES OF THE SKULL.

When a blow has been received upon the skull, we must immediately enquire, whether the person has vomited bile; whether he have lost his sight, or his speech; whether blood has issued by his nostrils, or ears; whether he has immediately fallen down; whether he has lain insensible, as if asleep: for these do not happen without a fracture of the bone. And when they occur, we may be assured, that an operation is necessary, but of uncertain success. If besides, a torpor has come on; if he is delirious, if either a palsy, or a convulsion has followed, it is probable that the membrane of the brane too is wounded; and of such patients there is still less hope. But if none of these have ensued, and it may be doubted, whether the bone be fractured, it is first to be considered, whether the blow was given by a stone or a stick, or iron, or any other weapon, and whether *the instrument* was smooth, or rough, small or large, whether struck with force, or more lightly; because the more gentle the stroke was, so much the more easily we may suppose the bone to have resisted it. But it is best to examine that by a more certain mark. Therefore a probe ought to be introduced where the wound is, neither too small nor sharp, lest if it should light upon any of the natural sinuses, it mislead us into an opinion of a fracture, where there is none; and not too thick, lest small fissures escape it. When the probe comes to the bone,

if nothing but what is smooth and slippery occur, one may judge it to be sound; if there is an asperity, especially where there are no sutures, that is an evidence the bone is fractured.

Hippocrates has recorded, that he was himself deceived by the sutures. This is the custom of great men, who have a just consciousness of their own superior abilities: for little minds, because they are deficient in every thing, never allow themselves to be deficient in any. An ingenuous confession of an error is worthy of a great genius, who will have enough besides to entitle him to esteem; and it is especially *laudable* in a practical art, which is handed down to posterity for their benefit; that they may not be deceived in the same way another was deceived before them. A regard to the memory of a professor, in other respects so great a man, led us into this digression.

Now a suture may deceive for this reason, because it is equal in asperity to the other; so that though there be a fissure, one may readily take it for a suture, in a place, where it is likely one lies below. Therefore it is not fit to be thus deceived; but the safest method is to lay bare the bone: for, as I observed before, the place of the sutures is not certain; and the same part may both have this natural junction, and be fissured by a blow, or may have some fissure near it. Nay sometimes, when the blow has been violent, though nothing be found by the probe, yet it is better to open it. And if even then the fissure is not manifest, writing ink must be drawn over the bone, and then scraped off with a chisel, for if there be any fissure it retains the blackness.

Sometimes it even happens, that the blow has been given on one side, and the bone fissured on the other. For that reason, if upon receiving a violent blow, bad symptoms have followed, and no fissure be found in that part, where the skin is lacerated; it is not improper to consider, whether any part on the opposite side be softer, and swelled; and to open that; for there a fissure in the bone will be found. Nor is it very troublesome to heal the skin again, though nothing has been discovered by the incision. A fractured bone, unless help be seasonably administered, brings on violent inflammations, and is treated with more difficulty afterwards.

Rarely, but sometimes it happens, that the whole bone remains sound; but from the blow some internal vein in the membrane of the brain is broke, and discharges blood, which being coagulated there, raises violent pains, and deprives some people of their sight. But there is generally a pain in the part that covers it, and an incision being made in the skin there, the bone is found pale; and therefore this must also be cut out. Upon whatever account this operation is necessary, if the opening of the skin is too small, it must be enlarged, till all the injured part be in view. In this great care must be taken to leave upon the bone no part of that fine membrane that covers the skull below the skin; because when this is lacerated by the chisel, or perforators, it excites violent fevers with inflammations. Therefore it is better to separate it entirely from the bone. If the external wound be made by the blow, we cannot alter the form of it. If we are to make one, the best is that made by two transverse lines in the shape of the

letter X, that afterwards the skin may be cut below, beginning at each of the prominent angles.

If blood is discharged in the time of doing this, it must be frequently restrained by a spunge dipped in vinegar, and taken up by lint applied upon it, and the head raised high. This accident is attended with no danger except among the muscles, which secure the temples; but even in that place there is no safer method.

In almost every fissure, or fracture of the bone, the ancient physicians had immediate recourse to instruments to cut it. But it is far the best method, first to try plaisters that are composed for the skull. Some one of these, it is proper to soften with vinegar, and apply alone upon the fissured or fractured bone; then over that, somewhat broader than the wound, a piece of linen spread with the same medicine, and besides that, sordid wool dipped in vinegar; then to bind up the wound, and open it again every day; and dress it in this manner for five days; from the sixth, to foment it also with the vapour of hot water by a spunge, continuing all the former treatment. And if granulations begin to grow, if the febricula is either gone, or abated, if the appetite has returned, and the patient gets sufficient sleep, we must continue the same dressings. Some time after, the plaister must be softened, with the addition of a cerate made of rose oil, to promote the growth of flesh: for, by itself, it has a repellent quality. By this method often the fissures are filled with a kind of callus, which is as it were a cicatrix in a bone. And in large fractures, if the bones do not cohere together in any part, they are united by the

same callus; and this is a far better covering to the brain, than the flesh that grows, when the bone is cut out. If, under the first treatment, the fever increases, the sleeps are short and disturbed by dreams, the ulcer is moist and does not fill, small glandular swellings rise in the neck; the pains are violent; and with all these the loathing of food increases; then, and only in that case, recourse must be had to the hand and the chisel.

There are two dangers attending a blow upon the skull; that it be either split, or depressed in the middle. If it is fissured, the lips of it may be compressed; either because one of them rises above the other, or even because they have run together again with force: whence it happens, that a humour descends upon the membrane, and has no vent, and thus irritates it, and brings on violent inflammations.

When the bone is depressed in the middle, it presses upon that same membrane of the brain; and sometimes also some sharp points from the fracture, prick it. In the cure of these cases as little as possible must be taken off the bone. Therefore, if one edge rests upon the other, it is sufficient to cut off the prominence with a plain chisel. After that is removed, if the fissure gapes a little, it is enough for the cure. But if the edges are compressed together, an opening must be made with the perforator, at a finger's breadth distance on one side, and from that the chisel must be carried in two lines, to the fissure, in the form of the letter Λ: so that the vertex of it may be at the opening, and the base at the fissure.

But if the fissure extends to a great length, it will be

proper to repeat the operation from another foramen; and thus nothing that is broke off can be concealed under the bone, and a large opening is procured for whatever is hurtful within. Nor is it necessary to cut out the whole of a fractured bone, though it be depressed; but if it be either entirely broke through, and has separated wholly from the cranium, or if it adhere to *the surrounding skull* in a small part, it must be divided from the sound bone by the chisel. Then in the depressed bone, near the fissure we have made, holes must be bored; if the injured part be small, two; if larger, three; and the spaces betwixt these must be cut out; and then the chisel must be drove on both sides to the fissure, in such a manner as to make a semicircular cavity, and let the middle part be toward the fracture, and the horns point to the sound bone. Then if any pieces be loose, and can be easily taken away, they must be removed by the forceps, which is made for that purpose, especially those sharp pieces, which irritate the membrane. If this cannot be easily done, the plate, which I called meningo-phylax, must be put below it; and above that whatever is prickly, and stands inward, must be cut off; and whatever is depressed inward must be raised by the same plate. The effect of such treatment is, that the fractured bones, if they adhere together in any part, may be consolidated; and wherever they are broke away, in time they may be separated by medicines without any pain; and at the same time a space may be left sufficiently large between them, to evacuate the sanies; and the brain may have a better protection from the bone than it would have had, if that were

cut out.

After these things are done, the membrane must be sprinkled with sharp vinegar; that, if there be a discharge of blood from it, it may be restrained, or if any blood remain coagulated within, it may be discussed; then the same medicine must be applied, softened in the manner above prescribed, to the membrane itself; the other directions, which relate to the linen spread, and the sordid wool, must be observed in the same manner, and the patient must be kept in a warm place, and the wound dressed every day; and in summer even twice.

But if, by reason of an inflammation, the membrane has swelled, warm rose oil must be infused upon it. If it shall swell to such a height as to rise above the bones, it will be restrained by lentils well powdered, or vine leaves powdered, and mixed with either fresh butter, or recent goose fat; and the neck will require to be mollified by liquid cerate made of iris ointment. But if the membrane shall appear not to be clean, equal quantities of the plaister and honey must be mixed; which must be infused upon it; and to keep that on, a piece of lint or two must be clapped on, and that again covered with a linen cloth spread with a plaister. When the membrane is sufficiently clean, cerate must be added in the same manner to the plaister to promote the growth of flesh.

As to abstinence, and the food, and drink, in the first and more advanced stages of the cure, the same rules must be observed which I prescribed in wounds, and with the greater exactness, by how much a hurt in

this part is more dangerous. Nay even when it shall be fit to allow such a quantity of food as not barely to sustain the patient, but to nourish him, yet every thing that requires chewing must be avoided; also smoke, and whatever excites sneezing. The membrane being moveable, and of its natural colour, granulations of ruddy flesh, and an easy motion of the lower jaw and neck, afford certain hopes of recovery. The bad signs are, the membrane immoveable, black, livid, or of any other vitiated colour; a delirium, acrid vomiting, a palsy, or convulsion, livid flesh, or rigor of the jaws and neck. The other symptoms that relate to sleep, appetite, fever, and the colour of the pus, are either salutary or mortal, as in other wounds.

When the case succeeds well, the growth of flesh begins from the membrane itself; or if the bone in that part be double, it sprouts from thence too, and fills up the void space between the bones; sometimes it even rises higher than the surface of the skull. If that happens, copper scales must be sprinkled on to keep it down; and medicines applied to bring a cicatrix over it, which is easily obtained in every place, except the part of the forehead, which is a little above the space that lies between the eyebrows (*sinus frontalis*): for there, an ulceration for the whole life after, can hardly be prevented; this must be covered with a linen cloth spread with a medicine. And the following directions must be always observed in a fractured skull, that till the cicatrix be strong, the sun, wind, frequent bathing, and excess in wine be avoided.

CHAP. V.

OF FRACTURES OF THE NOSE.

In the nose, both the bone and the cartilage are liable to be fractured; and that sometimes happens in the fore part, sometimes on one side. If either both, or one of them be fractured in the fore part, the nostrils fall in, and the breath is drawn with difficulty. If the bone is fractured on one side, that part is hollow; if the cartilage, the nostrils are turned to the opposite side.

Any part of the cartilage, that has given way, must be gently raised, either by a probe put under it, or two fingers compressing it on both sides; then lint platted of a due length, sewed up in soft leather, must be put within; or some part of a dry penecillum composed in the same manner; or a large quill dipped in gum or joiner's glue, and covered with soft leather, which prevent the cartilage from sinking in. But if the fracture be in the fore part, both nostrils are to be equally filled. If on one side, what is put in ought to be thicker in that part where the nose falls in, and smaller on the other; and externally, a soft strap must be carried round, the middle of which is spread with fine flour and soot of frankincense mixed together; and this must be drawn beyond the ears, and the two ends being crossed there and returned, are to be glued to the forehead: for it sticks to the skin like glue, and when it has grown hard, it keeps the nostrils firm. But if what is put within gives pain, which happens chiefly where the interior part of the

cartilage is broke through, the nostrils being raised in the same(14) manner, must be only held firm by the strap abovementioned; then, after fourteen days, that must be removed; it is to be separated by hot water, with which also the swelled part(15) must be fomented every day.

But if the bone be fractured, that must also be reduced into its place by the fingers; and when the fracture is in the fore part, both nostrils must be filled; when on the side, that to which the bone has been forced; cerate also must be applied, and it is to be bound down a little more tightly; because in that part, there not only grows callus enough to make it sound, but even to form an eminence. From the third day, it must be fomented with hot water, and the more so, the nearer it may be expected to approach a sound state. And if there be several small pieces in the fracture, nevertheless each of them *that are beat in*, must be forced into its place by the fingers: also the strap must be applied externally, as before directed; and over that a cerate, without any other bandage.

But if any fragment be separated all round, and will not be united with the rest, as may be known from the humour, which will be discharged in great quantity from the wound, it must be extracted by a vulsella; and when the inflammation is gone, some one of those medicines that are gently repellent, must be applied. The case is worse, when besides a fracture of the bone, or cartilage, there is also a wound in the skin. This very seldom occurs. When it does happen, they must nevertheless be raised to their place in the same manner; and upon the skin

must be laid some one of these plaisters, that are adapted to recent wounds: but no bandage must be applied over it.

CHAP. VI.

OF FRACTURES OF THE EARS.

Sometimes the cartilage of the ear is broke. When this happens, an agglutinating medicine must be applied, before a suppuration begins; for that often prevents it, and heals the ear. Both here and in the nose, it should be understood, that the cartilage itself is not re-united, but that the flesh growing round it consolidates the part; and therefore, if, together with the skin the cartilage is broke, the skin is sewed on both sides; but I now speak of the cartilage fractured, when the skin is entire. If pus then is already formed, the skin must be opened on one side, and over against the incision, the cartilage itself must be cut in a lunated form; then a gentle styptic must be used; such as lycium diluted with water, till the bleeding be stopped; after that a plaister that is not greasy, spread upon linen, must be laid on, and soft wool put behind the ear, to fill up the space between that and the head; then it must be fastened by a gentle bandage; and from the third day fomented with warm water, as I directed for the nostrils; and in these kinds of accidents, at first abstinence is necessary, till the inflammation be gone.

CHAP. VII.

OF A FRACTURED MAXILLA, TOGETHER WITH SOME GENERAL OBSERVATIONS RELATING TO FRACTURES.

As I am to proceed from these parts to the lower jaw, I think it proper to insert some observations relating to all the bones in general, to prevent a frequent repetition of them. Every bone then is sometimes split longitudinally, like wood, sometimes is fractured transversely, sometimes obliquely; and in this last species the ends are sometimes blunt, sometimes acute, which last is of the worst kind; because they are not easily united, where they do not rest upon something obtuse, then they also wound the flesh, and sometimes a nerve or a muscle: moreover, one fragment sometimes happens to be divided into several. In fractures of the other bones, one end often recedes entirely from the other; but the broken ends of a jaw-bone remain always in contact in some one part.

Therefore, first the bones are to be forced into their place, by two fingers pressing on each side, both within the mouth and upon the chin; then if the fracture of the jaw-bone be transverse, (in which case one tooth generally stands out beyond that next to it) when it is reduced, the two contiguous teeth, or if they are loose, those next to them, must be tied together by a horse-hair. In a different kind of fracture this is needless. All the other steps are the same *as in the above-described fractures*; for a double linen cloth dipped in wine and oil must be laid upon

it, and with that fine flour, and the soot of frankincense; then a roller or soft strap, with a longitudinal opening in the middle, that it may take in the chin both above and below; and lastly, the ends of it must be brought over the head and tied there.

With regard to the bones in general, it may further be remarked once for all, that fasting at first is necessary; then from the third day moist food; when the inflammation is removed a little fuller diet and such as promotes the growth of flesh; wine is hurtful through the whole time. On the third day, they ought to be opened, and fomented with the vapour of hot water by a spunge, and the same dressings, as at first, are to be put on; this to be repeated on the fifth day, and so on, till the inflammation is gone, which ceases, either on the ninth day, or generally on the seventh: when that is removed, the bones must be examined again, that if any fragment is not in its place, it may be reduced, and the bandage must not be taken away, till two thirds of the time have elapsed, in which the several bones unite.

Now, generally between the fourteenth and twenty-first day, the following bones heal: the lower jaw, cheek-bone, clavicle, breast-bone, scapula, ribs, the spine at the hips, the ancle-bone, heel, hand, and foot; between the twentieth and thirtieth, the bones of the leg and fore arm; between the twenty-seventh and fortieth, the arm and thigh bones.

But concerning the lower jaw-bone I must add, that the case requires the long use of a liquid diet. Also far a considerable time pancakes and such like must

be continued, and nothing be chewed, till the callus has perfectly restored the strength of the bone: and for some days, at first, the patient must not speak at all.

CHAP. VIII.

OF A FRACTURED CLAVICLE.

The clavicle, if it be fractured transversely, sometimes unites very well of itself, and if it be not moved, may do well without a bandage; but sometimes, and especially when it is moved, it slides away; and generally the part next the breast lies over, and behind that next the humerus. The reason of which is, that it does not move by itself; but complies with the motion of the humerus: therefore, this standing still, the humerus is moved upon it. That part of the clavicle, next the breast, very seldom lies on the forepart; insomuch that men of great character in the profession have told us they never met with it; but the authority of Hippocrates is sufficient to put the fact beyond dispute.

However, as these cases are dissimilar, so each requires a treatment somewhat different from the other. When the clavicle flies back towards the scapulæ, the humerus must be pushed backward by the palm of the right hand, and at the same time the clavicle itself be brought forward. When turned to the breast, this must be forced backward, and the humerus brought forward; and if the humerus fall below the other, that part of the bone next the breast must not be depressed, because it is immoveable; but the humerus itself must be raised; but if it rise higher, the part next the breast must be filled with wool, and the arm bound down to the breast. If there be sharp pieces in the fracture, an incision must be

made in the skin over it; and any parts of the bone, that wound the flesh, must be cut off; then the blunted bones must be brought together; and if there be a prominence any where, it must be kept down by a linen cloth, three times folded, dipped in wine and oil: if there be several fragments, they are to be covered with a splint, the inside of which is to be smeared with wax, lest the roller should slip on one side. The roller must be bound over the clavicle, when reduced, rather often than tight: and this rule holds in all fractures. In a fracture of the right clavicle, the bandage ought to pass from it to the left arm-pit; if, of the left *clavicle*, to the right; and again under the arm-pit of the affected bone: this done, if the clavicle be inclined toward the scapula, the fore-arm must be tied to the side; if forward, to the neck; and the patient laid on his back. All the other directions given before must be observed.

Now there are several bones that have very little motion, and are either hard, or cartilaginous, which are liable to be fractured, or pierced, or bruised, or fissured, as the malae, the breast-bone, scapula, ribs, spine of the hips, ancle-bone, heel, hand, and foot. The method of cure is the same in all these. If there is an external wound, that must be dressed with the medicines proper for it. While the wound is healing, a callus also fills up the fissures of the bone, or any vacuity that may be in it. If the skin is entire, and from the pain we infer that the bone is injured, there is nothing else to do but rest; and cerate must be applied, and tied on gently, till the pain is removed by the bone becoming sound.

CHAP. IX.

OF FRACTURES OF THE RIBS AND SPINE.

But there are some peculiarities to be observed relating to the ribs; because they are near the viscera, and that part is exposed to great dangers. A rib then is sometimes fissured in such a manner, that not the exterior surface of the bone, but the interior part of it, which is thin, is hurt; sometimes it is broke entirely through. If the whole is not fractured, there rarely follows either a spitting of blood, or a febricula, or any suppuration; and the pain is not great; however the place is slightly pained upon being touched. But this case requires no more than to do what is above directed; and in binding it up to begin at the middle of the roller (*a double-headed roller*) lest it draw the skin to either side. After the twenty-first day, when the bone ought to be united, we must endeavour, by a more plentiful diet, to render the body as plump as possible, that it may cover the bone the better; which being yet tender is in that part exposed to injuries under a thin skin. And through the whole time of the cure, vociferation must be avoided, and even speaking, hurrying, anger, all violence of motion, smoke, dust, and whatever excites either coughing or sneezing; and it is not even proper to hold in the breath much.

But if a rib be entirely broke through, the case is more troublesome: for both violent inflammations, and a fever and suppuration, and often a danger of death ensue; and a spitting of blood. Therefore, if the

strength admits, blood must be taken from the arm of the same side with the rib; if it does not allow this, a clyster must be given, but without any thing acrid; and the patient must fast a considerable time. He must not eat bread before the seventh day, but live upon gruel alone; and upon the part must be applied cerate made of lycium, with an addition of boiled resin; or the malagma of Polyarchus; or cloths squeezed out of wine, rose oil, and common oil; and over these soft sordid wool, and two double-headed rollers, but not tight. What I mentioned before as hurtful, are in this case to be avoided with greater caution; so that even the breath must not be too often fetched. But if a cough be troublesome, a potion must be taken for it, either of germander, or rue, or the herb staechas, or of cummin and pepper. When there are severe pains, it is proper to lay on a cataplasm either of darnel or barley, with an addition of a third part of mellow figs. And this must lie on in the day time; but in the night, either cerate, or a malagma, or cloths; because the cataplasm may drop off. Therefore it must be opened every day, till such time as we may be content with the cerate or malagma. And for ten days the body must be reduced by fasting; from the eleventh we must begin to nourish it; and therefore the bandage about it must be more lax than at first; and generally this method is continued to the fortieth day.

In the course of which, if there be any fear of a suppuration, the malagma will be more effectual to discuss it than cerate. If, notwithstanding, the suppuration take place, and cannot be discussed by the medicines prescribed before, no time must be

lost, lest the bone below be affected; but in the part where it shall swell most, a hot iron must be introduced, till it reach the pus, which must be evacuated. If a tumour does not appear any where, we may discover where the pus is principally lodged in this manner. We must rub all the part with Cimolian chalk, and suffer it to dry; and wherever the moisture shall penetrate deepest, there the pus is nearest to the skin; and here the actual cautery is to be used. If there shall be a pretty large abscess, it will require two or three perforations; and lint to be put into them, or some part of a penecillum; which may be tied by a thread at the top, that it may be easily drawn out. What remains to be done is the same as in other burns. When the ulcer shall be clean, the body must be nourished, lest a consumption follow, which would be fatal. Sometimes too, when the bone is more slightly affected, and neglected at first, not pus, but a certain humour like mucus is collected within, and the skin over it grows soft; in which case, we must use the cautery in the same manner.

Fracture of the spine.

There is also something peculiar to be noted in the spine: for if any part has separated from a vertebra, or is any way broken(16), the part becomes hollow; prickings are felt there, because these fragments must necessarily be jagged: whence it happens, that the patient now and then leans forward. These are indications of the case; and the same medicines are necessary, which have been mentioned in the first

part of this chapter.

CHAP. X.

OF FRACTURES OF THE HUMERUS, FORE-ARM, THIGH, LEG, FINGERS, AND TOES.

The cases which occur in the arms and thighs, and their methods of cure, are in a great measure similar. There are also some general things that belong equally to the arms, fore-arms, thighs, legs, fingers, and toes; for a fracture in the middle of these is least dangerous; but the nearer the fracture is, either to the superior or inferior head, so much the worse: for it both creates greater pain, and is more difficult to cure. Of fractures, the most innocent is a simple transverse one; worse, where it is oblique, and where there are fragments; worst of all, when these are sharp. Sometimes the bones in these parts being fractured, continue in their places: but they much more frequently give way, and one part lies over the other. This circumstance ought to be first of all considered; and there are certain marks for knowing it. If they are displaced, they are bent, and cause the sensation of pricking, and are unequal to the touch. But if they meet one another, not directly, but obliquely (which happens, when they are not in their place) that limb is shorter than the other, and the muscles of it swell.

Therefore, if this is found to be the case, it is proper to extend the limb immediately: for the tendons and muscles being *in a natural state kept* stretched by the bones, are *in this case* contracted; neither do they

return to their place, unless they be extended by force. Again, if that is neglected for some days at first, an inflammation comes on, during which, it is both difficult and dangerous to use violence to the tendons; for there follows a convulsion or gangrene; or at least, which is the mildest of the bad consequences, a suppuration; therefore, if the bones have not been replaced before *the inflammation*, they must not be reduced till after it is gone. Now one person alone may extend a finger, also any other member, if it be of a child, by taking hold of one part with his right hand, and the other with his left. A stronger limb requires two to pull different ways. If the tendons are very firm, as is the case in robust men, and chiefly in their thighs and legs, the ends of the joints on both sides must be tied with straps, or linen rollers, and pulled contrary ways by several persons; and when this force has stretched the limb a little beyond its natural length, then the bones must be pressed by the hands into their place; and the sign of a bone's being reduced, is the removal of the pain. The limb being made equal with the other, must be wrapt up in cloths two or three times doubled, dipped in wine and oil; for which purpose linen is best.

Six bandages are generally required. The first to be applied is the shortest; which should be rolled about the fracture(17), and ascend spirally like a screw; and it is sufficient for it to go round in this manner thrice. The second is one half longer than this; which, if the bone project in any part, must begin there; if it be every where equal, it may begin any where upon the fracture, and go in an opposite

direction to the former, tending downwards, and returning again to the fracture, end in the upper part beyond the former bandage. Over these must be laid cerate, upon a broad piece of linen, to keep them on. And if the bone is prominent in any part, a cloth, three times doubled, moistened in the wine and oil before mentioned, must be laid upon it. These are to be secured by a third and a fourth bandage, in such a manner, that the following move always in a contrary direction to the former, the third alone must end in the lower part, and the other three in the superior; because it is better to make several convolutions, than to bind it tight; for a strict bandage disorders a part, and makes it liable to a gangrene. We ought to bind an articulation as little as possible; but if the fracture of the bone is near the joint, there is a necessity for it.

When the limb is bound up, it must be kept so to the third day, and the bandage should be such, as on the first day not to hurt *by its stricture*, and yet not to seem lax; on the second it should be a little laxer; the third almost loosened. Therefore, the limb must then be bound up again, and a fifth roller must be added to the former; after which it must be again opened on the fifth day, and then secured by six rollers, in such a manner, that the third and fifth may end below, and the rest above. As often as the limb is opened, it must be fomented with hot water. But if the fracture be near a joint, wine, with the addition of a small proportion of oil, must be dropped upon it for a long time, and all the other directions observed, till the inflammation leave it, or the limb become smaller than ordinary: which, if it does not happen

on the seventh day, will certainly be effected by the ninth. Then the bones are handled with great ease.

Therefore, if they are not well joined to each other, they must be set again; and if any fragments rise above the rest, they must be reduced into their places, and then the limb must be rolled up in the same manner, and splints be fitted round it, to keep the bones in their places. And on that side, to which the fracture inclines, a broader and stronger splint must be applied. About a joint all these should turn outward, that they may not hurt it, and be bound no tighter than is necessary to secure the bone: as they grow laxer in time, they must be a little tightened every third day by their straps; and if there be no itching nor pain, continue so, till two-thirds of the time be compleated, in which each of these bones unites; afterwards, it is to be bathed more gently with hot water; for at first it is necessary to dissipate the humours, and afterwards to make them transpire. Therefore it must also be anointed lightly with liquid cerate, and the surface of the skin rubbed; and the fracture be bound up more loosely. It must be opened every third day, and all the applications be repeated, except the hot water; only one of the rollers, as often as it is loosed, must be withdrawn.

Of a fractured humerus.

The foregoing rules are general; the following peculiar to each bone. If the humerus be fractured, the extension must not be made as in another limb; but the patient is placed in a high seat, and the physician in a lower one opposite to him. Then the

patient's fore-arm is to be supported by a bandage passed round it, and fastened behind the neck. *This done*, a second bandage, *with two heads*, is to be rolled round the upper part of the humerus, and have its two ends tied into a knot above the head. Lastly, a third bandage of the like kind is to be fastened to the lower part of the humerus, and carried downwards, its two ends being also tied together. Then, from behind the patient's head, an assistant stretching his own arm *through the loop of* the second mentioned roller, his right, if the right humerus is to be extended, his left, if the left *humerus*, takes hold of a stick placed between the patient's thighs; the physician also sets his right foot, if he be to operate upon the left humerus, his left, if upon the right, on the third of these rollers; and at the same time the assistant raises the one roller, and the physician depresses the other; by which means, the humerus is gently extended. If the fracture be in the middle or lower part of the bone, shorter rollers are required; if in the superior, longer; so that they may be extended from thence over the breast, under the other arm-pit to the shoulders. In binding it up, the fore-arm must be so inclined, and the affected part put into such a position by the bandages, that the suspending of the forearm afterwards, do not turn the humerus any other way, than when it was bound up. And the fore-arm being hung, the humerus is to be also gently tied down to the side; by which means it will be prevented from moving, and therefore the bones continue as they have been set. When we come to the application of splints, these ought to be longest on the external side, shorter on the fore-part, but

shortest of all under the arm-pit. And when the humerus is fractured near the cubitus, they must be pretty often removed, lest the tendons there grow rigid, and the fore-arm be rendered useless. Whenever they are removed, the fracture must be held in the hand; and the cubitus fomented with hot water, and rubbed over with soft cerate; and splints must either not be put upon the processes of the cubitus at all, or they must be somewhat shorter *than the others*.

Of a fracture of the fore-arm.

But if there is a fracture in the fore-arm, it must be first of all considered, whether one bone or both be broken: not that there is any different method of cure to be used; but first that the extension may be the stronger, if both bones be fractured, because the tendons must necessarily be less contracted, when one of the bones is entire, and keeps them upon the stretch; in the next place, that every thing which relates to securing the bones, may be done with the greater accuracy, if one of them does not help the other: for where one is unhurt, it helps more than rollers and splints. The fore-arm ought to be tied up with the thumb turned a little toward the breast; for that is the most natural posture of the fore-arm: and after the bandages are put on, it is best held in a scarf, the full breadth of which is under the fore-arm, with its ends, which are very narrow, fixed over the neck; thus the arm is conveniently suspended from the neck, and ought to hang a little higher than the other elbow.

But if any part of the top of the cubitus be fractured, it is improper to secure it by bandages, because the fore-arm becomes immoveable. And if means only are found(18) to remove the pain, it remains as useful as before.

Fractures of the thighs and legs.

It is of equal importance in the leg for one of the bones to continue entire. Both in this and the thigh it is fit after binding it up to put it in a box. This box ought to have holes below, through which any humour that is discharged, may descend; and at the foot a prop, which may both sustain, and not suffer it to slip; and holes in the sides, through which straps being past, some bars[IC] may keep the leg and thigh in their position. If it be a fracture of the leg, this ought to reach from the foot to the ham; if of the thigh, as far as the hip; if near the head of the thigh-bone, so as that the hip likewise may be within it. We ought not to be ignorant, however, that a fractured thigh becomes shorter, because it never entirely returns to its former state; and that the person ever after supports himself upon his toes in that foot, which occasions great weakness; however it is much worse, where the misfortune has been encreased by neglect.

Fractures of the fingers.

It is sufficient to bind a finger to one small twig, after the inflammation is gone.

General rules.

The foregoing directions are confined to the cases relating to particular limbs; the following are general: fasting for some days at first; then when the callus is growing, a pretty full diet; long abstinence from wine; plentiful fomentations of hot water, while the inflammation continues; when that has ceased, they must be more sparing; lastly, a pretty long but gentle rubbing of liquid cerate into the more remote parts. Nor must the limb be immediately put upon exercise, but by degrees returned to its former motions.

The case is a good deal worse, when, besides the fracture of the bone, there is also a wound in the flesh; and particularly if that happen in the muscles of the thigh or arm: for the inflammations there are much greater, and they are more liable to gangrenes. And generally, where the bones of the thigh have slipped past each other, it is necessary to cut it off. The arm is also endangered in the same circumstances, but is more easily preserved. And these dangers are still more to be apprehended, if the fracture be near the joints: therefore, such a case must be treated with more care, and the muscle must be cut through transversely over the middle of the wound; and if the hæmorrhage has been but small, the patient must be bled, and extenuated by fasting for ten days. And though the other limbs may be extended slowly, and the bones reduced gently to their place; yet in these it is not quite expedient either to extend the tendons, or handle the bones. And the patient must be allowed to keep them in the

position that is easiest to him. To all such wounds must be applied, at first, lint dipped in wine, with an addition of a very little rose oil: the other management is the same as above recommended. They are to be bound up with rollers broader(19) than the wound; which must be applied looser, than if there was not a wound there; and as the wound is more liable to corruption and a gangrene, we are by a number of rollers to manage it so, that though they are slack, they may keep the bones firm.

This method may be followed in the thigh or arm, provided the bones have chanced to return to their proper place; but if they be in any different situation, they must only have such a bandage, as will keep on the medicine that is applied. The other directions I gave before must be observed: except that neither splints nor boxes be used, with which the wound cannot heal; but only more and broader rollers are necessary; and both hot oil and wine must be poured upon them now and then; more frequently the latter. At the beginning the patient must fast; the wound must be bathed with hot water; he must avoid the cold; and recourse must be had to medicines for promoting digestion of the wound, and more care must be taken of the wound than the bone: for that reason it must be opened every day and dressed.

In the mean time, should any small fragment of the bone project, if it be blunt, it must be reduced into its place; if sharp, its point, when long, must first be cut off, when short, filed, and in either case smoothed with a chisel; and then it must be returned in again. And if that cannot be done by the hand, a vulsella, such as workmen make use of, must be

applied with that part(20) which turns inward to the sharp point of the bone, that by its convex part the prominent bone may be thrust into its place. If it be too large, and covered by small membranes, we should allow these to be dissolved by medicines, and when the bone is laid bare, cut it off; which is to be done pretty early, and afterwards, in this method we may let the bone unite and the wound heal; the first in its proper time, and the other as the circumstances admit.

Sometimes too it happens in a large wound, that some fragments as it were mortify, and do not unite with the rest. This may be discovered from the quantity of discharge; which makes it necessary to open the ulcer oftener than it is dressed; and the consequence generally is, that this bone, after some days, of itself falls off; otherwise, though the condition of the wound is miserable enough before, that often encreases it, and makes it more tedious of cure. The bone too is often broken away, when the skin is entire, and immediately an itching and pain come on. Wherefore, if that happens it is proper to open it the sooner, and bathe it in the summer time with cold water; and in the winter with water just warm; and then apply myrtle cerate.

Sometimes, the fracture, by some points like prickles, irritates the flesh: which being discovered by the itching and prickings, the physician must open it, and cut off these points. The other part of the cure is the same in both these cases as in a recent wound. When the ulcer is clean, nourishing food must be taken. If the limb is still too short, and the bones are not in their places, a wedge of the smallest and

smoothest kind must be put in between them with its head standing out a little, and the thick part of it must be driven farther in every day, till that limb be equal to the other. Then the wedge must be taken out, and the wound healed up. When a cicatrix is brought on, it must be bathed with a decoction of myrtle, ivy, and other like vervains, cold, and a drying medicine applied upon it; and in this case, there is a greater necessity for rest, till the limb recover its strength.

When the bones happen not to unite, because they have been often opened, and often moved, the method of cure is obvious; for they may unite. If the fracture be of long standing, the limb must be extended, to create a fresh injury; the bones must be separated from one another by the hand, that their surfaces may be roughened by rubbing against each other, and if there be any fat substance, it may be abraded, and the whole of it become as it were recent: great care, however, must be taken not to wound tendons or muscles. Then it must be bathed with a decoction of pomegranate bark in wine; and the same mixed with the white of eggs, must be applied to it; on the third day it must be opened, and bathed with a decoction of the vervains abovementioned: which must be repeated on the fifth day, and splints put round it; the other steps, both before and after, which I directed already, must be taken in the same manner. However, sometimes the bones unite obliquely(21); and thus the limb becomes both shorter and deformed, and if the ends are pretty sharp, continual prickings are felt: for this reason the bones ought to be fractured again, and

put in a proper direction. It is done in this manner. The limb is fomented with plenty of hot water, and rubbed over with liquid cerate and extended; in the mean time, the physician handling the bones, the callus being yet tended, separates them by his hands, and forces the part that projects, into its place: and if that is not effectual, on that side, to which the bone inclines, he puts a regula wrapped up in wool; and by thus binding it up brings it to a habit of lodging in its former place.

Sometimes also, though the bones have united as they should do, too large a callus grows upon them; and therefore the part is swelled. When this happens, the limb must be rubbed gently for a long time, with oil, salt and nitre, and bathed with plenty of salt water; a discutient malagma must be applied; and a tight bandage put on; and the patient must eat herbage, and take vomits; by which course, the callus is reduced together with the flesh. Some good is done by an application of mustard and a fig upon another limb, till it corrode a little, and derive the matter to that part. When the tumour is lessened by these means, the person may return to his ordinary course of life.

CHAP. XI.

OF LUXATIONS.

Thus far then we have treated of fractures. Now the bones are dislocated in two ways. For sometimes those that are joined together, separate from each other, as when the broad bone of the scapula recedes from the humerus(22), and in the fore-arm the radius from the cubitus, and in the leg, the tibia from the fibula, and sometimes in leaping the heel-bone from the ancle; which last, however, seldom happens. Sometimes the articulations are displaced. I shall speak first of the former.

When such an accident happens, the part is immediately hollow, and by pressing upon it with the finger one feels a cavity. After that, a violent inflammation comes on; and particularly in the ancle; for generally it occasions fevers and gangrenes, and either convulsions, or contractions, which draw the head down upon the shoulders. To avoid which, the same method must be followed here, as in injuries of the moveable bones. And whenever it happens, the medicines prescribed before must be laid on these parts to remove the pain and tumour: for bones once separated in this manner never come together again; and though some degree of comeliness be attainable in the part, yet it is of no use(23).

But the lower jaw and the vertebræ, and all the joints, though they be secured by strong ligaments,

are luxated by the force of a blow, or when the ligaments are either ruptured, or some way weakened; and more easily in children or lads, than in those that are more robust. And they slip out forward and backward, and inward and outward; some of them in all these ways, others in particular ways. And there are some general signs belonging to all, others peculiar to each one: for there is always a tumour in that part, to which the bone is propelled, and a cavity in that from whence it recedes. Now these marks are common to them all; the others peculiar to the several bones will be mentioned, when I speak of each case distinctly.

But though all the articulations may be dislocated, they cannot be all replaced; for the head is never reduced, nor a vertebra in the spine, nor a jaw-bone, which being out on both sides, has raised an inflammation before it could be returned. Again, those that slip out from the fault of the ligaments, when they are forced into their places, give way again. And those that have been dislocated in childhood, and have not been reduced, grow less than the rest: and the flesh of all these that are not in their place, is decayed, and more so in the member nearest to it, than in one beyond it. For instance, if the humerus is not in its place, the arm wastes more than the fore-arm, and that more than the hand. Then according to the situations, and the nature of the accidents, there is left either more or less use of the limb; and the more use remains of it, the less it is wasted.

Now whatever is dislocated should be reduced before an inflammation begin. If that has already seized it,

till it cease, it must not be meddled with; after its removal, trial must be made in such limbs as are reducible. A great deal depends upon the habit both of the body and the ligaments: for if the body be slender, or humid, or if the ligaments be weak, the bone is more quickly reduced; but it is both more liable to dislocation, and is less firmly held after it is reduced(24). Bodies of the contrary qualities hold it faster in its place; but when once forced out, admit of its return with difficulty. It is proper to alleviate the inflammation by applying sordid wool squeezed out of vinegar; and if the misfortune be in a strong articulation, to abstain from food for three, and sometimes even five days; to drink warm water till the thirst be gone; to observe these rules more strictly in luxations of those bones, that are held by strong large muscles; and much more so if a fever has ensued; on the fifth day to foment with hot water; and taking away the wool, to apply cerate made of Cyprine oil, with the addition of nitre, till the inflammation be entirely removed. Then it is proper to use friction to the limb; to take food of good juices, wine in moderate quantity; and by this time, to make some use of the limb: because motion, as it is extremely hurtful in pain, so it is very salutary when the pain is removed. These observations are general; I shall now treat of the particular cases.

CHAP. XII.

OF A LUXATED MAXILLA.

In a dislocation of the lower jaw it is pushed forward, but sometimes on one side, sometimes on both. If on one side, it inclines together with the chin to the contrary side, the teeth do not answer to each other, but the canine teeth below are opposite to the incisores: if on both sides, the chin leaves its place, and is protruded to the external part; and the lower teeth come farther out than the upper; and the muscles of the temples appear tense. The patient, as soon as possible, must be placed in a seat in such a manner, that an assistant may secure his head behind; or he may be seated near a wall, putting a hard leather cushion between the wall and his head, and let his head be pressed upon the cushion by an assistant, that it may be kept the steadier; then the thumbs of the physician being wrapped up with linen cloths, or rollers, that they may not slip, must be introduced into his mouth; and the fingers must be applied externally. When the maxilla is firmly grasped, if the luxation be on one side, the chin must be shaken, and brought towards the throat; then at the same time his head must be held, and the chin being raised, the maxilla forced into its place, and the mouth shut; and all this must be done almost in the same instant. But if the luxation be on both sides, the same method must be taken; but the jaw-bone must be forced back equally on both sides. When the bone is replaced, if the case was attended with a pain

of the eyes and neck, blood must be taken from the arm. And as liquid food at first is proper for all persons, whose bones have been dislocated, so particularly in this circumstance; where even frequent speaking, by the motion of the mouth, hurts the nerves of the temples(25).

CHAP. XIII.

OF A LUXATION OF THE HEAD.

In the first part of this book, I have already observed, that the head is secured upon the neck by two processes received into two depressions of the upper vertebra. These processes are sometimes dislocated toward the posterior part; the consequence of which is, that the nerves below the occiput are extended, the chin is fixed upon the breast, and the patient can neither drink, nor speak, and sometimes discharges his semen involuntarily. Such patients die very quickly. I judged it necessary to mention this case, not because there is any cure for it; but that it might be known by its symptoms, and if any should lose a friend in this way, they might not think it was for want of a physician.

CHAP. XIV.

OF A LUXATION IN THE SPINE.

The same misfortune attends those, whose vertebræ of the spine are luxated. For this cannot happen, unless both the medulla, which passes through the middle, and the two membranes, that go through the two processes on the sides, as also the ligaments, that secure them, be ruptured. They are dislocated both backward, and forward; both above and below the transverse septum. As they slip the one way or the other, there will be either a swelling or a cavity behind. If this happens above the septum, the hands become paralytick, a vomiting or convulsions follow, the breath is oppressed, and a violent pain and deafness ensue. If below the septum, the thighs are paralytick, the urine is suppressed, and sometimes it even flows involuntarily. Though a person does not in such cases die so quickly as where the head is luxated, yet it commonly happens within three days; for what Hippocrates has directed in a vertebra luxated externally, that the patient must be laid prone, and extended, and then a person ought to stand upon him with his heel and force it in, must be understood of those, that are but partially displaced, not of these, that are entirely luxated; for sometimes a weakness of the ligaments causes a vertebra to protuberate forwards, though it be not dislocated: this is not mortal. But it is not possible to force it back from the internal part. If any vertebra be reduced from the external side, it generally returns

again, unless, which is very rare, the tone of the nerves be restored(26).

CHAP. XV.

OF A LUXATION OF THE HUMERUS.

The humerus slips sometimes into the axilla, sometimes forward. If it has fallen into the arm-pit, the cubitus recedes from the body, and cannot be brought upward with the humerus to the ear of the same side; also that arm is longer than the other: if forward, the upper part of the fore-arm is extended, but not to its full length; and the cubitus is moved with more difficulty forward than backward.

Therefore if the humerus has fallen into the arm-pit, and the patient be young, or of a lax habit, so that the ligaments are weak, it is sufficient to place him in a seat; and to order one assistant to draw back gently the head of the broad bone of the scapula, and another to extend the fore-arm; while the physician himself sitting behind, with his knee under the patient's arm-pit, forces the humerus upwards, and at the same time presses the scapula with one hand, while he pushes the cubit to the side with the other.

But if the patient be of a large stature, or the ligaments more robust, a wooden spatha is necessary of the thickness of two fingers, and so long as to reach from the arm-pit to the fingers. In the top of it, is a small round head a little hollowed; that it may receive some part of the head of the humerus; and in three places at due distances there are two holes made for the admission of soft straps. This spatha being wrapt up in a roller, that it may hurt the less,

is applied from the fore-arm to the arm pit, in such a manner, that the head of it is put under the axilla; then it is tied to the arm by its straps, in one place a little below the head of the humerus, another a little above the elbow, and the third above the hand; to which purpose the distances of the holes are then also to be adapted. The arm being thus tied up is put over a step of a ladder, so high, that the patient cannot stand upon the ground; and at the same time his body is suffered to sink on one side, and his arm kept extended on the other; the effect is, that the head of the humerus, being impelled by the head of the spatha, is forced into its place, sometimes with a crack, sometimes without it. It appears from Hippocrates alone, that there are many other methods; but none of them has been more approved by experience than this.

But if the humerus is luxated forward, the patient must be laid on his back, and a roller, or strap put round the middle of the arm-pit, and the ends of it delivered to one assistant behind the patient's head, and his fore-arm to another; then the first must be ordered to extend the strap, and the other the fore-arm; and the physician must thrust back the patient's head with his left hand, and with his right raise the cubitus together with the humerus, and force the bone into its place; which in this case is more easily reduced than in the former.

When the humerus is replaced, wool must be put under the arm-pit; that if the bone was in the interior part, it may prevent its returning; if forward, that it may however be more conveniently rolled up. Then the roller being first carried under the arm-pit, ought

to surround the head of the bone, and passing over the breast to the other arm-pit, and from that to the scapulæ, and back again to the head of the *luxated* humerus, it must be carried round in this manner several times, till the head of the humerus be well secured. The humerus being thus bound up is better fixed, if it be drawn close to the side, and tied down to it with a roller.

CHAP. XVI.

OF A LUXATION OF THE CUBITUS.

From what has been said in the first part of this book, it may be understood, that three bones meet together at the elbow, the humerus, radius, and cubitus. If the cubitus, which is fixed to the humerus, separates from it, the radius, which is contiguous to it, is sometimes dislocated, and sometimes remains firm. Now the cubitus may be luxated in all the four different ways. If it be displaced forward, the fore-arm is extended, and cannot be bent; if backward, the fore-arm is bent, cannot be extended, and is shorter than the other; sometimes it brings on a fever and bilious vomiting; if externally, or internally, the fore-arm is stretched, but is a little bent to that part, from whence the bone has receded.

Whatever species it be, the method of reduction is the same (and not only in the cubitus, but in all the larger limbs, which are joined in the articulation by a long process) to extend both limbs different ways, till there be a void space between the bones; and then to thrust the luxated bone from that side, into which it has prolapsed, to the contrary. However the methods of extension are various according to the strength of the ligaments, and the position of the luxated bones. And sometimes the hands alone are used, sometimes other means.

Therefore if the cubitus is displaced forward, it is sufficient for it to be extended by two hands,

sometimes assisted by two straps; then some round body must be put into the bend of the elbow, and upon that, the cubitus is to be suddenly forced towards the humerus. But in the other cases the best method is so extend the fore-arm in the same manner, as was directed in a fractured humerus, and then to reduce the bones.

The remaining part of the cure is the same as in the other luxations; only this must be sooner, and more frequently opened, also more plentifully fomented with hot water, and rubbed longer with oil, and nitre, and salt. For the cubitus, whether it remain displaced, or be reduced, is more quickly surrounded by a callus than another joint, and if this grows, while the arm is at rest, it afterwards prevents its flexure.

CHAP. XVII.

OF A LUXATED HAND.

The hand too may be displaced in all the four directions. If it slips backward, the fingers cannot be extended; if forward, they cannot be bent; if on either side, the hand is turned to the opposite, that is, either toward the thumb, or the little finger, and may be replaced without much difficulty. The hand and fore-arm should be extended on something, that is hard and will not give way, the hand being prone, if the luxation was to the posterior part; and supine, if forward; if internally, or externally, it should be laid on one side. When the ligaments are sufficiently stretched, if the luxation was lateral, it must be repelled to the contrary side by the hands: but where it was forward, or backward, some hard body is to be put upon it, and pressed upon the prominent bone by the hand, which additional force pushes it more easily into its place.

CHAP. XVIII.

OF LUXATIONS IN THE PALM.

The bones also in the palm are sometimes dislocated, and that either forward, or backward. For they cannot be luxated laterally by reason of the resistance from the parallel bones on each side. There is only one indication of it, which is common to them all: a tumour in that part, to which the bone comes, and a cavity in the other, from which it recedes. But the bone being well pressed by a finger, returns without extension to its place.

CHAP. XIX.

OF LUXATED FINGERS.

In the fingers there are as many different cases, and the same signs, as in the hands. But an equal degree of force is not necessary in their extension; because the *several* bones are shorter, and the ligaments less strong. They ought only to be extended upon a table, when the luxation is forward or backward; and then compressed with the palm of the hand that thus the finger may be(27) restored to the place from whence it slipped.

CHAP. XX.

OF A LUXATION OF THE FEMUR.

Having treated of the humerus(28), what I said there may seem to suffice for the lower extremities; for there is some similitude in this case between the femur, and humerus, the tibia, and cubitus, the foot and hand. However something must be said in particular about these.

The femur is protruded in all the four ways; most frequently to the internal part, next externally, very rarely forward, or backward. If it be luxated internally, the leg is longer and turned round externally more than the other; for the toes point outward. If to the external part, it is shorter and bowed inward, and the foot turns the same way; the heel in walking does not touch the ground, but the person rests upon the extremity of the sole of the foot; and in this case, the leg sustains the superior part of the body better than in the former, and less needs the help of a staff. If forward, the leg cannot be bent, and being extended is as long at the heel as the other: but the toes are turned less inward; also the pain is most violent in this case; and the urine very liable to be suppressed: when the inflammation together with the pain have ceased, such patients walk pretty well, and their foot is straight. If the luxation be backward, the leg cannot be extended; and is shorter; also in standing, the heel does not reach the ground.

But there is a great danger attending the femur, that it be either difficult to reduce, or slip out again after it is replaced: some affirm it always comes out again; but Hippocrates, and Diocles, and Philotimus, and Nileus, and Heraclides the Tarentine, very celebrated authors, have affirmed, that they have made a perfect cure. Neither would Hippocrates, Andreas, Nileus, Nymphodorus, Protarchus, Heraclides, and a certain artificer too, have contrived so great a variety of machines for extending the femur in this case, if it were to no purpose. But as this is a false opinion, so on the other hand it is true, that the ligaments and muscles there being very strong, if they retain their natural firmness, they will hardly admit of a reduction; if they do not, they do not hold it fast, when reduced.

Therefore trial must be made, and if the limb be but tender, it is sufficient to make an extension by one strap at the groin, and another at the knee; if it be muscular, the extension will be better made by tying these straps to strong sticks; and then putting the lower ends of the sticks against a fulcrum, and pulling the upper ends with both hands. The extension of the limb is still more strong upon a bench, that has axes at both ends, to which these straps are tied; which being turned as in a wine-press, by persevering, they will not only extend, but even break the ligaments and muscles. Now the patient must be laid upon this bench, either prone or supine, or on one side, so that the part, into which the bone has slipped, be always uppermost, and that, from which it has receded, lowermost. When the ligaments are extended, if the bone is luxated

forward, some round body must be put upon the groin; and the knee must suddenly be drawn towards the body, in the same manner, and for the same reason, as is done in the arm; and if the femur gives way to the flexion, it is reduced.

But in the other cases, where the bones have receded a little from each other, the physician ought to force back the prominent part; and an assistant to push the hip in a contrary direction. When the bone is reduced, there is nothing different required in the treatment, except confining the patient longer to his bed; lest if the femur be moved, while the ligaments are too lax, it may slip out again. However it may be secured by keeping the middle or upper part of the joint in some canaliculus(29).

CHAP. XXI.

OF A LUXATION OF THE KNEE.

It is very well known, that the knee slips inward, outward, and backward. Most authors have written, that it is not displaced forward. And that may appear very probable; as in that place the patella is opposed to it, and likewise keeps in the head of the tibia. But Meges has given an instance of a person cured by him, where the luxation was forward.

In these cases the ligaments may be extended by the same means, which I recited in the femur. And where the bone is luxated backward, it is reduced in the same manner, by some round body applied to the ham, and drawing up the leg. In the other cases the hands are only to be used, and then the bones are at the same time forced different ways.

CHAP. XXII.

OF A LUXATED ANCLE.

The ancle is luxated in all directions. When it is inward, the sole of the foot is turned outward. When the contrary case to this happens, there is also the contrary symptom. But if it be luxated forward, the broad tendon behind is hard, and tense; and the foot turns downward. If backward, the heel is almost hid, and the sole of the foot is enlarged. This luxation is reduced by the hands; the foot and leg being first extended different ways. And in this case also the patient must be kept longer in bed; lest the ancle, which sustains the whole body, yield beneath its load, and be forced out again before the ligaments have recovered their strength. And at first low shoes must be used, lest the binding hurt the ancle.

CHAP. XXIII.

OF LUXATIONS IN THE SOLES OF THE FEET.

The bones in the soles of the feet are luxated in the same manner as those in the hands; and are reduced by the same methods; only it is necessary to put a roller round the heel; lest as the middle part and extremity of the sole require to be bound, the ancle being left free, may receive the redundant matter, and thus come to suppuration.

CHAP. XXIV.

OF LUXATED TOES.

In the toes there is nothing else required, than what has been directed before in the fingers.

CHAP. XXV.

OF LUXATIONS ATTENDED WITH A WOUND.

These are the methods to be taken, when the bones have been displaced without a wound; but they are often dislocated, and the part wounded at the same time; and here the danger is great, and so much the greater, as the limb is larger, and the ligaments, or muscles that hold it, stronger; and therefore, from the arm and thigh bones there is danger of death: and if the bones are reduced, there is no hope; and yet when they are not replaced, there is also some danger. In both, the event is the more to be feared, the nearer the wound is to the articulation. For Hippocrates has asserted, that no bone could in this case be safely reduced, except the fingers and toes, and the bones of the feet and hands; and that even here great caution must be used, lest it suddenly destroy the patient. Some have reduced both arms and legs; and to prevent gangrenes and convulsions (which in such cases often terminate in speedy death) they let blood from the arm. But not even a finger (where, as the malady, so also the danger is least) ought to be reduced, either while there is an inflammation, or afterwards, when the bones have continued long luxated. And farther, if after the reduction of the bone, convulsions come on, it must be immediately put out again.

Now every member that is at once wounded and dislocated, and continues unreduced, ought to lie in

the posture easiest to the patient; provided it neither be moved nor hang down. In every case of this kind the cure is much promoted by long fasting; and then the use of those methods prescribed before. In fractured bones, where there is a wound, if the naked bone project, it will always prevent its healing; therefore, the prominent part must be cut away, and dry lint applied, and medicines not greasy; till the greatest degree of soundness attainable in such a case be restored; for it both leaves a weakness behind it, and the part is covered with a thin cicatrix, which must of necessity be ever after greatly exposed to injuries.

NOTES

TO

BOOK I.

1. *Their gods.* Though Æsculapius lived so near to the time of the Trojan war, yet the Greeks knew very little about him. The superstition of those times gave him a place among the gods: and as he was adored under the character of the genius of physick, it came at last to be doubted whether he was ever a mortal. This blind devotion, however, produced one happy consequence: his priests were obliged, for their own interest, to make themselves masters of all the physic that was known in that country, that they might be qualified to give advice to the people, who applied to them. Their prescriptions passed for the suggestions of the god; their cures for miraculous. But both diseases and remedies were carefully recorded.——Strabo tells us, that from these registers in the temple of Æsculapius at Cos, Hippocrates formed his plan for a proper diet.——*Strabon. Geograph. lib. 14. p. 657. Edit. Casaub.*

2. *Immortal gods.*) That this was really the opinion of the ancients, may be seen by many passages in Homer's poems, where he mentions Jupiter punishing wicked nations by diseases, as well as famine, wars, and other calamities.

3. *Principles.*) Some of the ancient philosophers maintained, that the human body, as well as the whole material system, was composed of four principles or elements, viz. fire, air, earth, and water.

4. *Vessels*, in the original, *vena*; which is used by our author as a general term for arteries and veins. In this place it is evident he means arteries; for mentioning the same opinion again, page 16, he says, *At si sanguis in arterias transfusus*; and he often speaks of the motion of the veins, where, it is plain, he

intends the pulsation of the arteries. *Arteria* he uses to signify the wind-pipe, and likewise the sanguiferous arteries, as in chap. 1. of book 4. *Circa guttur venae grandes, quae sphagitides nominantur; item arteriæ, quas carotidas vocant.*

5. *Distribution of the same.*) The word in the original is *digero*, which, by the modern physicians, is generally applied to the digestion of the aliment in the stomach. But that is what our author never intends by it. *Digero* he uses in three different senses; 1st, for the distribution of the aliment from the stomach (after its concoction) to all the other parts of the body, which appears to be his meaning here: 2dly, for any evacuation made by the pores of the skin, as *sudore digerit* in the end of the ninth chapter of this book: 3dly, for discussing any collection of humour, so as to prevent its coming to suppuration; *vel avertenda concurrens eo materia*, *vel digerenda*, *vel ad maturitatem perducenda est: si priora contigerunt*, *nihil praeterea necessarium est.* Lib. vii. c. 2. ad fin. p. 408. Unless we restrain the meaning of this last passage to discussing by the skin, which would bring it under the second sense.

6. *Asperity.*) Ten of the most ancient editions mentioned by Morgagni[ID] read *contactum*; but as that seems to convey no convenient sense, others prefer *contractum*, which is found in one of the manuscripts, and suppose it to mean asperity, a sense which it is not found to bear elsewhere; and therefore, Constantine boldly enough substitutes *confractum*, which he thinks agreeable to this interpretation. The same reason may, perhaps, have led him to that alteration, as induced the others to explain *contractum* by asperity, that it might stand in opposition to smoothness. For my own part, though *confractus* is not found in any other classic, yet I have given this translation, because I can find no other sense of the place, as it now stands. If I durst offer my own conjecture, ἀπόζυμος γαστὴρI would rather chuse to read *anfractum*, which, I think, is applicable to the windings of some of the internal parts.

7. *Lippitudo* is used by Celsus, and the more ancient Latins in the same sense as the Greek term *Ophthalmia*.

8. *Abdomen.*) The word in the original is *uterus*, which our

author generally uses for the cavity of the abdomen.

9. *Indeed may be opened.*) The text in Almeloveen and Linden runs thus, *Nam ne uterum quidem ut nihilominus aerem contineat*, &c. The particle *ne* is not in the older copies or the MS. of Morgagni[IE], and as it spoils the sense, I have omitted it. The same older copies read *qui minus ad rem pertineat*, instead of *ut nihilominus aerem contineat*; but as the first can bear no sense at all in this place, and the other has not the elegance of Celsus, I have taken no notice of either; and as the connection is perfect without any addition, I suspect both to have crept in from the margin.

10. *Praecordia.*) This word frequently occurs in Celsus; and he seems to use it in two senses: 1st, For the cavity of the thorax, as lib. 4. c. 1. *At sub corde atque pulmone transversum ex valida membrana est septum, quod è praecordiis uterum diducit.* 2dly, For the hypochondria; for which see several passages in the first eight chapters of the second book, where he considers the symptoms of distempers from the external appearance of the præcordia; by which word, in those passages, he translates the Greek term ὑποχονδρίον in Hippocrates; the derivation of which demonstrates it to be below the Cartilago Xiphoides.

11. *Quantity of flesh.*) I shall not trouble the reader with several various and opposite opinions of this case, by different commentators; it will be sufficient to recite the opinion of Morgagni[IF] (which appears the only probable one) and the reasons with which he supports it. In his anatomical lectures he explained it as an inverted uterus, which he says resembles nothing more than flesh, and is quickly seized with a gangrene, for the reasons given by Ruysch. Observ. Anat. Chir. 10. and thus[IG] Celsus, in the description of a gangrene, mentions *siccam et aridam carnem*; and Boerhaave says, an inverted uterus is seized with a gangrene in three hours after its inversion, which agrees with *intra paucas horas* in this place.——The ingenious author, first mentioned, confirms this explanation by a case that occurred to a surgeon, who, struck with the novelty of it, came immediately to ask his opinion: upon his shewing the surgeon Ruysch's delineation of an inverted uterus, he confessed it to be perfectly similar.——

Morgagni advised him to run back and replace it immediately, which he did in an hour after its inversion, and the lady was cured.

12. *Nervus.*) Though it might be doubted, whether the ancients comprehended under this word, what is now properly called a nerve, yet, it is certain they used it for a tendon, or ligament; which so evidently appears in many passages of Celsus, particularly the eighth book, that it is quite superfluous to instance any single example. And this is agreeable to the signification of the Greek word νεῦρον, a chord or string; and thus Hippocrates says, "The nerves are dry and void of any cavity, and grow to the bone, and have most of their nourishment from thence; they are nourished also from the flesh, and their colour and strength is in a middle degree between bone and flesh." Hippocrat. Opera, sect. 4: lib. de loc. in homin. p. 409. ad finem. That I might not seem to determine, what may be thought doubtful, I have generally retained the author's term *nerve*, and left the application to the reader's judgment; but in some places, particularly in the eighth book, where the meaning was very evident, and the word νεῦρον*nerve* would have been harsh to an English reader, I have rendered it tendon, or ligament, as the connection appeared to require.

13. *Another loose.*) The word in the original is *fluens*, that is a disorder attended with some discharge.

14. Our author means here the ἀχμὴ of a disease, after which it increases no more.

15. *A dinner also.*) Mercurialis conjectures that the custom among the Romans of making but one set meal in the day, arose from their spending so much time in cleaning their bodies, and going through the several processes at the baths, that they had hardly time left even for one meal; considering that besides all these operations, they had each his own private business to transact, and their bathing was too sacred to be omitted. Hieron. Mercurial. de Art. Gymnast. lib. i. cap. 11.

16. *Iatroalipta.*) This is a Greek word, and signifies *a physician*

that anoints. There was always one or more of these attending a gymnasium, to whose province belonged every thing that related to unction. To their care was committed the strength and complexion of the body; thus Cicero in an epistle to Lentulus, says, *Sed vellem non solum salutis meae, quemadmodum medici, sed etiam ut aliptae, virium et coloris rationem habere voluissent*. It is probable, that at their first institution, they were acquainted with the nature and effects of their operations on human bodies; and according to Plato, de Legibus, lib. xi. they were either physicians, or in many things equal to them. But Galen complains, that in his time they were ignorant. For a more particular account, see Mercurial. de Art. Gymnast. lib. i. cap. 12.

17. *Sometimes the warm bath*, &c.) No practice was ever more universally followed, than that of bathing among the ancients. The first design of it was certainly the preservation of health; but, as riches and luxury increased among both Greeks and Romans, the edifices for this purpose grew proportionably more elegant and sumptuous. The construction of baths and their several appurtenances must have been so well known, when in use, that it is not to be wondered we have so imperfect accounts of them transmitted to us. Without entering into any of the disputes about the form or use of several of their parts, I shall subjoin what seems to be generally agreed to by all, and may serve to explain any passages in our author which have relation to them.

In the baths there were five apartments—One, called *Tepidarium*, was a room close all round, and rendered tepid by dry vapours from a fire. Persons staid here so long as to rarify their humours, that they might not go unprepared into the hotter rooms. The *Calidarium*, or *Laconicum*, was in all things similar to the foregoing, only the heat was greater. Some affirm, that in both these apartments there were vessels of water, of the same temperature with their air. Next followed the *Solium*, where was the hot bath. People sat here, sometimes, without going into the bath, and had water poured over them, as Celsus in several places prescribes. The *Baptisterium*, or *Piscina*, was the receptacle for cold water, for bathing and swimming in. There was also an apartment called

Frigidarium, concerning which there is a dispute, whether it contained water or not; Mercurialis says, 'Some have imagined there was water here for those who were fond of swimming; but there is no mention of water in authors.'—He adds, 'that it was contrived for those that came immediately from the *Tepidarium* and *Calidarium*, and wanted to enjoy a cool air.' Pliny[IH] the younger mentions a *Frigidarium* in a bath at his villa, where there was water for swimming in; but this may have been a new mode, and not known in Celsus's time. Whether this apartment contained water or not, I shall not determine; but it would appear from authors, that either the air or water here was of a mild temperature, not quite cold, nor yet so warm as the *Tepidarium*. To[II] these several parts were subservient; the *Aquarium*, in which a large reservoir was built for holding water brought from the aqueducts and elsewhere.—The *Vasarium*, where the necessary vessels were placed, and where the water was heated; this stood above the *Hypocaustum*, or stove.

Seneca[IJ] has shown us of how great importance the Romans esteemed the baths in the time of the republic, when he observes, 'What pleasure there would be in going into the baths, which a person knew to be tempered by the hand of Cato in his edileship, or Fabius Maximus, or one of the Cornelii—for, says he, this function the most noble ediles performed, of inspecting those places frequented by the people, and requiring cleanliness and a convenient and salutary temperature; not such as has been lately brought into use, in which the heat is so violent, that one would imagine a slave convicted of some crime were condemned to that punishment.'

These several parts of the baths were variously used, according to the case of the person, and the intention pursued. Where no epithet is added to the bath in the text, it will appear from the connection, generally, that the hot bath is to be understood. For any further particulars relating to the baths, see Mercurial. de Art. Gymnast. lib. i. c. 10.

18. *Gravedoes.*) I have here retained the original word, because we have no one English term which will answer to it. See its

symptoms enumerated, lib. iv. c. 4.

19. *In one that has laboured little.*) According to the reading of Almeloveen and Linden, which is, *In eo, qui minus laboravit, et bene concoxit, remissior: in eo, qui assuetus est, et minus concoxit, amplior*, Celsus gives a precept contrary to what he had directed before, p. 22. l. 2. *Qui parum concoxit, quiescere debet.* In justice, therefore, to our author, I restore with Morgagni[IK] the old reading, *In eo, qui minus laboravit, et bene concoxit, amplior: in eo, qui fatigatus est, et minus concoxit, remissior*.

20. *Salt fish, salsamentum.*) By this is generally understood fish salted and dried (resembling our dried ling), for in several ancient authors it is ordered to be macerated before boiling; and it is often mentioned as made of fish: but it would appear from Strabo[IL], that the same name was also given to flesh cured in like manner; for he mentions a ταρχεία, or *salsamentum*, made of pork, amongst the Sequani, which was brought to the Roman market.

21. *Sexes.*) Our author here proposes the difference arising from the sexes, as one of the subjects to be treated of, but no notice is taken of it in the subsequent part of the chapter: so that this word must either have been interpolated, or, as Constantine observes, Celsus must have forgot it, (which is not probable,) or his observations upon that article may be lost, by the carelessness of transcribers.

22. *Frequent yawning.*) As this whole paragraph relates to people that are fatigued, it renders the old reading more probable, *fatigatio*, instead of *oscitatio*, especially as it follows, that a change of labour relieves from fatigue; unless we reckon yawning as one of the symptoms of lassitude; Morgagni[IM] prefers *fatigatio*: but as the difference is of small importance, I have not departed from Almeloveen.

23. *Warm water.*) It appears a little doubtful, why our author should mention this, as he adds *the bath* immediately after: unless by *balneum* he means all the processes at the bath; and by the other, bathing in warm water alone.

24. *Mulse* was made of two parts of wine, and one of honey. Dios. lib. v. cap. 790. But from Celsus, it would appear that

the proportions were arbitrary: for he says, Mulse is more nourishing the more honey it contains. Lib. ii. cap. 18.

25. *Hyssop.*) Hippocrates thus prescribes it for a vomit to corpulent men; let about a gill of powdered hyssop be given to drink in a gallon of water, adding a little vinegar and salt, to make it as pleasant as possible; and let this be drunk at first gradually, and afterwards more quickly. Lib. de Salub. Vict. Rat. p. 338. Edit. Gen. 1657.

26. *Lotus.*) There are several species of this mentioned by ancient authors; but the particular kind intended here seems to be the lotus Ægyptius, growing in the water, with a stalk resembling the *cyamus*. It has a root like a quince, and is eaten both raw and boiled, and in the last way, in quality, it is like the white of an egg. The Egyptians make bread of its head, which resembles poppy.—See Dioscorid. lib. iv. cap. 696. and Plin. Hist. Nat. lib. xiii. cap. 17 and 18.

27. *The body is rendered humid.*) Lommius asserts the copies to be every one corrupted in this place. From the moisteners he strikes out the following,—*continuing awake, long and brisk walking, morning exercise without eating after it,*—as unworthy of our author. And for the same reason, in the list of dryers, inserts *watching and unction, without bathing in cold water*. This I thought proper to mention in a note, but did not chuse to take so great liberties with the text against the authority of all the other copies, but leave it to the judgment of the learned reader, though I rather incline to the alteration proposed. Vide Lomm. Comment. de Sanitat. tuend. p. 218 and 219.

28. *Apples, Poma.*) Under this Celsus includes all the apple-kind; and he elsewhere comprehends in this genus, cherries, mulberries, &c. so that he seems to take in all the pulpy fruits, whether they have stones or not. Wherever he intends what we particularly call apples, he makes a distinction, as *Quæque propriè poma nominantur*, lib. ii. cap. 18.

29. *Salt wine.*) “Wines are prepared with sea water in different ways; for some, immediately after gleaning the grapes, mix sea-water with them; others expose them to the sun, and thus tread them, adding sea-water. Others again, make the grapes

into raisins, and macerate them in vessels with sea-water, and thus tread and press them. Wine made in this way is sweet: but there are others prepared of a more austere taste[IN].”

Pliny tells us, That the properties of this wine were first accidentally discovered by a servant stealing some wine, and filling up the vessel with sea-water[IO].

30. *Defrutum* is sweet must, boiled to one half its quantity, done to imitate honey. Plin. lib. xiv. cap. 9. Columella says to one-third, which Pliny calls sapa. Ibid.

NOTES

TO

BOOK II.

1. *Not but in any weather.*) Morgagni observes, that in the original, it should be read, *Non quod non omni tempore, omni tempestatum genere*; so that the translation should run, *Not but in any season, and in any weather*. What renders this correction more probable is, that a few lines before, Celsus had said, *Quæ tempora anni, quæ tempestatum genera*.—These two words, though omitted by Juntas and Cæsar, and after them by Linden and Almeloveen, are nevertheless extant in the MS. and the other editions he perused. Ep. 6. p. 142.

2. *To be most apprehended in the spring.*) The words in the original are, *Vere tamen maxime*, &c.—As there is no opposition between this observation and any going before, if the reading be right, there must be a chasm in the text.—But I suspect *tamen* ought to be *quam*, and have rendered it accordingly.

3. *Dropsical disorders. Aqua inter cutem.*) This is a term used by our author, to signify a slight species of the *leucophlegmatia*, or the first appearances of a dropsy. See the beginning of the 21st chapter of lib. iii.

4. *Braces a sound body. Spissat sanum corpus.*) Literally, it thickens, or compacts a sound body.—The interpretation here given is confirmed by opposite effects of the south wind, a few lines after, *Corpus efficit hebes, humidum, languidum*.

5. *If the temples be strait bound.*) This happens, when there is no perspiration from them.

6. *And pubes be full.*) Linden and Almeloveen here have *plana* —But I chose rather with Constantine to read *plena*; both

because the appearance is then exactly opposed to what follows in the IV. chapter, as a bad symptom in those parts, and because it corresponds better with Hippocrat. aphor. 35. sect. 2.

7. *At the end of a distemper.*) Celsus takes this from Coac. Prænot. 601. which if he had translated literally, he would have said, instead of *Sub fine morbi, ad crisim*; which shows his great care to avoid the Greek terms of art, and render the knowledge of medicine as easy as possible to his countrymen.

8. *Betwixt the fourth hour.*) The Romans divided the day from sun-rise to sun-set into twelve equal parts, or hours; the measure of which therefore differed in proportion to the length of the day. The sixth hour was our twelve; it is easy to reckon all the rest by their distance from that middle point. When they mention hours as a general measure of time, they mean equinoctial hours, as Plin. lib. xviii. cap. 25.

9. *Strigments*, *Strigmenta*.) I find the moderns differ about the signification of this word; some taking it for the sordes absterged from the skin at the baths or palestræ, other for abraded fibres from the guts. It is agreed on all hands, that Celsus by this word translates ξύσματα in Hippocrates, and so it is rendered by Foesius.—Though ξύσμα will bear either of these interpretations, yet it seems to favour the first, that not only Erotianus explains it so in his lexicon to Hippocrates; but Celsus himself, in the sixth book, c. 6. orders a composition to be brought to the consistence of *strigmentum*.

10. *Many ways.*) Instead of *pluribus modis*, most editions have *pluribus morbis*. However, either of them will agree with what goes before and follows.

11. *And if there is not a discharge of blood from the nose, &c.*) In Almeloveen and Linden the reading is thus, *Ac si inter ipsa initia sanguis è naribus non fluit, circa aures erumpit.* —Morgagni[IP] here observes, that this does not agree with the prænotion, no. 6. whence this whole context is taken; and also that these words, *Sanguis è naribus*, are not in the margin, nor in any of his editions; and that Constantine and Ronsseus have in the margin *Initia aut viscera*, while all of them write in the

text *Ipsa ulcera*, some *Non fluit*, others *Non fuit*; which the most ancient editions and the MS. have, and besides *viscera*.—So that, upon the whole, he would incline to read *Ac si inter ipsa viscera non fit, circa aures erumpit*, viz. And if it is not formed amongst the viscera, it breaks out about the ears.

12. *If it grow less.*) I have chosen to follow the older reading, which omits the negative particle, because it seems plain, that our author is here speaking not of the body, but the belly, in this and the two preceding articles; the sense determines itself. —If the belly yields to purging medicines or spontaneously discharges soft and figured excrements, and the effect of one or both appears in the diminution of its bulk.

13. *Is hysteric.*) The original is, *Quæ locis laborat*; which by itself is pretty obscure, but the sense here given appears just, from comparing it with aphorism 35. sect. 5: Γυναικὶ ὑπὸ ὑστερικῶν ἐνοχλουμένη, ἢ δυστοκούση, πταρμὸς ἐπιγινόμενος ἀγαθόν.—*Mulieri uteri strangulatu vexatæ, aut difficultate partus laboranti, sternutatio succedens bono est.*

14. *Of that kind that breaks outward.*) The text in this place in Almeloveen and Linden appears to be corrupt, who read, *At ex suppurationibus hæ pessimæ sunt, quæ intus tendunt, sic ut exteriorem quoque cutem decolorent: ex his deinde, quæ in exteriorem partem prorumpit; tum quæ maximæ, quæque planissimæ sunt*. I own I could make no sense of it, that I thought tolerable. The plural number is used both in the first and last members of the period; and the nature of the distributor seems to require the same number to be used here. For this reason I have made but two members, and read the latter thus: *Ex his deinde quæ in exteriorem partem prorumpunt, quæ maximæ, quæque planissimæ sunt.* By which small alteration we have an observation worthy of our author, and consonant to the parallel place in Hippocrat. Coac. Prænot. no. 281. where Foesius quotes this passage as here proposed.

15. *In the middle of the body.*) An ascites.

16. *Puffed up as it were by fermentation, &c.*) Foesius observes in a note upon lib. ii. prædictor. 31. from whence this context is closely copied, that ἀπόζυμος γαστὴρ, *fermentatus venter*, is

an unusual kind of expression, which makes him suspect the reading should be ὑποξήρους, which he thinks is supported by Galen in his Exegesis, who says that ὑποξήρους περὶ γαστέρων signifies ταπεινοτέρας *aut* προεσταλμένας, that is *dried up*, *extenuated*, *contracted*. Foesius thinks too, that Celsus by mistake has read λιπαράς for ῥυπαρὰς, *fat* for *sordid*. But as this is only conjecture, it is much more natural to suppose, that λιπαρὰς was the true reading, and that ῥυπαρὰς had crept in since the time of Celsus.

17. *Therefore an intermission*, &c.) In Almeloveen the reading is thus, *Expectanda ergo intermissio est: si non decedit, cum crescere desiit: si neque remissio speratur, tunc quoque*, &c.—[IQ] Morgagni observed this reading to be suspicious, as it was not probable our author would have mentioned its stop before its remission; and upon examining his editions, he found this reading in them all, *Expectanda ergo remissio est. Si non decrescit; sed crescere desiit, tunc quoque*, &c. i. e. therefore a remission is to be waited for. If it does not remit, but has ceased to increase, in that case the only, &c.

18. *Already hurt.*) I have here rejected the word *quam* upon the authority of the marginal reading; because it appears to me to spoil the sense, which without it is very proper.

19. *Penecillum.*) [IR] Fabricius ab Aquapendente makes *penecillum* a tent made of scraped lint. I think he is right as to its form and materials; but it often occurs in Celsus, where it is used as a pledgit, and not introduced into any cavity, as in this place. Notwithstanding, in other places, it exactly corresponds to a tent, as lib. vii. cap. 4. when used to a fistula.—For this reason I have chosen to retain the original word.

20. *Scales of copper.*) These are scales that fly off in hammering red-hot copper. They were washed and rubbed in a mortar, to free them from any adhering sordes, and when cleaned and dried, put by for use. Dioscorid. lib. v. cap. 863.

Celsus added here, called by the Greeks λεπὶς χαλκοῦ, which he had literally translated by *squama æris*.

21. *Sea spurge*, *Lactuca marina*.) Our author elsewhere says, that this herb by the Greeks is called tithymalus—of which

Dioscorides enumerates seven species, all similar in their virtues, amongst which is the παράλιος or maritime kind here mentioned. Dioscorid. lib. iv. cap. 747.

22. *Hydromel* was made of two parts of water to one of honey. Dioscorid. lib. v. cap. 791.

23. *Ptisan* was made by steeping barley in water, till it swelled; then drying it in the sun; afterwards beating it, till the husk came off; then grinding it; the meal was boiled in water, dried in the sun, and then set by. When used, it was boiled up again with water; and this was what they called the *cremor* or *succus ptisanæ*.

24. *A decoction of vervains.*) What herbs our author means by *vervains*, he shows in chapter 33d of this book.

25. *Concerning friction*, &c.) In the text, *De frictione et gestatione adeo multa Asclepiades*, &c. which, though it be the reading in most copies, must necessarily appear erroneous by considering what follows; and therefore I have taken no notice of these words *et gestatione*.

26. *Digestion.*) See note at lib. i. p. 6.

27. *A prop is to be put under one foot*, &c.) In Linden and Almeloveen the reading is, *At certe uni pedi lecti fulcimentum subjiciendum est.*—But all the editions in the possession of Morgagni[IS] and the MS. have *Funiculus subjiciendus est.* A cord is to be put under one foot, &c. And in this way Mercurialis reads it, when he quotes this passage de Art. Gymnast. lib. iii. cap. 12.

28. *Clibanum* was the name of a particular kind of oven among the Romans. As it is here mentioned, beside the laconicum or hot-room at the bath, he probably intends by it a stove placed in a common room so as to heat it.

29. *Fever.*) Our author here means, either an acute continued fever, or the paroxysm of an intermitting one; as will appear by the following paragraph.

30. *Bottles filled with hot oil*, *Utriculi.*) Their bottles were made of leather. The nearest to this kind of practice among the

moderns are the tin cases made in different shapes, and adapted to the abdomen, breast, or joints, filled with hot water.

31. Lentils.

32. *The Cetus.*) Cetus is generally translated *whale* in English; but it cannot be understood of what we call a whale, but is a general name for all the larger fishes that are viviparous.

33. *Particular kind of bread*, *Opus pistorium*.) The English reader will perceive, by the ingredients mentioned, that there is no such bread in modern use, and consequently no proper name for it. Pliny mentions the same composition. lib. xviii. cap. 11.

34. *Phœnicopter.*) This signifies a bird with purple wings; its tongue was of a delicious taste. Plin. lib. x. cap. 48.

35. *Snails.*) Cochlea, without distinction, is used to signify a snail and periwinkle, which last is only the marine snail. The Romans were at prodigious expence and trouble, to feed their snails to an almost incredible size.

36. *Conchylia*, according to Pliny, in different places, a delicate shell-fish, the greatest plenty of which came from the river Indus, of the same nature and properties with the purple fish.

37. *Siligo* was a kind of wheat, very delicious to the taste, extremely white, growing best in moist ground. Plin. lib. xviii. cap. 8.—The same author says it never grows so ripe as the other kinds; for when it is suffered to stand too long, it drops its grains, Id. ibid. cap. 10. Columella says that all wheat in a watery soil, after the third sowing, turns into siligo. Lib. ii. cap. 9.

38. *Than the mealy*, *Fragilia.*) Which translation appears to be just, from its opposition to *succosa*.

39. *Thrush*, *Turdus.*) The Romans included several birds under this name.

40. *Salsamenta*, which are salted and dried. Vide note at chap. 2. book i.

41. *Lacertus et aurata.*) I have chosen rather to retain the Latin appellations of these fish, and several more, than to follow the

conjectures of the moderns, where they are not agreed. *Aurata* is taken for the *gilt-head*, *corvus*, *a cabot*, *oculata*, *eye-fish*, resembling a lizard, *plani*, *flat fish*, or *the turbot kind, lupus* some will have *the pike*, others *sturgeon*. *Mullus*, *barbett*, or *mullet*.—See Pliny who describes them.

42. *Four footed animal.*) I have here rejected the particle *vel*, according to the older reading; because our author would never say, *A quadruped or any animal that is sucking*, &c. since no other sucking animals are used for food but quadrupeds.

43. *Soft or sorbile.*) The first by Dioscorides is called ἀπαλὸν, and the second ῥοφητὸν. Humelbergius in his notes upon Apicius de re Coquinar. takes the first to be eggs boiled soft without their shell, by us called poached eggs.

44. *Alica* is reckoned among the vernal seeds. It is a species of wheat which degenerates after being sown in soils not proper for it, as in Africa, where it has the name of zea. It is ground to meal, and the husks taken from it, and then chalk is added to it, which renders it exceedingly white and soft. The best chalk for this purpose is found between Puteoli and Naples. A common way of counterfeiting it is to take the largest and whitest grains of wheat, and after parboiling these, and drying them in the sun, to sprinkle them, and after drying a second time, to grind them. Plin. lib. xviii. cap. 7. and 11. The same author says, this is an invention of the Romans, and not very old, unknown to the Greeks, otherwise they would not have bestowed so many encomiums upon their ptisan; because it was not mentioned by any of the followers of Asclepiades, he believed it was not used in the time of Pompey the Great. Id. lib. xxii. cap. 25.

45. *Pulse.*) Pulticula is a diminutive of puls, which was a very ancient kind of food, made of meal, water, honey, or with cheese and eggs boiled, which, according to Pliny, the Romans used for many years, before they knew bread.

46. *Passum.*) Columella's method of making passum (from Mago) is this—Gather the early grapes thoroughly ripe, and throw away what stones are either dry or rotten. Expose them to the sun in the daytime, and cover them at night from the

dew. When they are dried, take out the stones—then put them into a cask, and add as much of the best must as to cover them; when the grapes are macerated and filled, on the sixth day take them out and press them, and thus draw off the passum. Columell. lib. xii. cap. 39. This resembles nothing in modern use so much as raisin wine. Other inferior kinds were also prepared, for which see Columella in the same chapter, and Pliny, lib. xiv. cap. 9.

47. *Starch*, *amylum*, so called from its being prepared without a mill. Though the process among the ancients differed a little from the present, yet the effect of the operation is the same.—See Dioscorid. lib. ii. cap. 311.

48. *Tragum* was made from wheat in the same manner as ptisan from barley. Plin. lib. xviii. cap. 7.

49. *Wombs of hogs.*) This amongst the ancients was accounted a delicate dish; it is now entirely disused. The butchers give that part the name of the bearing bag.

50. *Garum* was a liquor made of the intestines of fish macerated with salt. So that it was a kind of sanies of them in their putrescent state. It was formerly made of the fish, which the Greeks called garos; afterwards it was prepared from a great many more, so that the kinds of it are almost infinite. It bore a higher price than any thing, except unguents. One kind was of the colour of old mulse, and so sweet and thin, that it might be drunk. Plin. lib. xxxi, cap. 7 and 8.

51. *Bulbusses.*) The ancients had several kinds of bulbusses. [IT]Dioscorides mentions the *bulbus esculentus*, which he says is known to every body; it is good for the stomach and belly, of a reddish colour, and brought from Africa. But the bitter and squillaceous kind is fitter for the stomach, and helps concoction. All of them are acrid and heating. Pliny, lib. xix. cap. 5. reckons up many species. Most naturalists agree that they are not known now.

52. *Pancake*, *Laganum.*) This differed a little from our pancake, as they added to it cheese, pepper, saffron, cinnamon, &c.

53. *Those called crustumina*, &c.) Pliny observes that such fruits

as these have taken their names, either from their planters, countries, or the persons whose taste they pleased. All these pears and apples are reckoned among the best kinds by him, lib. xv. cap. 14. and 15. as also by Columella, lib. v. cap. 10.

54. *Wormwood.*) In Linden and Almeloveen the word *absinthium* is followed by *murices*, *purpuræ*, *cochleæ*, which are omitted in all [IU]Morgagni's editions, except Ruellius and the MS. And as they appear redundant here, the same words occurring a few lines after, I have taken no notice of them.

55. *Resinated.*) This is made in different countries. It was very common in Gaul, where the grapes not thoroughly ripening by reason of the cold, the wines turned sharp, unless mixed with resin. The resin, together with the bark of the tree, was either cut small, or powdered, and mixed with the wine. Some separated the resin from it by straining, others let it stand. Such wines become sweet by age. Vide Plin. Nat. Hist. lib. xiv. cap. 20. Columella, lib. xii. cap. 23. et Dioscorid. lib. v. cap. 817.

56. *Pecten* was a name for shell fish striated like cockles.

57. *Murex and purpura.*) These fishes afforded the purple dye, and their difference was not considerable according to ancient authors, but they are not known now.

58. *Sweet bread mentioned before*, viz. chap. 18.

59. *Scarus*, taken for the *scar* or *char*, *lolligo calamary*, or *sleeve-fish*, *locustus lobster*, *polypus pourcountrel.*

60. *Pelorides.*) This was a sort of shell fish, so called from Pelorus, a promontory in Sicily, supposed by some to be cockles.

61. *Soft water*, &c.) The reading in Linden is *Aqua, omnia tenera, tepida*, &c. but it is not probable our author would have expressed himself so loosely as to say *aqua*, without any epithet. By making a small change in the order of the words, we find this properly opposed to *aqua dura*, said in chap. XXX. to bind the belly; I have therefore read with Constantine, Cæsar, Stephens, and several others, *Aqua tenera, omnia tepida, dulcia.*

62. *Torminalia.*) These, says Pliny, are the fourth species of the service fruit, and probably called so from being used as a remedy; that is, for the dysentery, as appears by the name. Lib. xv. c. 21.

63. *Sordid wool*, *Lana succida*, by Dioscorides called εἰρίον οἰσυπηρὸν. The more oily sordes it contained, it was reckoned so much the better and more emollient, upon account of its œsypum, the preparation of which will be mentioned in its proper place. The wool about the neck and inside of the thighs was most esteemed. Dioscorid. lib. ii. cap. 720.

64. *Cimolian chalk.*) This had its name from Cimolus an island in the Cretan sea. There are two kinds of it, one white, and the other inclining to purple. The first by Dale, is thought to resemble tobacco-pipe-clay; and the second fullers earth. Vide Plin. lib. xxxv. cap. 17. et Dioscorid. lib. v. cap. 950.

65. *Tarras*, *gypsum*, is a-kin to lime; for it is procured by burning a stone, which ought to resemble the alabaster, or marble. The best kind is made from lapis specularis. Plin. lib. xxxvi. cap. 24. Amongst the moderns some take this to be the calx of alabaster, others of Muscovy glass, others of the selenites.

66. *Oil of quinces.*) *Oleum vel unguentum melinum*, according to Dioscorides, was prepared by infusing and boiling some aromatics in oil, and afterwards macerating quinces in it, and thus letting them stand till the oil had imbibed the strength of the quinces. Others made it with quinces alone. Dioscorid. lib. i. cap. 56.

67. *Or myrtles.*) This is prepared by bruising and pressing the tender leaves of the black myrtle, and mixing their juice with an equal quantity of the oil of unripe olives, then boiling them together, and taking off whatever swims upon the top. Some thicken the oil first with pomegranate bark, cypress, &c. Dioscorid. lib. i. cap. 49.

68. *Of roses.*) This is made by boiling the juncus odoratus with water and oil, and after straining, fresh roses are infused in the oil: they are stirred frequently with the hands rubbed with honey, and squeezed. When they have stood for a night, they

are pressed out. A second and third kind of rose oil is prepared, by infusing the same roses in fresh quantities of oil. Dioscorid. lib. i. cap. 54.

69. *Bitter oil.*) This has probably been prepared from the wild olive; for Pliny says, such is thin, and much more bitter than what is made from the olive. Lib. xv. cap. 7.

70. *Made of far.*) Far is a species of wheat.—Columella reckons four kinds of it. Pliny says it is the hardest of all, and firmest against winter. It was called also *semen adoreum*. It was the first grain the Romans used. Pliny, lib. xvii. cap. 8, et Columella, lib. ii. cap. 6.

71. *Cyprine oil* was made from the tree called *cyprus* in Egypt, according to Pliny—And in his time some conjectured it to be the same with the *ligustrum* of Italy. Plin. Nat. Hist. lib. xii. c. 24.

72. *Oil of iris.*) The oil is first inspissated by boiling it with water, and the involucrum of the fruit of the palm tree (called by Dioscorides, spatha). When this is done, an equal quantity of bruised iris is infused with this inspissated and aromatized oil, which stands for two days and two nights, and then is strongly expressed. A more fragrant kind is prepared by inspissating the oil with balsam-wood and calamus. After expression, a fresh quantity of iris may be added, if it be desired stronger. Dioscorid. lib. i. cap. 67.

73. *Nitre.*) So much has been said by modern authors concerning the nitre of the ancients, that it would be impertinent to give a particular account of it here. The greatest plenty was produced in Egypt, in the lands which the Nile had overflowed. Most naturalists believe it to have been a native alkaline salt. Pliny says, it was adulterated in Egypt by lime, but that trick was easily discovered by putting it in water, when the true nitre would dissolve, and the lime not. Plin. lib. xxxi. cap. 10. where a long account of it may be seen.

NOTES

TO

BOOK III.

1. *Those things*, &c.) See book ii. chap. 2.

2. *Digested.*) See note lib. i. p. 6.

3. *From the inguen.*) Almeloveen would rather read *ingluvie*, or *sanguine*, than *inguine*. But these cannot be reckoned among the external causes. There is no reason to question the authority of the text, if we remember what Hippocrates has said, aph. 55. sect. 4. 'All fevers proceeding from buboes are bad, except a diary.'

4. *For these reasons others defer it.*) The translation is agreeable to the reading of Linden and Almeloveen. But Morgagni[IV] informs us, that all the editions in his possession, and the MS. too, read thus: *Ob hæc ad mediam noctem decurro, id est, finito jam gravissimo tempore, eodemque longissime distante, secuturis vero antelucanis horis, quibus onmes fere maxime dormiunt, deinde matutino tempore, quod sua natura levissima est.* That is, 'for these reasons I defer it till midnight, that is, when the most severe time is over, and the return of it is at the greatest distance, this being succeeded by the hours before day-light, when every body generally sleeps most quietly, and these followed by the morning, which is naturally the easiest period of all.'—He adds, beside the impropriety of the prescription, as it now stands in Almeloveen, when Celsus meant quite otherwise; the place is the more worthy of notice, that it shews Celsus, although not for common, yet to have practised medicine.

5. *Apply his hand to his wrist, ejus* carpo *manum admovere*.) The word *carpus* appears suspicious, as it no where else occurs in Celsus. On the contrary, in describing this part he says, *In*

manu vero, prima palmæ[IW] *pars*, &c. and Morgagni[IX] observes the old reading was *corpori*, and *carpo* only Constantine's explication.

6. *Intrita.*) We have no particular description of this food in any of the ancients, as far as I remember. By comparing their several applications of this word, I take it to be a general term for several species of compositions, the ingredients of which were rubbed small in a mortar, or softer materials macerated in liquids, as bread in wine, mentioned by Pliny, *Intrita panis e vino*, lib. ix. cap. 8.—By our author's use of it here, it plainly appears to be something light, soft, and simple, probably very like, if not the same with our panada.

7. *But if one in such a fever coughs gently*, &c.) *Siquis autem in hujus modi febre leniter tussit, is neque vehmenti siti conflictari, neque bibere aquam frigidam debet; sed eo modo curandus est, quo in cæteris febribus præcipitur.*—All this is omitted in Morgagni's MS.—Ronsseus suspected it to be interpolated, and it is not to be found in the Pinzian edition, nor the Juntine, nor Florentine.—Ronsseus's suspicion arose from considering aph. 54. sect. 4.—'Those that are troubled with dry and gentle coughs in ardent fevers, are not very thirsty.' Morgagni, Ep. 5. p. 140.—But perhaps this objection might be removed by only reading *conflictatur*, instead of *conflictari*.

8. *To twenty-four hours.*) Linden and after him Almeloveen have followed Constantine in rejecting the preposition *inter*. But the old reading seems preferable, which was this,—*Inter horas viginti quatuor et triginta sex*: that is, *The fit takes up between twenty-four hours and thirty-six*.

9. *Cleanse his belly*, *vomendo ventrem purgaret.*) It is probable by *venter* here our author means the stomach.

10. *And apply that*, *et id ingerere.*) I cannot help agreeing with Scaliger, that these words are interpolated. For supposing them to mean the application of the medicine here mentioned, yet that is particularly directed a few lines after. Besides I do not remember any instance of *ingero* bearing a sense that would answer in this place.

11. *Greeks call zesis. Et jactationem, fervoremque corporis, quem*

ζέσιν *Græci vocant.*)—All Morgagni's[IV] editions and his MS. agree in reading thus, *Fætoremque quendam odoris, quem* ὄζην *Græci vocant*. Which word from this single passage of Celsus has a place in Stephens's Thesaur. Ling. Græc. But as the sense, according to this last reading, is not near so proper, and as Linden, no doubt, had some authority for his reading, I have abode by it.

12. *Former regimen strictly.*) After the words, to which these answer in the original, there follows in Linden and Almeloveen, *Et aqua tantummodo calida, si sitis est, uti: ac tum ita nono die balneo frigus prævenire, et*. Which must appear manifestly corrupt; for this would be making the paroxysm of a quartan fever return after one day's interval: so that though the other words were retained, yet *nono* should be undoubtedly changed into *decimo*. But I have chosen rather to follow the reading of Pinzi and Junta, which is perfectly consonant with the context. *Septimo die balneo frigus prævenire, abstinere, continere se debet; si febris redierit, ducere alvum; ubi ex eo corpus conquieverit, inunctione vehementer perfricari, eodem modo sumere cibum et vinum, biduo proximo se abstinere, frictione servata. Decimo die rursus balneum experiri, &c.* This makes the directions which follow *nono die*, to belong to the *seventh*; and *decimo die* for *decimo tertio die* still preserves the regular succession of the fits. This reading is confirmed by what our author adds in the next paragraph, where he prescribes a new method to be pursued, if the fever should return upon the thirteenth day. 'Wherefore, if the distemper shall continue upon the thirteenth day, the bath must neither be tried before the fever nor after it, &c.' For if we allow the reading of Linden, &c. *decimo tertio die*, in the first paragraph, he orders bathing on this day; and in the next he absolutely forbids it.

13. *Laser.*) This was the juice or gum of a plant like the *ferula*, by the Latins called *laserpitium*, by the Greeks *silphium*. That kind, which was most esteemed, came from Cyrene, where it seems it was worn out in Pliny's time, for he tells us only one stalk was found in his memory, which was sent to Nero; he adds, that for a long time they had no other imported to them, but what came from Persia, Media, and Armenia, where it grew in abundance, but much inferior to the Cyrenean, and

adulterated with gum, sagapenum, or bean-meal.—See Plin. Nat. Hist. lib. xix. cap. 3.—Some of the moderns take this for assa-fœtida; others, among whom is Dr Lister, think it a different thing, and absolutely unknown now. I have therefore chosen to retain the original word.—See the description of it Dioscorid. lib. iii. cap. 500.

14. *Happened in the beginning.*) *Cum id initio inciderit*; thus Linden and Almeloveen read it; some older editions have *vitio*, *when that has happened by some mismanagement*; which agrees with what our author says in the end of the 15th chapter. Perhaps it might be *Initio, cum id inciderit*, that is, upon its first appearance, &c.

15. *That cannot be assigned. Certis partibus assignari possunt.*) Constantine, and after him Linden and Almeloveen, have thought fit to omit *non*, which will appear to any, who considers the sense to be manifestly wrong. Our author himself determines it in the beginning of the fourth book, where with reference to this part of his work he says, *Hactenus reperiuntur ea genera morborum, quæ in totis corporibus ita sunt, ut iis certæ sedes assignari non possint*. See Morgagni, Ep. 1. p. 25.

16. *There may be the same reason*, &c. *Nec minus dubitari potest, an alvus ducenda sit.*) The connection of this sentence with the context has an obscurity very uncommon in our author. We must observe that he is here maintaining the necessity of taking blood in phrenitic cases against Asclepiades: and after general reasons drawn from the nature of the disease, he adds an argument from the practice of that physician. He prescribed clysters in this distemper, though, as Cælius Aurelianus[IZ] observes, that was directly contrary to a principle of his own. Celsus therefore insists, that there is no reason against bleeding, that is not equally strong against clysters, which are however approved by Asclepiades. According to the exact method every where observed by our author, this argument would naturally have followed what he said of friction ordered by Asclepiades: and as it now stands after the conclusion drawn, it seems to be an after-thought. If this explication be thought unnatural, it may be otherwise paraphrased, and

connected with the following paragraph thus: *The doubt is the same with regard to clysters, as to the letting of blood, and the resolution is also the same. But after either of these, intermitting a day*, &c.

17. *Ointment of saffron.*) In preparing this they first inspissated the oil by boiling it with calamus and myrrh, and then infusing saffron in it for five days, and stirring it frequently; and on the sixth the oil was poured off clear. Others added the myrrh in powder, after the oil was poured off the other ingredients.

18. *Ajax or Orestes.*) These cases are best illustrated by the tragedies of Sophocles and Euripides, which our author seems to have had in view. Ajax enraged to see Ulysses preferred to him in the competition for the arms of Achilles, falls into madness. He resolved to revenge this affront upon the whole army. And in the night ran into the fields, where their flocks and herds were grazing, murdered the shepherds and laid about him among the cattle, taking them for men; slew numbers of them, which he imagined to be Agamemnon, Menelaus, and others, that were accessary to his dishonour. Then bound and led prisoners to his tent many more oxen and sheep to be reserved for tortures, and flogged unmercifully a great ram for his adversary Ulysses, before he put him to death. Orestes was affected in the same manner. After the murder of his mother, he fancied himself haunted by the furies, and her amongst them. He is represented as terrified by their frightful looks, sometimes reasoning, sometimes beseeching, and at other times drawing his sword to fight them. In one of these fits, like Ajax, he falls upon the cattle. See Sophocl. Ajax flagell. et Euripid. Orest. et Iphigen. in Taur. Such are the figures presented to the imagination in this species of madness.

19. *Purged in the inferior parts.*) The whole sentence, which runs thus, *Ubi ab inferiore parte purgandus aliquis est, ventrem ejus ante solvendum esse: ubi à superiore, comprimendum esse*, is taken from aph. 66. sect. 7. And after comparing them together, I conceive our author's meaning to be, that when the intention is to purge, the belly should first be moistened by

diluent liquors taken inwardly, or perhaps a laxative clyster administered to facilitate the operation. On the contrary, when a vomit is intended, the belly should be bound.

20. *Polenta* is made from barley in several ways. The Greeks pour warm water upon the grain, dry it for one night, and the day following, toast it, and then grind it. Others toast it more, and sprinkle it again with a little water, and dry it before they grind it. Others again shaking out the recent barley from the green ears, bruise it, while moist, in a mortar, and wash it in baskets, dry it in the sun, beat it again, and after it is cleansed, grind it. In whatever way it is prepared, they first of all toast three pounds of lintseed, and half a pound of coriander, with an acetabulum of salt, and mix it in the mill, with twenty pounds of barley. Those that have a mind to preserve it for a longer time, put it into earthen vessels with its own flour and bran. In Italy it is ground fine after toasting, without pouring any water upon it, and mixed up with the ingredients abovenamed and millet. Plin. b. xviii. cap. 7.

21. *Vomit spontaneously. Sponte vomere.*) That is, vomit without any emetic medicine being given.

22. *Bulbous roots.*) Aretæus mentions nothing of rubbing these over the whole body; but he recommends the small red kind, crude with pepper, and the powdered lees of vinegar, as the best cataplasm for the feet in this disorder. To which he adds this caution, that they must be frequently removed, for fear of ulcerating the parts. Lib. ii. de Curat. Acut. Morb. cap. 3.

23. *Inject by way of clyster.*) Celsus here shews that he knew it was possible to nourish by clysters, and that it was sometimes practised—Cælius Aurelianus mentions the use of clysters in this disorder, particularly acrid ones, as prescribed by the followers of Serapion, Heraclides, and Herophilus, and also by Asclepiades and Themison. But he does not give the least hint, as if any of these authors directed an injection with a view to nourishment, but only to make a derivation of the humour from the skin to the belly. Cæl. Aurelian. de Acut. Morb. lib. ii. cap. 38.

24. *Malagmas.*) These cannot according to the present division

of compositions admit of a literal translation, and therefore the original word is retained. By turning to the fifth book, chap. 17. and 18. will be seen their difference from plaisters, &c. and that they consist of various ingredients, but compounded without any heat.

25. *Catapotia.*) Most of the moderns translate this word *pills*. But our author does not limit their consistence nor form; for we find him sometimes ordering them to be diluted, sometimes of the consistence of sordes, and sometimes swallowed about the bigness of a bean, and at other times dry powders given in some kind of liquor. See lib. v. cap. 25.—Scribonius Largus defines a catapotium as a medicine, that is swallowed without being diluted, cap. 22. comp. 87. Upon which Rhodius will have them to be much the same with the bolusses now in use.

26. *Attempt that by diet.*) The reading in Almeloveen and Linden is *Alvum moliri cibo melius est*, &c. But as there was no mention of the belly before, and no proper sense can be assigned to *molior*, as it there stands, I have followed the old reading, *Sed id ipsum moliri cibo melius est*, and the rather, as Celsus immediately subjoins proper medicines for that purpose. This reading is approved by Morgagni, Ep. 6. p. 149.

27. *Nard.*) It is generally agreed, that what we now have under the name of nard, is not the ancient kind. Dioscorides says, it resembles the cyperus in its smell, has a small head, is bitter to the taste, and drying to the tongue, retaining its fragrancy for a long time. There were two species of it, one called Indian, and the other Syrian. Dioscorid. lib. i. cap. 6.

28. *Balsam.*) Our author does not distinguish what part of the balsam-tree he intends. The ancients called the juice opobalsam, the wood xylobalsam, and the fruit carpobalsam; which distinction Celsus himself elsewhere uses. Dioscorid. lib. i. cap. 18.

29. *Panaces*, or *panax*.) Dioscorides mentions three kinds of this, which are still retained by modern botanists. Considering the virtues he ascribes to each, I think it probable our author intends the *panax Heracleum*, or Hercules's all heal, from

whence the opopanax is produced. Though it is to be observed, that Pliny affirms the opopanax to be obtained from the panax Asdepium. Lib. xxv. cap. 4. P. Ægineta from the Heracleum lib. vii.

30. *Cardamom.*) It neither appears from Celsus nor Dioscorides, that the seed was in use among the ancients. Some affirm it to be the same with the modern greater cardamom. Dioscorides[JA] says, the best comes from Comagene, Armenia and Bosphorus. It grows also in Arabia and India. The best is firm, large, compact, and pungent to the smell, acrid and bitterish to the taste; it has a heating quality. By this it would seem they made use of the root.

31. *Acorum* according to Dioscorides has leaves likes the iris, but narrower, and roots not unlike to it, not growing straight, but oblique and creeping on the surface of the earth, whitish, divided by joints, acrid to the taste, and smelling not unpleasant. Lib. i. cap. 2.

32. *The flower of long and round cyperus.*) In the original *Juncus quadratus et juncus rotundus*. I shall not determine, whether what we now call *cyperus longus, et rotundus*, are the same as here mentioned. However, they certainly belong to the same class, and the virtues ascribed to the present, agree pretty nearly with those attributed to the ancient by Dioscorid. lib. i. cap. 4. and 16.—See also Dale and Schroder.

33. *Bound upon the skin.*) This seems a very odd way of using squils; the old reading appears much more just. *Utiliter etiam scilla cocta delinitur cutis. It does good also to rub boiled squils over the skin.* The same variety recurs at the end of the following paragraph, *Sicut supra dixi delinitur*, instead of *Simul super ventrem deligatur*.

34. *Frequent pimples.*) That is the smoothness or continuity of the skin is interrupted by pimples and ulcers.

35. *Takes its rise from the head.*) From a catarrh, which the ancients imagined to be a discharge from the brain through the os ethmoides.

36. *Mild as gruel.*) I have here departed from Linden and

Almeloveen, who have it thus, *Deinde lenis sorbitio*, &c. *Afterwards mild gruel*, because the more ancient reading, *Dein lenis, ut sorbitio*, besides being more elegant, is confirmed by the following words of our author.

37. *And especially brains.*) I have taken no notice of the words *ex prima* in the reading of Linden and Almeloveen, which manifestly spoil the sense, otherwise complete without them. [JB]Morgagni observes, that all the other editions read, either *ex pruna*, or *ex aprugna*; but this last is not probable, because he said, that a boar was of the strongest class of food, lib. ii. but the whole head of a lamb or kid in the middle kind; and the former seems to be superfluous.

38. *Comitial*, so called from the comitia or assemblies of the people being adjourned, when any person was taken with one of these fits.

39. *Arquatus.*) The obscurity of this name gives room to the conjectures of critics. Some tell us it was so called, because the colour in the jaundice resembles the greenness of the rainbow; others because it bends the bodies of those afflicted with it like a bow.

40. *Suppurations.*) Ronsseus think this paragraph wrong placed here, as having no connection with what goes before; and suspects its proper place to be at the end of the twenty second chapter of this same book; because the author there treats of consumptive people, and suppurations of the lungs. Morgagni also believes it to be improperly placed, Ep. 1. p. 32.

NOTES

TO

BOOK IV.

1. Sometimes *like a small tongue*, viz. the epiglottis.

2. *Below the last ribs*, &c.) I have here translated, according to an emendation proposed by Morgagni[JC], who would read, *Qui lumbis sub imis costis inhærent, a parte earum rotundi, ab altera resimi*. Where a small alteration renders the description just: whereas in the way it stands in all the editions, *Qui lumbis sub imis coxis inhærent, a parte earum resimi, ab altera rotundi*, it plainly contradicts truth, as will be very obvious to any person the least conversant in anatomy.

3. *They are stocked with vessels, and covered with coats.*) In Almeloveen, *Et venosi sunt, et tunicis super conteguntur*. Morgagni[JD] informs us, that after the three first words, all his editions agree in inserting *Et ventriculos habent*, *and they have ventricles*; and it is not probable our author would take no notice of these; and to the same purpose speaks Hippocrates de Ossium Natur. no. 8.

4. *Relaxation of the nerves.*) *Resolutio nervorum* he commonly uses for a palsy, yet he cannot intend that here, but a langour or slight relaxation of the solids.

5. *Cervicalia.*) Cervicale was used in a double sense by the Romans, either for a bolster, or a piece of dress resembling the neckcloth.

6. *And venery*, *A venere*.) It is probable that Almeloveen is wrong in omitting after this *a vino*, which is in Morgagni's[JE] MS and all his editions especially as a few lines after, our author mentions the condition of allowing wine.

7. *Nostrils are more open.*) In Almeloveen *magis pallent*. Though

the MS and Cæsar and Ruellius read thus, yet it is plain from the text itself that the other editions are right, which have it *magis patent*; for our author presently adds, in a worse state of the disorder, the contrary symptom: *Si nares æque clausæ videntur*. Morgagni, Ep, 6. p. 140.

8. *Aminean wine.*) This, says Pliny, has the preference of all other wines, upon account of its strength, and its growing better by age. Plin. Nat. Hist. lib. xiv. cap. 2. And thus Virgil says, Georg. 2. line 97.—*Sunt et Amineæ vites, fortissima vina.*

9. *Liquid cerate*, says Ægineta, such as is used for fractures, is prepared from two parts of oil and one of wax. Lib. vii. cap. 17.

10. *Syrian oil.*) I suppose our author must here mean what was called from its sweetness *elæomeli*—which Pliny says is produced spontaneously in the maritime parts of Syria. It flows from the trees, fat, thicker than honey, thinner than resin, of a sweet flavour, and is used by the physicians. Plin. Nat. Hist. lib. xv. cap. 7.—And to the same purpose Dioscorid. lib i. cap. 37.—To this account P. Ægineta adds, that about two cyathi of this taken in a hemina of water discharge crude and bilious humours by stool; but that this draught is apt to stupefy a person, which, however, is not dangerous, but he would require to be excited. P. Æginet. lib. vii. cap. 3.

11. *Synanche*, or *Cynanche.*) According to Aretæus, the latter of these names was given to the distemper, either because it was common to dogs, or because these animals, even in health, hang out their tongues. Lib. i. de Caus. et Sign. Morb. Acut. cap. 7.

12. *His belly must be opened. Si non febrit, venter solvendus est.*) This I take to be the general direction; if he has no fever, the intestinal discharge must be promoted—*Liquenda alvus*, by which I understand the accomplishment of this by diet or medicines, and *Interdum etiam ducenda*, the use of clysters.

13. *Lycium* or puxacantha, *box-thorn*, a tree of the thorn-kind. The branches, with the leaves, are bruised and macerated for some days in water, then boiled, and after straining it, is boiled again to the consistence of honey. The best lycium is

what will burn. It has an astringent quality. They adulterate it by mixing lees of oil, or the inspissated juice of wormwood or ox-gall in the boiling. Dioscorid. lib. i. cap. 133.

14. *Frankincense, thus.*) It is generally allowed, that what the ancients called *thus*, goes now under the name of olibanum.

15. *Stomach.*) When our author mentions the gullet and stomach together, as in the first chapter of this book, he calls the former *stomachus*, and the latter *ventriculus*; but he often comprehends both under the name of *stomachus*, as in this place, which appears by the disorders mentioned.

16. *A powder with oil.*) This word is *pulvis*—Our author does not say what powder. He had mentioned rose-oil just before: can he intend the powder of rose-leaves? or any of those powders he prescribes in the cardiac disorder, the last of which is *quilibet ex via pulvis*, any common dust? Or has the word, denoting the kind, been omitted by the copiers?

17. *Sulphurated wool.*) I suppose he means wool impregnated with the fumes of sulphur.

18. *Cutiliæ, &c.*) The waters of Cutiliæ in the country of the Sabines, Pliny says, are extremely cold, and by a kind of suction excite a sensation in the body like a bite; they are very useful to the stomach, nerves, and the whole body. Lib. xxxi. cap. 2. Our industrious critics and collectors have not been able hitherto to find any such place as *Subruinæ* or *Sumbruinæ*, and therefore to cut the knot they cannot loose, propose to read here, as well as in the forecited place of Pliny, *Subcutiliæ*.

19. *Rhetic or Allobrogic.*) These wines, whose qualities are here described, had their names from the countries where they were produced; the first was the Grisons, and the latter Savoy.

20. *Signine.*) This wine by reason of its great austerity was used as an astringent medicine in fluxes. It had its name from the town of Signia in Latium. Plin. Nat. Hist. lib. xiv. cap. 6.

21. *Sesanum.*) Dioscorides gives no description of this, but says, it is bad for the stomach, and produces a bad smell in the mouth. Lib. ii. cap. 369. Pliny tells us it is brought from India, and the colour of it is white, and it resembles the *erysimum* or

hedge mustard in Greece and Asia. Lib. xviii. cap. 10. The moderns give this name to the oily purging grain.

22. *Over it.*) That is, through the teguments, so as to bring the part affected into view. I have here followed the old reading *contra id*, which Constantine upon the authority of an ancient MS. changed into *ultra id*; which I think does not afford so good a sense, though followed by Linden.

23. *Cytisus* is a shrub, all white like the buckthorn, sending out branches of a cubit's length or more, about which are the leaves, resembling fenugreek; which being rubbed between the fingers smell like rocket. Dioscorid. lib. iv. cap. 695.

24. *Acorns.*) Dioscorides calls this βάλανος μυρεψική. It is the fruit of a tree like the myrica.—It resembles the Pontic nut: upon being squeezed like bitter almonds, it emits a moisture, which is used for ointments instead of oil.—It grows in Ethiopia, Egypt, and Arabia. Lib, iv. cap. 742.

25. *Ferula* answered to *narthex* among the Greeks, and was a general name for several herbs of the same genus, from whence some of the fetid gums are obtained, as sagapenum, and galbanum.—The ancients made use of the stalks of these herbs, in the same manner as paste-boards are now used for fractures, as will be seen in the eighth book.

26. *Refreshing to nature.*) I have given a sense of the phrase *secundum naturam* (which is the reading of Linden and Almeloveen) very near to that, in which the philosophers use it, because I can find no other.—Pinzius, Junta, and the Manutii read *vel mentha secundum naturam est.* As the books vary, and none of them make the meaning quite clear, it might perhaps be plainer, if it be read, *vel quod secundum eam naturam est*, that is, *Or mint, or something of the same nature.*

27. *Regimen for such patients I have already mentioned.*) Vid. book i. chap. 7.

28. *Minium.*) Pliny complains that *minium*, which was used by the painters, was of a poisonous nature, and through ignorance often given in medicine instead of the *Indian cinnabar*. This last, he says, is believed to be the gore of a dragon crushed by the weight of a dying elephant, with the

mixture of the blood of these animals. *Minium* was found in the silver mines in both the Spains, but hard and sandy; also at Colchos in a certain inaccessible rock, but this was a spurious kind: the best was got near Ephesus.——*Minium* some of the Greeks call *cinnabar*, others *miltos*. Plin. lib. xxix. c. i. & lib. xxxiii. c. 7. *Cinnabar*, says Dioscorides, some mistake for what is called *ammion*: for this last is prepared from a certain stone mixed with the silver sand in Spain, and no where else. In the melting pot it changes into a very florid and flame colour: it has a suffocating steam in the mines: the painters make use of it. But *cinnabar* is brought from Libya, and sold at a great price, in so much that painters can hardly have it for their use: the colour of it is deep, whence some have imagined it to be the blood of a dragon: it has the same virtues as the hæmatites stone. Lib. v. c. 883.—*Miltos Sinopica*, the best is solid and heavy, of a liver colour, not stony, very thin when melted. It is gathered in Cappadocia in certain caves; it is strained and brought to Sinope, and sold there, whence its name. It possesses a drying quality, and agglutinating, for which reason it is mixed with vulnerary plaisters, and drying and styptick troches. It binds the belly if taken with an egg, and is given in clysters to hepatick patients, Lib. v. c. 885.——Our author elsewhere prescribes *minium* from *Sinope*, which makes it probable, that he intended the *miltos* of Dioscorides. But upon comparing these several descriptions, which it is needless to enlarge upon, the learned reader may determine for himself.

29. *Tetrapharmacum*, or compounded of four medicines. Vid. lib. v. c. 19.

30. *Myrrhapia.*) So called, according to Pliny, from the likeness of their flavour to that of myrrh. Lib. xxv. c. 15.

31. *If the hardness continue.*) *Si durities manet.* This appears suspicious, as our author had mentioned no hardness before. In this chapter he first describes hysterick fits, then prescribes the proper treatment both during the paroxysms, and after they are over. We have very great reason to believe the whole chapter to be corrupted, for reasons which will be mentioned in a following note. With regard to this particular place, my opinion is, that after Celsus had finished what he had to say

concerning hysterick fits, he next proceeded to treat of a hardness of the uterus; and after directing some remedies, in case of their failing, and the hardness continuing, he orders other medicines to be tried.—What renders this conjecture the more probable, is, that Aretæus, amongst the chronick diseases of the uterus, mentions σκληριη, *a hardness*. "There is," says he, "another species of cancer, where there is no ulcer, but a hard and resisting tumour. The whole uterus is stretched, violent pains distress, and all the other symptoms are the same as in a cancerous ulcer of this part." Lib. ii. de caus. et sig. morb. chron. c. 2.

32. *Restringents must be used.*) *Si maligna purgatio est, subjicienda sunt coërcentia*: thus Linden and Almeloveen.—Morgagni observes, that the MS. copy of Alex. Paduan, after the words *subjicienda sunt*, not only has a great vacuity to the end of the page, but in the beginning of the next *coëuntia*, and in the margin opposite to this chasm are written these words, *Desunt in vetustissimo exemplari duo folia. Two leaves are wanting in the oldest copy.* In this also, where the indexes were prefixed to each book, he found the following in the fourth—Vulva exulcerata est—De vesica—De calculis in vesica—In omni dolore vesicæ. And in the margin of the book, he found, *Vulva ulcerata est*, written opposite to *Si vero vulva exulcerata est.* Then should have followed the two other—And the last, namely, *In omni dolore vesicæ*, was set over against *Præter hæc in omni dolore vesicæ*, and not *vulvae*, as Linden and Almeloveen read it.

In the MS. in the library of St Anthony at Venice, he found the preceding chasm much larger, 42 large pages, the same observation in the margin, and the correspondent numbers in the contents of the book.—Morgagn. ep. ii. p. 45.—ep. iii. p. 50. So that it is probable our author had first finished the diseases of the uterus, as being peculiar to women, and then proceeded to those of the urinary bladder, as common to both sexes.

33. *And especially rue with vinegar, &c.*) Almeloveen and Linden read, *praecipueque ex aceto; vitare autem oportet rutam, et ne supinus dormiat.* This is making Celsus condemn what all

physicians almost have approved, and therefore with Constantine and Ronsseus, I read *praecipueque ex aceto rutam: vitare etiam oportet ne supinus dormiat*: which Morgagni prefers. Ep. i. p. 27.

34. *At such seasons as it returns.*) I have here followed the correction offered by Morgagni *his* for *hi* which last would manifestly destroy our author's meaning, as may appear from the general sense of the whole sentence—Instead of the present translation it would be, *by those upon whom it returns*.

35. *Sarcophagus*, or *flesh-eating.*) This is found at Assos, a city of Troas. Dead bodies interred in it are said to be consumed in forty days, bones and every thing, except the teeth. Plin. l. xxxvi. c. 17.

36. *Asian stone.*) Dioscorides says this ought to be of the colour of the pumice, spongy, light, and easily friable. Lib. v. c. 916.

37. *Acopon*, according to the derivation of the word, signifies something that relieves lassitude, which was rubbed upon the joints.—Our author exhibits some forms of them lib. v. cap. 24. where their consistence varies.—P. Ægineta for *acopa* orders four parts of oil to one of wax, lib. vii. cap. 17.—In later ages the word was used in a more extensive sense, for compositions of the consistence of oil, or as a liniment even when the intention was not to relieve fatigue.

38. *Most agreeable to his humour.*) That is, Celsus supposes a man in good health, who is his own master, to be confined to no laws, lib. i. cap. i. but upon account of a preceding illness he must return to that gradually.

NOTES

TO

BOOK V.

1. *Chalcitis.*) Pliny lib. xxxiv. cap. 2. says, this was an ore of copper, and found in Cyprus. Dioscorides describes the best chalcitis as resembling copper, easily friable, having shining veins. Lib. v. cap. 889.

2. *Gum*, when mentioned alone in any of the ancient authors, is understood to be the same with what now bears the name of gum Arabic.

3. *Calcined lead. Plumbum combustum.*) The process of this is mentioned by Dioscorides under the correspondent Greek name—It was prepared by putting very thin laminæ of lead, with sulphur strewed upon each of them, into an earthen pot, and keeping them on the fire, stirred with an iron rod, till the lead was converted into ashes. It was afterwards rubbed in a mortar, and washed by repeated affusions of water, till no dross swam at top. Dioscorid. lib. cap. 870.

4. *Misy.*) This hath the same virtues as the chalcitis, and they only differ in the degree of strength. The best comes from Cyprus, of a gold colour, hard, and when broken, shining and stellated. Dioscorid. lib. v. cap. 891.

5. *Allum.*) There are several kinds of this mentioned by the ancients. Dioscorides says, the scissile, round and liquid, were applied to medicinal purposes, and that the scissile was the best. Lib. v. cap. 897.

6. *Melinum.*) As our author in this place mentions only simples, he cannot intend by this word, oil of quinces; so that it must either be a kind of colour that came from Melos, or else the Melian allum; in which last sense the comma ought to be expunged betwixt *alumen*, and *Melinum*.—But it is necessary to

observe, that our author mentioning this species of allum in the sixth book, calls it *Alumen Melium*, which in other editions is *Alumen Melinum*.

7. *Iron scales* are reckoned to have the same virtue as its rust, but not so efficacious.

8. *White vine.*) Paul Ægineta mentions the *Ampelos leuce*, or *white vine*, which he said was also called *bryonia*. Lib. vii.

9. *Propolis* is a gluey matter, of a fetid smell, found in the honey-combs, which Pliny says serves to keep out the cold.—Dale calls it bee-bread.—Others call it bee-glue.

10. *Soot of frankincense.*) Dioscorides orders it to be made thus,—"With a pair of small tongs light a bit of thus at a lamp, and put it into a new hollow earthen vessel, which is covered with a concave copper one, with an opening in the middle, and carefully anoint it over; on one side or both, put small stones to the height of four fingers, to show if it burns, and that there may be room to put in other bits, before the first be entirely extinguished; and continue this, till you observe a sufficient quantity of soot collected; always wetting the external side of the copper with a sponge dipped in cold water. For thus all the soot will be fixed, when this is not too much heated: otherwise it would fly off again by reason of its lightness, and be mixed with the ashes of the thus." Lib. i. cap. 85.

11. *Sandarach.*) This is the mineral sandarach, or red arsenic.

12. *Gnidian berry.*) Modern botanists are not agreed, what this berry of the ancients was; some taking it for the mezereon, or spurge olive, others for the spurge flax.

13. *Omphacium.*) Of this there were two kinds, the one the juice of unripe olives, and the other the juice of unripe grapes. Plin. lib. xii. cap. 27.

14. *Copper-scales.*) This must be an interpolation, as in this same chapter, which mentions only the class of cleansers, it occurred before.

15. *Calcined copper.*) The metal was calcined by being put into a pot, *stratum super stratum*, with sulphur and salt.—Or else the copper was kept for several days in the fire in a pot by

itself.—Others again added allum to it, or sulphur alone, which last gave it a sooty colour.—It was washed in a mortar, and the water changed four times a day, till no froth arose in it. Dioscorid. lib. v. cap. 861.

16. *Apronitre.*) The spume or froth of nitre was of a purplish colour, and the lighter the better. It had the same virtues with nitre.—Id. lib. v. cap. 905.

17. *Chrysocolla.*) I have here retained the original word, because naturalists are not agreed, that it was the modern borax. Dioscorides says the Armenian is the best, and in colour it resembles leeks.—What is full of earth and stones is to be rejected. Lib. v. c. 878.

18. *Cyprus ashes. Cinis Cyprius.*) I do not remember that this is mentioned by any other ancient author; but it has probably been the ashes of the tree or plant of this name, or perhaps some particular kind of ashes brought from the island of Cyprus.

19. *Cadmia.*) The best is the Cyprian, called botryitis, solid, moderately heavy, being clustered like a bunch of grapes, of the colour of spodium, and being broken it appears cineritious and eruginous within. There are other kinds of it inferior, known by the names onychitis, zonitis, and ostracitis. For burning cadmia it is hid in live coals, till it grows diaphanous, and runs into bubbles like the scoria of iron; afterwards it is extinguished in Aminæan wine. Some burn it thus three times, till it be perfectly converted into ashes; and then they use it instead of spodium. It is washed in a mortar, and the water changed, till no dross appears on the top. Dioscorid. lib. v. cap. 858.—I have here mentioned particularly the burning and washing of cadmia, because it may serve to shew the nature of this process in other minerals, when our author prescribes such; and Dioscorides in mentioning them often refers to cadmia as the general example.

20. *Hypocistis* grows near the roots of cistus. The juice of it is inspissated like the acacia; and it has the same qualities. Dioscorid. lib. i. cap. 128.

21. *Diphryges.*) This is not known in medicine at present.

Dioscorides says ‘there are three species of it. One of the metallic kind found only in Cyprus, which is first dried in the sun, and then burnt by laying sticks all round it. Whence its name from being twice torrified. A second kind is found at the bottom of the copper furnaces after smelting. The third is the pyrites stone calcined for several days in a furnace, till it have the colour of cinnabar. The taste of diphryges is eruginous, astringent, and vehemently drying upon the tongue.’ Lib. v. cap. 894.

22. *Salamander.*) Our author here intends the animal so called, and Dioscorides ascribes to it this virtue. It was burnt and the ashes made use of. Lib. ii. cap. 255.

23. *Flower of copper.*) *Flos æris* is obtained, when the melted copper runs from the furnace, by pouring cold water upon it to refrigerate it. For by the sudden check, this substance is as it were spued out, and concretes into flowers. Id. lib. v. cap. 862.

24. *Spodium* was scraped off the walls of furnaces mixed with sparks, and sometimes coals; that, which was generated in the gold furnaces, was reckoned best for the eyes. Plin. lib. xxxiv. cap. 13.

25. *Phrygian.*) This was made use of by the dyers in Phrygia, whence its name. The best is pale-coloured and moderately ponderous, not firm in its concretions, and having white veins. Diosc. lib. v. cap. 915.

26. *Scissile.*) This is produced in the western Iberia. The best is of a saffron colour; easily broken and split; in its contexture it resembles the sal ammoniac. Dioscorid. lib. v. cap. 919.

27. *Vinegar* is superfluous, because mentioned before in the same chapter.

28. *Burned paper.*) It must be observed the paper of the ancients was made from the papyrus or paper-reed.

29. *Sansucus.*) Dioscorides says this is the same with the amaracus, or sweet marjoram, which is the name given to *sansucus* by the Sicilians and people of Cyzicum. Lib. iii. cap. 452.

30. *Asteriace.*) I do not find that this word occurs any where

else.

31. *Eretrian earth* is very white, or of an ash-colour: this last, and the soft is best. Dioscorid. lib. v. cap. 945.

32. *Poppy-tears.*) Dioscorides after describing the *papaver sativum* and its virtues, says, 'It is not improper to subjoin the method in which the *opos* or *juice* of it is collected. Some then cutting the poppy heads with the leaves, squeeze them through a press, and rubbing them in a mortar, form them into troches. This is called *meconium*, and is weaker than the *opos*. But whoever desires to gather the juice, must proceed thus. After the heads are moistened with dew, let him cut round the asterisk with a knife, but not penetrate through them, and from the sides, cut straight lines in the surface, and draw off the tear that flows, with his finger, into a shell; and come again not long after, for it will be found standing upon it; and the day following, it will be found in the same manner. It is proper to rub it in a mortar, and forming it up, to set it by.' Dioscorid. lib. iv. cap. 647.—Pliny says, that the meconium is prepared from a decoction of the heads and leaves; but is much weaker than opion. Lib. xx. cap. 18.

From this account it seems plain, that our author means the genuine tear, or the opos of Dioscorides.

33. *Antimony. Stimmi*, and in other places of our author *stibium.*) Dioscorides's description of this shews it to be the modern antimony, lib. v. cap. 873.

34. *Dross of lead.*) This is glassy, and has the same virtues as calcined lead. If is washed in a mortar like other minerals. Dioscorid. lib. v. cap. 878.

35. *Matter. Materia.*) This is not meant here of pus, as will appear by what the author immediately adds; but any humour, that is the proximate cause of a disease.

36. *Struthium.*) This was an herb used by dyers. Dioscorides says it was well known. The wool-washers make use of it for cleansing wool: the root of it is pungent and diuretic, and relieves in disorders of the liver, &c. Lib. ii. cap. 381.—This herb is not known now, at least by the same name. Some take it for the luteola, others for the imperatoria, others for red

valerian, others for saponaria.

37. *Nard ointment.*) For making this, oil is inspissated with cyperus, and for the fragrancy is added costus, amomum, nard, myrrh, balsam. Dioscorid. lib. i. cap. 76.

38. *Cachrys* is the fruit of the *libanotis fructifera*, which is by some called zea or campsanema, and has leaves like fennel, but thicker and broader, roundish, and creeping on the ground; the stalk, about a cubit or more in length; the fruit has a heating quality, very drying, whence it is good mixed with ointments against rheums of the eyes. Dioscorid. lib. iii. cap. 492. et 93.

39. *Viscum*, bird-lime.

40. *Ammoniacum thymiama.*) According to Constantine, this is nothing else than gum ammoniac. I forbear to mention the conjectures of others, that seem to be not well founded. Paulus Ægineta says, it is an opos, or juice, endued with such an emollient virtue as to discuss schirri and tophi. Lib. vii.

41. *Crocomagma.*) This was the refuse left after the expression of the oil in making the crocine ointment; which, besides retaining some of the virtues of saffron, would also be in some measure impregnated, with the aromatics used in the composition of that ointment. Vide Plin. lib. xxi. cap. 20. et Dioscorid. lib. i. cap. 26.

42. *Thapsia.*) According to Dioscorides's description and account of its virtues, it seems to be the modern thapsia, or turpethum garganicum, deadly carrot. Vide Dioscorid. lib. iv. cap. 739.

43. *Washed lead* was thus prepared.—Put water into a leaden mortar, and rub it with a lead pestle, till the water becomes black and feculent; then strain it through a linen cloth, pouring water upon it, that all that is dissolved may be strained; and repeat this till you have a sufficient quantity. Then suffer it to settle, pouring water upon it several times, till no more blackness stand upon the top; then work it up into a troches and set it by. Dioscorid. lib. v. cap. 869.

44. *Cedria* is what distils from the cedar-tree; the best is thick,

pellucid, and of a strong smell, and not diffusing itself when poured out. Dioscorid. lib. i. cap. 106.

45. *Laurel oil.*) This was made in different ways. One method was boiling the berries in water when they fall off the tree, which causes them to emit their oil, which is separated by the hands into *shells*. Others impregnate the oil of unripe olives with cyperus, calamus, and afterwards putting in the tender leaves of the laurel, boil them together. Others add to these bay-berries, till the oil smell sufficiently of them. Others mix with it storax and myrrh. Dioscorides, lib. i. cap. 50.

46. *Rasile verdigrease* is made by suspending a copper vessel, or plate, over the steam of vinegar for ten days; then the verdigrease produced is scraped off. Or else by putting one or more lumps or plates of copper into husks of grapes grown sour. Dioscorid. lib. v. cap. 865.

47. *Oesypum* is the oily part collected from sordid wool thus: the wool was washed in warm water, and all its sordes expressed, the fat swimmed a-top, with a froth, and upon throwing in some sea water, it subsided to the bottom, and when all the œsypum was obtained from it in this manner, it was purified by repeated affusions of water. When pure it has no sharp taste, but is in some degree astringent, and appears white. It has a heating quality, fills up ulcers, and is emollient. Dioscorid. lib. ii. cap. 272.

48. *Boiled copperas.*) Dioscorides mentions a species prepared in Spain that had the name of χάλκανθον ἐφθὸν—*atramentum sutorium coctum*. Lib. v. cap. 888.

49. *Cicine.*) A proper quantity of κροτωνὼν, *of the Ricinus*, is dried in the sun, till their exterior coat break and fall off. Then the pulp is collected, put into a mortar, and pounded well, and afterwards removed into a tinned kettle containing water, and boiled over a fire. When all the juice is obtained from them, remove the vessel from the fire, and take up the oil that swims a-top, and set it by. In Egypt, where great use is made of this oil, they obtain it by first grinding the seed, and then pressing it. Dioscorid. lib. i. cap. 38.

50. *Burnt ceruss.*) Put powdered ceruss into a deep vessel; set it

on the fire, stirring it with a ferula, till it has the colour of sandaracha, (red arsenick). Dioscorides also mentions a toasted or roasted ceruss, but the process is of the same nature, and only stopped, when the ceruss acquires a lemon colour. Dioscorid. lib. v. c. 877.

51. *Polybus.*) I have chosen to read this name with the older editions, because our author afterwards mentions the sphragis of Polybus, which can have no other place to refer to but this.

52. *Cauneæ.*) Mentioned by Cicero, De Divinatione, lib. 2.

53. *Susine ointment.*) For making this, oil was first boiled with wine, calamus, and myrrh, and after being strained, cardamom was infused in it, til it gave a proper flavour, After this, to three and an half pound of this oil were added the leaves of a thousand lilies, and the whole was stirred with hands anointed with honey. After standing a day and a night, the lilies were squeezed out. Dioscorid. lib. i. c. 63.

54. *If a woman does not conceive.*) *Si non comprehendit.* This sentence has, in some copies, been joined with the former, *si concidere vitio locorum, &c.* as if *comprehendit* related to the consistence of the pessus obtained by the honey. There are several other explanations offered, but none of them with any appearance of truth. I thought it capable of no other sense than what I have given in the translation; and was pleased to find this supported by the opinion of Morgagni, Ep. i. p. 18.

55. *Sprinkled on dry.*) The words as they stand in the text, seem capable of no proper sense. *Misy quoque et galla, si paribus portionibus misceantur, corpus consumunt: eaque vel arida inspergere licet, vel excepta cadmia, illinere.* I have therefore taken the liberty to transpose *cadmia*, and place it after *galla* for the cadmia is as dry as the other two, and therefore could not serve to bring them to any consistence; but still there seems to be a word wanting after *excepta*, to denote the substance for uniting them.

56. *Marmor coctum.*) I suppose this to be burnt marble; for Dioscorides mentions a lapis alabastrites, which was burnt, and mixed with resin or pitch, and thus used to discuss hardnesses. Lib. v. c. 927.

57. *Ignis sacer.*) Some, among whom is Heister[JF], believes, that Celsus calls an erysipelas *ignis sacer*, whereas he has erysipelas under its own name, cap. 26. of this book. —Fabricius[JG] ab Aquapendente, and Wiseman[JH], by his *ignis sacer* understand the miliary herpes. See our author's description of it, cap. 28.

58. *Malabathrum.*) It is a question, whether the modern malabathrum, or Indian leaf, is the same with the ancient. Dioscorides says, some will have it to be the leaf of Indian nard being deceived by the similarity of its smell. But that is not true; for it is a vegetable of a peculiar nature, growing in the fens of India, without any root, the leaves swimming on the surface of the water. Lib. i. cap. 11.

59. *Black cassia* is the second species mentioned by Dioscorides, who says it is preferable to the first, and fittest for medicinal use; the natives of Arabia call it zigir; it is thick, and smells like roses. Lib. i. cap. 12.

60. *Myrrh called stacte* was the oily part expressed from particular kinds of myrrh, and was very fragrant. Dioscorid. lib. i. c. 78.

61. *Pontic root.*) Dale, with Alpinus, believes the rhapontic of the ancients to be the same with the true rhapontic of the moderns.

62. See note at chap. 24. book iv.

63. *Sil.*) Rhodius, together with Constantine and Ronsseus, are for reading *seselis* instead of *silis*, for sil is a species of ochre; and they take it for the *seseli Creticum*, or *tordylium*, *hartwort of Candy*.

63a. *Between the fingers. Vel inter digitos.*) Morgagni observes, that, instead of these words, his MS. and all his editions read *In articulis* which the reader, he says, cannot wonder at, if he considers what follows concerning the difficulty of curing wounds in the joints, p. 297. of the original. Ep. 6. p. 144.

64. *Fibulæ.*) The word *fibula*, in other classical authors is translated by a *buckle*; which from its connection in such places appears very proper. But upon comparing the several

passages in our author, where the use of them is directed, it seems very difficult to give any account of them. The variety of opinions may very well be reduced to two, those of Guido de Cauliaco and Fallopius. The first believed them to be hooks, whose size was adapted to that of the wounded member, curved at both ends in the form of the letter S, that they might be fixed to both lips of the wound. According to Fallopius the *fibula* was nothing else but the interrupted suture now commonly used in wounds.

Fabricius was at first of opinion, that the fibula was not made of thread, but copper or iron, not hard, as Guido would have it, but softer and flexible, that it might be fixed through the lips of the wound and then twisted. But after mature consideration, he says he found Fallopius's opinion to be most agreeable to truth.

Rhodius in his treatise *de Acia*, where his design is only to clear up *the fibula and acia of Celsus*, has been at immense pains to collect every thing extant in any of the ancients about their *fibulæ*; but as there is nothing which occurs in any of the old physicians more particular than in our author, it is not to be wondered, that every thing in his treatise of real importance to the scope of his enquiry, is contained in Fabric. ab Aquapendente, lib. ii. de Vulnerib. cap. 5. et de Chirurgic. Operation. cap. 108.

The principal places, in which our author mentions *fibulæ*, are lib. v. cap. 26. p. 292. in the original, p. 293.—Lib. 7. cap. 4. p. 412.—Cap. 19. p. 462. et 464.—Cap. 22. p. 469.—Cap. 25. p. 473.

The difficulty seems to rest here, that our author should use the term *fibula*, which in other classical authors is always taken for a buckle, or something of that kind made of metal, without distinguishing it from the ordinary *fibula*, as one should imagine he would have done, had he intended thread. Could it be a metal wire with a loop at one end, and the other first put through the wound, then passed into the loop, and twisted; which it would be easier to cut than pull out? This seems to obviate the strongest objection against its being of metal, drawn from the verb *incido*, which some moderns

would have only applicable to thread.

Rhodius *de Acia*, cap. 6. will have the *fibula* used to the prepuce of boys (mentioned by our author lib. vii. cap. 25.) to be of metal; and according to Joann. Britannicus a small ring either of silver, gold, or copper.

I have only to add, that instead of *paulatim* according to Linden and Almeloveen, I have read *paulum* with Pinzi, Junta, Aldus, and others.

65. *Soft thread, acia molli.*) *Acia* occurs no where else but in this single place of Celsus; the translation is agreeable to the sentiments of Rhodius *de Acia*, cap. 14. and I think it capable of no other sense. It may not be improper however to observe, that in some copies, though they are not of the best authority, *acu* is read instead of *acia*, but with no apparent meaning.

66. *After applying.*) I read with Constantine *imposito* for *impositum*, which last has no place in the construction with a proper sense.

67. *And the flesh within is corrupted.*) Malique odoris est, *et caro intus corrupta*. All the editions of Morgagni[JI] have *carunculæ corruptae*, and the MS, *carunculaeque corruptae*, which Morgagni likes better; because it would have been to no purpose to have repeated *caro ejus corrupta*, which had occurred only a few lines before; whereas with the other reading, we expunge the colon, and make *carunculae* relate to the verb *resolvuntur*.

68. *The skin a little farther off.*) I have here followed the reading of the older editions, *ulterior* instead of *deterior* in Linden, which agrees much better with the sense of the whole passage. Vide Morg. ep. 6. p. 149.

69. *The skin is entire, but the flesh within.*) Linden omits *integra cute*, which is in the older editions, and Morgagni's MS[JJ].—As the sense seems to require it, I have taken it into the translation.

70. *Almost all bites.*) I read here, omnis *fere* morsus, with Nicolaus Junta and the Manutii, and not *feræ*, as Linden and Almeloveen have it. For Celsus himself makes no distinction

between venenatos et non venenatos morsus.

71. *Psylli.*) Pliny, from the authority of Agatharchides, says, there was a nation called Psylli, in whose bodies there was some humour destructive to serpents, by the odour of which they stupified them. They had a custom among them of exposing their children to the fiercest of these creatures, that they might try the chastity of their wives, the serpents not flying from those, that were not of their blood. Plin. lib. vii. c. 2. This account of Pliny's has no better foundation than other vulgar errors: but we may observe, our author was too curious an enquirer into nature to give credit to such fables.

72. *Especially in Gaul.*) The Gauls tinged their arrows in hunting with hellebore, and cutting out the wound they made all round, they pretended it made the flesh more tender. Plin. lib. xxv. c. 5.

73. *Cerastes*, from κερας, a horn, is a serpent of one or two cubits in length, of a sandy colour in the body, and near the tail void of scales; upon its head something rises like horns, and the parts about the belly are covered with scales, orderly disposed, which as it creeps along makes a rustling noise like hissing. Æt. Tetrab. 4. Serm. 1. cap. 28.

74. *Dipsas*, a serpent called by that name, from the immoderate thirst, which is caused by its bite. It is found in maritime places, is about a cubit in length, thick, and becoming gradually smaller towards the tail. Id. cap. 22.

75. *Hæmorrhois.*) Paulus Ægineta tells us, persons bit by an hæmorrhois are tormented with pains, their bodies become short and small, there is a violent hæmorrhage from the wound, and if there is a cicatrix in any part of the body, it bursts and bleeds: the stools are bloody, the blood discharged is grumous, blood is brought up from the lungs by coughing; and being seized with a vomiting of blood they die immediately. He adds, that remedies must be applied before the symptoms appear; for after they come on, all means are vain.

76. *Chersydrus.*) The name of this imports it to be an amphibious animal, from χέρσος *terra*, and ὕδωρ *aqua*.

77. *The Phalangium* is unknown to Italy, and is of several kinds; one like an ant, but much larger, with a red head, the rest of its body black and variegated with white spots. The bite of this is worse than that of a wasp. The Greeks gave this name also to two species of spiders, the lupus, and another downy with a large head. Plin. Nat. Hist. lib. xxix. cap. 4.

78. *Pastinaca fish* was of the plani kind, and had a cartilage instead of a spine. The aculeus, or κεντρὸν of this fish is a remedy for the tooth-ach, as Dioscorides informs us, and Celsus himself mentions, lib. vi. cap 9. Dale calls it the poison fish, fire, or fierce flaw. The liver is said to be good against itching; in oil it removes lichens and lepras.—This cleansing quality attributed to it, makes it probable our author intends it here, for no such virtue is attributed to the water, or sea-parsnip.

79. *Now this is a very bad kind.*) One of the great sources of corruption is a false punctuation; and as I could make no sense of this sentence as it now stands, I have translated it agreeably to the following; *Namque pessimum id genus est. Fereque primum id fit, quod cacoethes à Græcis nominatur.* As it stood before, the cacoethes was called the worst kind, which our author contradicts immediately, by saying that no other species but that can be cured. Some of the older editions read *ob quæ* for *namque*, that is, 'Upon these accounts this is a very bad kind.' Which appears to agree better with the context.

80. *None of these can be removed but the cacoethes.*) Here again the sense of the author is manifestly corrupted by the punctuation in Linden and Almeloveen; but Morgagni[JK] has set it to right in this manner:—*Tolli nihil nisi cacoethes potest: reliqua curationibus irritantur; et quo major vis adhibita est, eo magis. Quidam usi sunt, &c.* The translation is conformable to this. Which reading is almost the same with Constantine's.

81. *Of a good juice.*) See book ii. chap. 20.

82. *Probe.*) One kind of the probe or *specillum* of the ancients was broad at one extremity for the purpose, which Celsus here mentions. Vide Scultet. Armament. Chirurg. tab. 8. fig. 6.

83. *Chironian.*) So called, says Paulus Ægineta, because it

requires a very great physician, such as Chiron. Lib. iv. cap. 46.

84. *These are the methods prescribed by physicians.*) This translation is agreeable to the reading of the most ancient editions, particularly Nicolaus, Pinzi, Junta, and Aldus. *Quæ cum medici doceant, quorundam rusticorum, &c.* In Linden and Almeloveen the passage has a quite different turn: *Quæ cum medici doceant, ab iis requirenda. Quorundam, &c.*—That is, 'These being the methods prescribed by physicians, they will be best practised under their direction.'

85. *Leaven.*) The common leaven for bread among the Romans was paste worked up without salt, and boiled after the manner of pulticula, then suffered to stand till it turned sour. Plin. lib. xviii. cap. 11.

86. *From its figure, our authors call it panus.*) *Panus*, a clue or ball of wool or yarn; πῆνος, or πᾶνος the Greeks used in the same sense, but did not apply it, as the Romans did, to this tumour.

87. *The same applications.*) I have here followed the reading of Pinzi Manut. Ruell. Stephens and Morgagni's MS. autem for *aut*, and *tantum modo* for *tantummodo*. Morgagni, Ep. vi. p. 156.

88. *If it does not slip out, &c.*) Almeloveen and Linden read, *si non dilabitur sede, qua innititur*; whereas the prior editions wrote, *si non labitur, sede quale innititur*; i. e. 'if it does not slide, but rests upon a smooth surface.' This Morgagni[JL] likes much better, as agreeable to Celsus himself, who adds, *si inæquale quoque et asperum*, &c, that is, in the first case where the probe rested, but upon a plain surface, the caries was but little advanced; whereas under the following appearances it was more considerable.

89. *Collyrium.*) This name, at present, is appropriated to medicines designed for the eyes; in which sense the ancients also used it. But they gave it a greater latitude, to denote likewise a composition of powders brought to a consistence by some liquid, and formed into something like a tent, of various sizes, according to the cavities it was designed for. Thus

Scribonius Largus orders a collyrium of the bigness of a pine kernel, to be introduced into the anus, Cap. xxxvii. comp. 142.

90. *Which is more ulcerated. Quæ magis exulcerata est.*) Several of the ancient editions read *quia* for *quæ*, that is, 'Because it is more ulcerated.'

91. *Spreads wide.*) This whole passage was very much corrupted in the old editions. We are obliged to Linden for several corrections in it; but he reads this part *Proceditque et latet*, that is, *It spreads and conceals itself*. As this can hardly be the meaning of the author, I read *Procedit latè*, which is in Pinzi, Junta, Aldus, and others; only I take the liberty of expunging *et*.

92. *Cimolian chalk.*) I have here kept close to the author's term *subcærulea*. Pliny and Dioscorides describe this kind as inclining to purple. See note book ii. chap. 33.

NOTES

TO

BOOK VI.

2. *Gum.*) Our author here manifestly distinguishes between *lachryma and pituita*. The ancients imagined the *pituita* to be concreted tears, whereas it is the sebaceous matter secreted from the glands of Meibomius. To translate it in one word I have therefore given it the vulgar English name.

3. *Phlegm.*) Vid. lib. ii. cap. 23.

4. *Diet ought to be somewhat fuller than formerly.*) In Almeloveen and Linden, *Post hæc cibo pleniore, quam ex operum consuetudine*. The reading in the older editions was *ex eorum dierum consuetudine*, which Morgagni prefers, Ep. vi. p. 153. and is the reading I have followed.

5. *Burnt antimony.*) The antimony is rubbed over with suet, and hid in the fire till the suet is burnt, and then being taken out, it is extinguished in the milk of a woman, that has had a male child, or in old wine. Dioscorid. lib. v. c. 873.

6. *Specillum asperatum.*) Paulus Ægineta, treating of the same disorder, mentions this instrument by the name of *blepharoxyston*, that is, *an instrument for scraping the eye-lids*. It is delineated by Heister, p. 2. tab. 16. fig. 5.

7. *Psoricum.*) Dioscorides gives the same process for making of psoricum: only he orders the vessel to be buried in dung for forty days, about the heats of the dog star. Lib. v. cap. 890.

8. *Hot waters.*) By our author's using the plural number here, it may be doubted, whether he does not intend mineral hot waters.

9. *Strigil.*) This is used by other authors to signify a currycomb, or that instrument, with which the sordes were scraped off the

skin at the baths; but in this place it can be taken for nothing else but a tube or syringe.

10. The *specillum oricularium*, from its use here, as well as in other places, must have been some kind of forceps.

11. *A board is laid down.*) I could make no proper sense of this sentence according to the present pointing, and therefore have altered the punctuation in this manner; *tabula quoque collocatur, media inhærens, capitibus utrinque pendentibus, &c.*

12. The *teda* is a tree very like the pine, abounding with resin. Pliny says, that all the trees, that afford resin, by an excess of fat are changed into the teda. Hence teda is often used for a torch in Latin authors. Vid. Plin. Nat. Hist. lib. xvi. c. 10. & lib. xvii. c. 24.

13. *Sory* was a mineral of much the same virtues as *misy* and *chalcitis*: it is strong scented, and creates a nausea. It is produced in Egypt, Africa, Spain, and Cyprus. Dioscorid. lib. v. c. 893.

14. *Rhus* is a shrub growing in rocky places, of about two cubits in length; it has long leaves, and reddish, the fruit of it is like a grape stone. The bark about is very useful: it has a styptick quality, and is used for the same purposes as acacia. It was used by the tanners. Dioscorid. lib. i. c. 138. It is supposed to be rhus obsoniorum, or sumach of the moderns.

15. *In the inner part.*) For *ulteriore* in Almeloveen, I chuse to read with Constantine *interiore*.

16. *In nine cyathi.*) There is no liquid mentioned in Linden's or Almeloveen's edition, but most of the others have *Ex novem cyathis vini*.

17. *That the skin be kept from falling in contact, &c.*) This is agreeable to the reading of Linden and Almeloveen, *Illam esse servandam ne considat, ulcerique agglutinetur*. But [JM] Morgagni would here restore the reading of his editions and the MS. *Illam non esse servandam ne considat*, &c. that is, 'It must always be cut off in such a case;' which indeed is rendered probable by our author's first ordering circumcision, when there is a loss of substance in the penis; and then his adding

Perpetuumque est, as if that were a general rule for the same operation in like circumstances.

18. *Vulsella.*) This instrument is delineated by Scultet. Arm. Chirurg. tab. 4. fig. 1.

19. *Cicatrix is formed. Fit cicatrix.*) I find no variety in any of the copies, which I have seen. The sense however seems to require *crusta* instead of *cicatrix*; because the caustic medicines would produce an eschar, whereas no cicatrix would be formed, till the eschar cast off, and the ulcer was deterged and incarned.

20. *Consumed either by stronger medicines, &c.*) This is agreeable to the reading of the older editions—*Si hac ratione non tollitur: vel medicamentis vehementioribus, vel ferro adurendum est.*— Linden and Almeloveen have it thus: *Si hac ratione non tollitur, vel aliis medicamentis similibus, vel vehementioribus: ferro adurendum est.* That is, 'If it is not removed by this method, or like medicines, or stronger, it must be burnt by the actual cautery.' Which, Morgagni[JN] justly observes, besides the incongruity of recommending similar medicines after the first have failed, alters the sense much for the worse.

NOTES

TO

BOOK VII.

1. *Physician makes a wound.*) An English reader may naturally suppose that the term should be *surgeon*; but as our author here uses the word *medicus*, I did not think myself at liberty to depart from it; especially as his not using *chirurgus* was from choice, since this word occurred in the preceding paragraph. Celsus supposes an accomplished physician acquainted with all the branches.

2. *Nevertheless, it is not right to trust, &c.*) In this translation I have followed Linden and Almeloveen. But the reading in most of the old editions, as Nicolaus, Pinzi, Junta, Aldus, Gryphius, &c. is *Neque tamen fas non est nihil cucurbitula agere*; that is, 'Yet it is not an inviolable rule always to employ the cupping-vessel.' Which I must own, appears most agreeable to the sense of this place; because our author immediately proceeds to consider a case, in which cupping can be of no service. See Morg. Ep. vi. p. 151.

3. *Even before the suppuration is formed.*) I have here followed the old reading, *tum pure quoque maturior hæc interdum esse consuevit*, which seems to agree better with our author's reasoning; for as he had just blamed Meges for introducing the new term *callus* instead of *tunica*, without necessity; so he adds, that he was mistaken also in believing that it was never found but inclosing an old collection of matter. He on the contrary says, that it sometimes appears before the generation of pus. Linden and Almeloveen read *tum, pure quoque maturiore, hæc interdum esse consuevit*; that is, 'And this is found, even when the suppuration is more ripened.' Whether the connexion of this with what went before be natural, the reader may judge for himself. I do not know but these learned

editors may have put another sense upon *maturiore, when the suppuration is sooner ripened*: which would be pretty much the same with the old reading. However the first is preferred by Morgagni, Ep. vi. p. 152.

4. *Lest convulsions follow, which may debilitate, &c.*) This translation is agreeable to the reading in Linden and Almeloveen; but all the older editions read thus, *ne vel distendantur hi, vel membrum debilitent*; i. e. 'Lest either convulsions follow, or the limb be disabled.' And this appears the more probable, as one of them might happen without the other following. And so it is quoted by Fabricius ab Aquapendente.

5. *And some again require a wound, &c.*) *Jamque alia rectam plagam desiderant, ut in carne: alia vero vehementer cutem extenuant, in quibus tota ea super pus excidenda est.* There are several variations in the reading of the copies of this paragraph, but they do not remove the difficulty. Morgagni[JO] very ingeniously conjectures, that after Celsus had considered such as were quite mature, he next mentioned such as were not quite ripe; and did not talk here of cutting off the whole skin, because he afterwards says, *Est etiam in rerum natura, ut cutis latius excidenda sit*; and that what is here said of the skin being extenuated, was repeated from above by carelessness. All the old editions and MSS. have *itemque* for *jamque*; none of them *ut*; the MS. *tuto* for *tota*. Upon the whole, he seems inclined to read it thus: *Itemque alia rectam plagam desiderant in carne; in quibus tuto ea super pus incidenda sit*; i. e. 'Others again require a wound in a straight direction in the flesh, in which it may be proper and safe to make an incision above the pus.'

6. *Crude lint.*) Fabricius ab Aquapendente and Rhodius take this crude lint to be such as has not been boiled in a lixivium.

7. *Loosing this knot. Soluto nodo.*) Morgagni[JP] here prefers the old reading, *salvo nodo*, *without loosing the knot*, for this reason, that our author immediately orders the knot to be loosed every third day, for changing the string. And thus also it is quoted by Aquapendente, De chirurg. operation. cap. 93.—Celsus has here followed Hippocrates, Lib. de fistul. where he orders the string to be drawn and twisted every day, as much

as it is loosened by the putrefaction of the fistula; but he says nothing of untying the knot every day. The difference is not material; for if *salvo nodo* be the reading, the string must be made tighter in the manner Hippocrates directs. According to the reading of Linden, the method is plain, nor does it seem to be attended with any difficulty; for it is untied twice a day to move the ligature; and also untied every third day, for the sake of introducing a fresh ligature, because the old one must not be suffered to rot.

8. *A very small habenula may be cut out.*) Linden and Almeloveen read here, *habenula tenuis admodum injiciatur*, which I think has no proper connection either with what goes before or follows. It is true, Aquapendente has given two explications of this passage, according to the same reading, De chirurg. operat. cap. 93. Neither of which appears to me consistent with the reasons Celsus gives for this method: I have therefore chosen to follow Nicolaus, Pachel, Pinzi, Junta, Aldus, and others, who have *ejiciatur* for *injiciatur*, which seems to clear up the difficulties of this place.—Our author uses *habena* often for a strap; but by *habenula* here he must understand a small slip or stripe of flesh.

9. *Gum* in this place (*pituita*) must signify a purulent fluid.

10. *Like a spatha.*) A knife was said to resemble a spatha, when it ended in an acute point with sharp edges on both sides, which our author mentions chap. x. for the excision of a polypus in the nose.—The needle here described is thin and broad, so that it was more like this instrument than a common needle. Vid. Fabric. ab. Aquapend. de Oper. Chirurg. cap. 107.

11. *Of the colour of wax.*) I have here departed from the reading of all the copies, and instead of it admit the correction of Mercurialis *cereus* for *cæruleus*, which is approved by the best judges, and seems to be confirmed by its affinity to the gold colour immediately following. Vid. Mercurial. Var. Lect. lib. v. cap. 5. & Le Clerc. Hist. de la Medicine, p. 2. liv. 4. sect. 2. chap. 5.

12. *The needle sharp pointed, but not too slender.*) The reading in Almeloveen is *Tum acus admovenda est, aut acuta, aut certe non*

nimium tenuis. As I could find no sense from this reading, or any other that is proposed, I have taken the liberty to read thus, *Tum acus admovenda est acuta, at certe non nimium tenuis*.

13. *With timidity*. *Timide.*) Though this reading may be defended, yet as what our author adds of the needle finding no resistance should make an operator more cautious, it is possible he wrote *temere*.

14. *Below the bone.*) I have here followed the old reading *sub osse*, and not as Almeloveen has it *ab osse*, which plainly appears to be erroneous by what our author says, when he mentions this species again, *Manifestum sub osse descendere*.

15. *Humour still flows.*) Here is a manifest error in Linden and Almeloveen, who read *tumor* instead of *humor*, which all the old copies have. Morgagni, ep. 5. p. 150.

16. *And therefore cannot be separated.*) In the original *Ideoque legi non possunt*. Our author here barely mentions the *lectio venarum*, and a little below speaks of it as a distinct operation in these words, *Sed nihil melius est, quam quod in Gallia quoque comata sit, ubi venas in temporibus, et in superiore capitis parte legunt*. In the conclusion of the chapter he promises a full explanation of it, when he comes to the varices of the legs. The place he refers to is the *31st* chapter of this book, where the reader will find, he does not once use the word *lego* through the whole: not that he forgot it, for he puts us in mind of this very passage in the beginning: *Huc autem et earum venularum, quæ in capite nocent,—curationem distuli*; he then proceeds to describe two methods of cure by the actual cautery, and excision. In the first process I find nothing applicable to *lego*, there as well as here, cauterizing being quite a different thing; but in the second, namely the excision, the veins are separated from the contiguous parts, and are taken up by several blunt hooks, at the distance of four fingers breadth from each other, then, one of these hooks being raised, the vein is cut through and pulled away: so in all the rest (the terms are *Excipitur*, *diducitur*, *attrahitur*, *evellitur*, *rursus abscinditur*.) Now from the various senses, which *lego* bears in the classics, it seems without a strain capable of signifying any step of this operation. And as it is not

uncommon among the ancients to include several known consequences under one term, I must own it appears to me our author intends them all, when he uses the word *lego* in this chapter.

17. *Through what remains.*) Instead of *super est* in Linden and Almeloveen, which seems to be directly contrary to our author's meaning, I read in one word *superest*, with the older editions.

18. *Defects in these three parts, if they be small, &c.*) Linden and Almeloveen read *Curta igitur in his tribus, ac si qua parte parva sunt, &c.* The more ancient editions have *Ac si qua parva paria sunt*; neither of which seem to give the author's meaning. I cannot help thinking the whole passage should run thus. *Curta igitur in his tribus, si qua parva sunt, curari possunt: si qua majora sunt, aut non accipiunt curationem, &c.* For neither *paria* nor *parte* appear to be at all proper after what was said in the conclusion of the last chapter, where he expressly confined these defects to the three parts abovementioned. I have therefore ventured to translate according to that reading; a liberty however I durst not take without advertising the reader.

19. *Sometimes however the skin—left deformed.*) I have here translated according to the reading of Linden and Almeloveen, from which I find no other variety than that of *autem* for *tamen*. But this observation by no means agrees with the general rule contained in the next words, *Hujusmodi loci altera pars incidenda, altera intacta habenda est.* If we are allowed to reject *haud*, it will run thus: *Sometimes however it happens, that to draw forward the skin on one of the sides, would effectually disfigure the part it has left.* This sense appears quite consistent both with the general rule, *Hujusmodi loci, &c.* and its application, *Ergo ex imis auribus, &c.*

20. *Two regulæ.*) *Regula* is commonly taken for a ruler. Our author himself directs a single regula to be applied to a fractured bone, where there is a protuberance, to keep that down, Lib. viii. cap. 10. In this place he mentions the end proposed by them. It seems probable that they were two pieces of wood fixed together by a hinge, and used in the same

manner as farriers use the instrument by them called barnacles.

21. *In two lines.*) Instead of *duæ tunicæ*, I read here with Nicolaus, Aldus, Stephens, and others, *duæ lineæ*.

22. *Small glands*, *Glandulis*.) Most of the old copies have instead of this word, *medullis*. But Aquapendente in quoting this place, follows the same reading with Linden and Almeloveen.

23. *The coats however, &c.*) I have here followed the old reading *tunicæ*, for *tunicarum* in Linden and Almeloveen. According to which the translation would run, 'They (*the testicles*) are pained however in wounds and inflammation of the coats, which contain them.'—Which must appear quite inconsistent with what our author had said the line before, so that Morgagni[JQ] very properly asks how they can be void of all sensation, and yet be pained in diseases of their coats?

24. *By an assistant.*) I read *ministro* instead of *sinistro*, which is in Linden.—See Morgagni, Ep. vi. p. 147.

25. *Sometimes upon account of their health. Interdum valetudinis causa.*) Some of the older editions insert before this, *Interdum vocis*, *Sometimes on account of their voice*. I do not know how this came to be dropped afterwards: for it is certain this was one very common reason for infibulating.

26. *Sticks where that grows narrower.*) In Almeloveen and Linden, *Nonnunquam etiam prolapsus in ipsam fistulam calculus, qui subinde ea extenuatur.*——-Which I think is capable of no sense, and have therefore taken the liberty to follow Morgagni's conjecture *qua* for *qui*. Ep. i. p. 38.

27. *Being first slightly anointed with oil, &c. Leniter prius unctos oleo simul in anum ejus demittit.*) The old editions, without any mention of the oil, have, *Leniter prius unum deinde alterum in anum ejus demittit*; that is, *Introduces gently the fore and middle fingers, first the one and then the other*.

28. *Come out prone*, that is, *with its end foremost*, *ut pronus exeat.*) This Constantine changed in the margin into *Ut ne pronus exeat*, which Linden received into the text. Constantine

explains *prone* by lying on its side, and says it is hardly possible to extract an oblong stone in that posture, supposing, no doubt, that it must necessarily lie across the orifice. See Morgagni, Ep. v. p. 128.

29. *Then in that part where the bottom of the wound is straiter, &c. Deinde ea parte qua strictior ima plaga est.*) Thus all the printed copies read. This passage has given rise to a variety of opinions on the nature of the first and second wound: some imagining that the first, which is called the lunated incision, was concave towards the rectum; others, on the contrary, from the word *coxæ* being used for the ilia as well as the ischia, believed it was concave towards the scrotum.

Then, with respect to the transverse incision made through the neck of the bladder, some have thought that the word transverse was used as it regarded the first wound, so that the second incision was nearly perpendicular to the first, and the urethra was divided longitudinally; others again have supposed, that the incision was made transverse, with regard to the course of the urethra, that is, the neck of the bladder was opened transversely.

Though all the printed copies agree in the above reading, yet Morgagni informs us that instead of *Qua strictior ima plaga est*, his ancient MS has *Qua resima plaga est*, which would determine the convexity of the lunated incision to be towards the rectum; because in that case the cornua of the lunated incision would point to the superior part of the body. But this reading does not fix the direction of the *plaga transversa*, whether it was called so in respect of the parts, or the first incision: nor does that ingenious author favour us with his own opinion, but seems to prefer this to the common reading. Ep. vii. p. 189.

Now it should seem almost certain, that the lunated incision was meant to be concave towards the rectum; because when made in that direction, it would probably render the rectum much more loose and supple, than it is in its natural state, and thereby greatly facilitate the operation, by allowing the surgeon a much freer use of the two fingers, which are

introduced into the rectum, and consequently admitting him to bring the stone more easily forwards into the neck of the bladder. One would suppose, however, that the benefit here suggested to arise from this lunated incision, was not extremely evident, or it would not have been dropped so early by succeeding surgeons: Ægineta makes not the least mention of this process, nor do we know when it was first discontinued. Perhaps, even in Celsus's time, there were different methods of performing this operation; for does not he himself, when describing Meges's manner of cutting upon a rough stone, omit the lunated incision? And does he not imply that there were different methods by saying, *Quocunque autem modo cervix ea parte secta est*, &c.?

With regard to the *transversa plaga*, it should seem by the use of that term, when he describes the manner of cutting women, that it was transverse with respect to the perineum; and indeed, it is natural to suppose, when the stone was brought forward by the fingers, and the neck only of the bladder was to be cut, that the incision should be made in that direction. But those, who contend that the *transversa plaga* was made transverse with respect only to the first incision, may urge, that Celsus in this very passage orders the incision of the neck of the bladder to be made so large, that the opening in the *iter urinæ* may exceed the dimensions of the stone. If, therefore, Celsus in this place intends that the urethra should be opened, one would suppose the incision must be made according to the length of that canal; but I believe it may be questioned, whether Celsus is sufficiently accurate in his notions of the anatomy of these parts, to determine his meaning by that expression.

It is very remarkable, that how much soever this operation of Celsus's may have engaged the attention of later ages, neither Galen, Oribasius, nor Ægineta make the least mention of his method: nay Ægineta (lib. vi. cap. 60.) describes the cutting on the gripe nearly as it has been practised in our own age.

30. *A crotchet*, in the original *uncus*.) Our author here describes the instrument he mentions, and as the use is the same, and the form not very different from that once employed by

modern surgeons, I have taken the liberty to use their term. But the reader will please to observe, that this *uncus* is different from that mentioned in chapter xxix. used in extracting a dead fœtus.

31. *On the external part smooth.*) As the ancient editions have *exteriori*, which is made extremely clear by our author's description, *Qua corpori jungitur*, it is hardly worth while to observe that *interiori* in Linden must be an error of the press.

32. *Knees.*) Other copies have *inguinibus*, instead of *in genibus*.

33. *Which by pressing upon the bladder.*) Instead of *Atque vesicam urgendo*, in Linden and Almeloveen, I read *Quæ vesicam urgendo*, with Nicolaus, Pachel, Pinzi, and several other old editions.

34. *Into the anus. In anum.*) This is the reading of all the copies, which I have seen; but it is highly probable our author wrote *colem* for *anum*. For as I see no propriety in introducing a pipe into the anus, so in the very case before us, a catheter in the urethra, is at present esteemed the best method of cure.

35. *Sore places.*) It appears that in this place, Celsus uses the word *cicatrix* for a wound as well as a scar, of which I do not remember another instance in his work.

36. *Which are brought to digestion.*) I have here followed the old reading, *in quibus pus moveri debet*, because I think it more agreeable to our author's practice.——Constantine had inserted *non*, in which he was followed by Linden and Almeloveen; he supported his correction by referring to p. 290. lib. 5. in the original, where Celsus gives directions about a hæmorrhage from wounds; but I own I can see nothing there to incline me to his opinion.

NOTES

TO

BOOK VIII.

1. Morgagni[JR], with Paaw, thinks it probable, that there is some chasm in the text, because Celsus does not describe the coronal suture, which he could not be ignorant of.

2. *Over these muscles too, &c. Super bos quoque musculos, qui tempora contegunt, os medium, in exteriorem partem inclinatam, positum est.*) Thus Linden and Almeloveen. All the other copies have, *sub his musculis, qui tempora connectunt*; in the following words they differ, which Ronsseus would read thus, *os medium in interiorem partem inclinatam*; in this he was followed by Paaw, who was of opinion, that Celsus intended here the *processus petrosus*; which Morgagni thinks quite foreign to the question. It is probable, says the same author, that Linden changed *sub his musculis* into *super hos musculos*, to make the description answer to the *processus zygomaticus*, which our author describes a little after, under the name of *jugale*. His own conjecture is, that Celsus wrote *sub his musculis, qui tempora continent*, and that he meant that part of the temporal bone which is covered by the crotaphite muscle. Morgag. Ep. 7. p. 212. 214. But as this description of a bone is inserted in the midst of the sutures, there is some foundation to suspect the whole to be an interpolation.

3. *The maxilla is a soft bone. Maxilla vero est molle os.*) Thus all the editions read, but Morgagni[JS] suspects *molle* should be *mobile, a moveable bone*; for Celsus himself calls the sternum a strong and hard bone, which is not to be compared in that respect with the maxilla.—It is no objection to this reading, that the author adds, *solaque ea movetur*, for that is to exclude the upper jaw-bone. The reader will please to observe, that maxilla, by our author, is applied only to the lower jaw-bone,

for he includes the upper jaw-bones under the malæ.

4. *Is broader below.*) I have here followed the proposed emendation of Morgagni, *infra* for *intra*. Ep. 1. p. 40.

5. *And all the vertebræ.*) What follows relating to the structure and connection of the vertebræ, appears to be very much corrupted, in so much, that the reading in all the copies makes our author contradict himself. I shall be content with mentioning some observations of Morgagni's upon the reading of Linden. The words in the parenthesis (says he) *exceptis tribus summis*, *except the three uppermost*, were surely never wrote by Celsus, at least not as they stand; for if the three first vertebræ want depressions in their superior surfaces, how comes the first to receive into its depressions the two small processes of the head, as our author immediately adds?

The adding of *parvis* to *tuberibus* he judges to be superfluous, because Celsus had said just before *exiguis ejus processibus*. He conjectures that *secunda superioris parti inferiori inseritur* is interpolated, because the connection is more natural without these words. A little after follows *tertia eodem modo secundam excipit*, as if a process stood out from the inferior part of the second vertebra, to be surrounded by the third in the same manner, that its processus dentatus is surrounded by the first; so that all these five words he seems with justice inclined to expunge.

After these Linden adds, *Jamque vertebra tertia tubercula, quæ inferiori inserantur, excipit*; which at first view must appear highly absurd. I therefore have followed, in the translation, the reading of Nicolaus, Pachel, Pinzi, Stephens, and Morgagni's manuscript, *exigit* for *excipit*.—See Morgagni Ep. vii. from 173 to 177.

6. *The six inferior ones.*) Almeloveen and Linden read here *septem* inferiores, others write *undecim*, as if the following description related to all the ribs. But that is false, as appears by the sequel, and it is plain, from the whole passage, our author could write nothing else than *sex*.

7. *But at the first rib, &c.*) This whole paragraph is extremely obscure. The variation of reading in the older copies does not

in the least lessen the difficulty. If we were allowed to understand by *jugulum*, *the neck*, the whole description, lame as it is, could then answer no bone but the *clavicle*; but *jugulum* in no other place of this work seems to be used for any thing else but the *clavicle*, so that *id ipsum, &c.* would appear to be the beginning of the description of that bone.—Morgagni thinks, that though the description is far from just, yet that most of the words, as they now stand, relate to the *spine of the scapula*, which may be said to sustain the clavicle; and it is observable, that if our author does not intend the *spina scapulæ* here, he makes no mention of it at all. Vide Morgagni, Ep. vii. p. 177. I must own the reading appears to me so much depraved, that it is impossible to determine, precisely, what our author has had in view.

8. *Is a little concave, &c.*) This translation follows Linden and Almeloveen. In all the other copies the reading is *leniter gibbus, et in priorem et posteriorem, interiorem et exteriorem partem*, as if the bone was concave on no side. Morgagni[JT] therefore proposes a reading agreeable to truth. *Leniter gibbus in priorem et posteriorem et interiorem, cavus in exteriorem*; *i. e.* gently convex in its fore and posterior, and internal part; concave externally.

9. *The two bones of the fore arm at first, &c.*) The reading in Linden and Almeloveen is *primo vero duo radii et brachii ossa, &c.* which at once appears to be wrong, because Celsus had said before, *quæ res sedem brachio præstat, quod constat ex duobus ossibus*, to which two he immediately gives the names of Radius and Cubitus, so that it would be sufficient, as Morgagni observes, to have wrote *duo brachii ossa*, or if they must be named *duo radii et cubiti ossa* according to the first of which I have translated. The other editions have *primo vero duobus radiis brachii ossa*. See Morgagni, Ep. i. p. 28.

10. *Properly enough, &c.*) *Sura* was the Roman name for the calf of the leg, whence our author says, that name is properly enough given to the fibula.

11. *The same may be collected.*) *Colligi idem potest.* Morgagni[JU] would have the old reading restored here, *nigrities colligi quidem potest. A blackness may be discovered*, &c. because these

words in the next chapter, *sive autem nigrities quam terebra detexit, &c.* make it plain the terebra was only used in sounding the blackness.

12. *But if the blackness goes thorough.*) Sin autem nigrities, and then there follows *est aut si caries*, which appears a manifest error by reason of what follows. With Constantine and Ronsseus, I therefore judge these words should be expunged, and have taken no notice of them in the translation.

13. *Is made by the angle of a chisel.*) I here take the reading of the older editions, *angulo scalpri sinus exiguus fit.* I suppose *sit* in Linden and the later copies has been a typographical error. See Morgagni, Ep. vi. p. 162.

14. *Being raised in the same.*) I have here translated agreeably to the old reading *excitatæ nares*, instead of which, by a palpable error, Linden and Almeloveen had *exercitatæ nares*. Morgagni, Ep. i. p. 29.

15. *The swelled part.*) In Almeloveen and Linden it is *tumens locus*, instead of which the old reading was better, *tum is locus*, *then this part*; because our author had not mentioned any swelling before. Vid. Morgagni, Ep. v. p. 140.

16. *For if any part is separated from a vertebra, or is any way broken.*) This is according to the reading of Linden and Almeloveen; but several of the older copies have *Si id, quod ex vertebra excedit, aliquo modo fractum est*; that is, *If the part, that stands out from a vertebra (the spinal process) is any way fractured*. This agrees very well with what is said afterwards of the fragments being spinous.

17. *Which should be rolled about the fracture. Quæ circa fracturam ter voluta.*) I find no various reading in any of the editions, but I think I can produce one from our author himself, who is far from a profusion of words and repetitions, and thinks this circumstance of importance enough to make a rule bcsy itself in the following words; *Satisque est eam ter hoc quoque modo circuere*. Upon his authority I have therefore ventured to omit the first *ter*.

18. *And if means only are found, &c.*) The period in Linden and Almeloveen runs thus, *Ac, si nihil aliud quam dolori*

occurrendum est, idem, qui fuit, ejus usus est; that is, 'And if nothing else is to be done but to remove the pain, its use continues the same as before.' As it is evident this cannot be our author's meaning, I have followed in the translation the old reading *occursum* for *occurrendum*.

19. *Broader than the wound.*) I follow here the old reading *latioribus* for *laxioribus* in Linden, of which I could find no proper sense. In the following words I have also removed the point at *vulnus potest* as the ancient editions have it, and the connection seems to require.

20. *Must be applied with that part, &c.*) This is according to Linden's edition.—None of the more ancient seem to give the true reading of this whole passage taken together, but some of them afford hints. Instead of *Acutæ ossis prominentis cuspidi*, Pinzi has *Recte se habendi capiti*; others *Recte se habenti capiti*. Upon the whole I think Morgagni's[JV] reflections upon this passage extremely probable; our author had before ordered a sharp point of a fragment to be either cut off or filed down and smoothed: he is now considering how the fragment itself is to be replaced. If we read it thus, the sense seems to be pretty clear: *Vulsella, quali fabri utuntur, injicienda est capiti ossis recte habenti, ab ea parte, qua sima est, &c.* that is, 'A workman's vulsella should be applied with that part, which turns inward, to the sound end of the bone, that by its convex part the prominent bone may be thrust into its place.'

21. *Unite obliquely. Solent tamen interdum adversa inter se ossa confervere.*) Thus Linden and Almeloveen.—But by what follows it is plain *adversa* was never wrote by our author in this place. Many editions have *transversa*; others *diversa*, which I think is the only probable reading, and have taken it in the same sense as Morgagni does.—Ep. vi. p. 164.

22. *Of the scapula recedes from the humerus. Os scapularum ab humero recedit.*) Morgagni very ingeniously suspects that instead of *ab humero* our author wrote *ab jugulo*, because the clavicle is joined with the scapula, as the tibia with the fibula. Ep. vii. p. 209. As it now stands *ab humero*, it would come under the second head; *Modo articuli suis sedibus excidunt.*

23. *Yet it is of no use. Et ut aliquid decoris eo loco, sic nihil usus admittitur.*) Thus Linden and Almeloveen, and I find no other variation in any of the copies, except *sit* for *sic*, which does not alter the sense. Our author had said immediately before, 'That bones thus separated never come together again,' which makes it improbable he would add, 'That some comeliness would remain.' For this reason I suspect we should read *amittitur* for *admittitur*, and then the meaning will be quite opposite, thus, 'And though their comeliness is impaired, yet their use continues the same as before.'

24. *Is less firmly held after it is reduced.*) In a luxation of the humerus from a lax habit Hippocrates advises the use of the actual cautery, but with great caution, for fear of injuring the blood vessels or tendons; and when the ulcers are clean and fit for cicatrizing, to bind the arm close down to the side, and allow no motion, that the cicatrix may contract the part the more, and strengthen the joint. He censures the practice of his predecessors, who cauterized on the external and anterior side, which ever way the bone had been luxated, and observes that when the humerus is liable to slip into the arm-pit, this would rather push it downward, than prevent its luxation. He proposed therefore the new method of applying the cautery to that part, toward which the bone is liable to be protruded. Hippocrat. de Articul. p. 787, 788, and 789.

25. *That even frequent speaking, by the motion of the mouth, hurts the nerves of the temples.*) This is according to the reading of Linden and Almeloveen. The old editions have *adeo ut sermo quoque frequens motu oris per nervos lædat*; that is, *that even frequent speaking, by the motion of the mouth by the nerves, hurts*. See Morgagni, ep. v. p. 130.

26. *Tone of the nerves be restored.*) I follow here the old editions in reading *restituta* for *destituta*.

27. *That the finger may be restored, &c.*) In Linden and Almeloveen, *ut ita in locum, unde lapsus est digitus, restituatur*. [JW]Morgagni observes, that our author had said, there were as many different cases and the same signs as in the hands; but according to this reading he takes no notice of the cure of

lateral luxations. Whereas the whole is set right by restoring the old reading, which was, instead of these words, that are quoted from the original, *Atque id, quod in latus elapsum est, digitis restitui*, *i. e.* “and that which is luxated laterally ought to be reduced by the fingers.”

28. *Having treated of the humerus.*) *Cum de humeris dixerim.* We might here (says Morgagni) have taken *humeris* for the superior extremities as *cruribus* for the inferior, but the MS. and all my editions have *cum de his dixerim: de his quoque* (or as Stephens has it *de iis quoque*) *quæ in cruribus, &c.* Ep. vi. p. 167.

29. *By keeping the middle or upper part of the joint in some canaliculus.*) This whole sentence *Potest tamen conditus articulus medius aut summus canaliculo aliquo contineri*, in all the old editions is placed at the end of the *24th* chap. and not here.—But [JX]Morgagni suspects, and as it appears to me, very justly, it should be rather referred to luxated fingers than toes, and that Linden guided by some MS. had transferred it from the *24th* to the *19th*, from whence it was transposed to this place by the carelessness of the copiers, where it stands very improperly.

THE

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A Fab. Quintilian, lib. xii. c. 11.

B Id. lib. iii. c. 5.

C Columell. lib. 2. c. 2.

D Id. lib. ix. c. 2.

E Id. lib. i. c. 1.

F Celsi praefat. lib. i.

G Biblioth. Latin. lib. ii. c. 4.

H *Nostri anginam vocant*, lib. iv. c. 4.—*Apud nos indecorum, sed commune his herniae nomen est*, lib. vii. c. 18.—*Nostri vero sub eodem nomine, quo priora habent*, ib.

I Morgagni Ep. 2. p. 41.

J *Quippe Cornelius totum corpus disciplinae quinque libris complexus est*, Columell. lib. 1. c. 1.

K Morgagni Ep. iv. p. 75.

L Præfat. lib. ii.

M Lib. iii. c. 4.

N Histoire de la medicine, P. ii. liv. iv. sect. ii. chap. 4, &c.

O Plin. Nat. Hist. lib. xxv. c. 2.

P Lib. iii. c. 5.

Q Lib. vii. c. 7. See Le Clerc.

R Though numberless passages will occur in the course of the book, where Celsus expressly delivers his own judgment, yet as the reader may perhaps chuse to have some of the most remarkable at one view, the following references will serve for that purpose. Lib. i. c. 3. p. 30. *Neque ignoro*, &c. *Commoneo tamen*,

&c. Lib. ii. c. 14. p. 88. *Quas tamen*, &c. p. 89. *Neque ignoro quosdam*, &c. Lib. iii. c. 2. p. 140. *Ego tum hoc puto*, &c. c. 14. p. 144. *Tutius tamen*, &c. c. 18. p. 150. *Quid igitur est*, &c. Lib. iv. c. 4. p. 200. *Melius huic rei*, &c. c. 17. p. 227. *Interdum teretes videmus*, &c. c. 19. p. 230. *Ego experimentis*, &c. Lib. vi. c. 4. p. 345. *Sed nihil melius est*, &c. Lib. vii. c. 12. p. 446. *Ego autem cognovi*, &c. c. 14. p. 450. *Sed abunde est*, &c. Lib. viii. c. 2. p. 509. *Neque audiendi*, &c. c. 3. p. 512. *Ut quando os perrumpitur, sentiamus*, &c. c. 4. p. 517. *Sed multo melius est*, &c. c. 8. p. 528. *Ex dolore colligimus*, &c. c. 13. p. 546. *Ponendum autem hoc esse credidi*, &c. Any person, who will be at the pains to examine these passages, will easily see, that they strongly support the conclusion drawn from the two above recited. [See Linden or Almeloveen's edition.]

S Lib. iii. c. 4.

T The first three of these epistles were annexed to an edition of Celsus, by Vulpius, at Padua, in the year 1722; five more were added to another by the same editor in the year 1752; in both which editions he has every where followed (only correcting typographical errors) the text of Almeloveen.

U Lib. v. cap. 17.

V Dissertation on the Denarius.

W Rhodius de Ponderib. et Mensur. Cels.

X Διαιτητικὴ.

Y Φαρμακευτικὴ.

Z Χειρουργικὴ.

AA Εμπειρικοὶ.

AB Φλεγμονὴ.

AC Διάφραγμα.

AD Μέθοδος.

AE κόλον.

AF ἀποστήματα.

AG μελαγχολία.

AH φθίσις.

AI στραγγουρία.

AJ εἴλεος.

AK λειεντερία.

AL σπασμὸς.

AM τέτανος.

AN παράλυσις.

AO φρεῖτις.

AP ἄφθαι.

AQ ἀκροχορδονες.

AR αἱμορῥοίδες.

AS καχεξία.

AT Εἰλικρινὲς, sincere, or unmixed; so that it is explained naturally enough by our author *integrum*, *sound*, which I chuse to render by *free from all complaint*, because we never apply the term *sound* to a body, that has any distemper hanging about it.

AU στρόφος.

AV καυσώδης.

AW φύματα.

AX αὐτόπυρον.

AY εὔχυμα et κακόχυμα.

AZ πολύγονον.

BA στρύχνος.

BB ἐμιτριτᾶιος.

BC κρισίμοι.

BD ζίσις.

BE φρεῖτις.

BF συκάμινος.

BG συκόμορον.

BH καρδιακὸς.

BI λήθαργος.

BJ ὕδρωψ.

BK τυμπανίτης.

BL λευκοφλεγματία vel ὑπὸ τὴν σάρκα.

BM ἀσκίτης.

BN σαφὶς ἀγρία.

BO κύπειρος.

BP σχῖνος.

BQ ἀτροφία.

BR καχεξία.

BS φθίσις.

BT ὠμοπλάται.

BU ἐλεφαντίασις.

BV ἀποπληξία.

BW σφαγίτιδες.

BX χαρωτίδες.

BY πυλωρὸς.

BZ οὐρητῆρες.

CA *Canalis* is our author's word.

CB περιτόναιος.

CC κεφαλαία.

CD ὑδροκέφαλος.

CE κυνικὸς σπασμὸς.

CF κορύζαι.

CG καταστα̃γμοὶ.

CH ὀπισθότονος.

CI ἐμπροσθότονος.

CJ τέτανος.

CK συνάγχη.

CL ὡς συνάγχη.

CM παρασυνάγχη.

CN δύσπνοια.

CO͂ ἄσθμα.

CP ὀρθόπνοια.

CQ διάβρωσις.

CR ῥηγμοχασμὸς.

CS ἀναστόμωσις.

CT πλευριτικὸς. Our author uses here the masculine adjective to the Latin word *morbus*.

CU περιπνευμονία.

CV ἡπατικὸς the adjective is used here in the same manner, as pleuriticus before.

CW μυροβάλανοι.

CX χολέρα.

CY κοιλιακὸς.

CZ χόρδαψος.

DA εἰλεὸς.

DB κολικὸς.

DC κολικὸν.

DD δυσεντερία.

DE τεινεσμὸς.

DF σαρκοφάγος.

DG χάλκανθος.

DH σχιστὸν.

DI ἀναστομῶυν. This word Celsus here translates literally *to open like a mouth*.

DJ ἀρσενικὸν.

DK τιθύμαλλος.

DL σκορία μολύβδου.

DM ὀβολὸς.

DN τροχίσχοι.

DO πεπλυμένον.

DP ἐπισπαστικὰ.

DQ ἄπυρον, that has not passed the fire.

DR χαρχινωδὴ, cancerous.

DS μιλιχηρίδες.

DT φύγεθλον.

DU ἀναστομωτικὰ.

DV ἀγκύλη.

DW ἔναιμα.

DX ἀλίπαινα.

DY παρακολλητικὸν.

DZ κηφαλικὰ.

EA τετραφάρμακον, or consisting of four medicines.

EB ἐννεαφάρμακον, of nine medicines.

EC τεθεραπευμένα.

ED ἐπισπαστικὰ.

EE διὰ δαφνίδων.

EF ῥυπῶδες.

EG σηπτικὰ.

EH λευκὰ.

EI λιπαρὰ.

EJ σφραγὶς.

EK πεσσοὶ.

EL ἐλαιῶδες.

EM ἔγχριστα.

EN ἀνώδυνα.

EO ἰχὼρ.

EP μελίκηρα.

EQ ἐλαιῶδες.

ER ἀγκτῆρες.

ES ῥύπτουσα.—Our author has not mentioned this plaister before, at least not under the same name.

ET ἐρυσίπελας.

EU γάγγραινα.

EV ἀπεσχαρωτικὰ.

EW λιπαρὰ.

EX ὑδροφοβία.

EY ἡλιοτρόπιον.

EZ καρκίνωμα.

FA κονδυλώματα.

FB κακόηθες.

FC θηρίωμα.

FD ἕρπης ἐσθιόμενος.

FE κηρίον.

FF ἀκροχορδὼν.

FG ἀκροθύμιον.

FH μυρμήκια.

FI ἐξανθήματα.

FJ φλύκταιναι ἑλκώδεις.

FK φλυζάκιον.

FL ἐπινυκτὶς.

FM ἀγρία.

FN ἄλφος.

FO μέλας.

FP λεύκη.

FQ σύκωσις.

FR ἀλωπεκία.

FS ὀφίασις.

FT φακία.

FU ἐφηλὶς.

FV στόμωμα.

FW ἀχάριστον.

FX πρόπτωσις.

FY διὰ λιβάνου.

FZ φθειρίασις.

GA διὰ κέρατος.

GB μεμιγμένον.

GC ξηροφθαλμία.

GD διὰ κρόκου.

GE ὑπόχυσις.

GF μυδρίασις.

GG ὄζαινα.

GH πολύπους.

GI ἀθηραὶι.

GJ παρουλίδες.

GK παρωτίδες.

GL φαγέδαινα.

GM ῥαγάδια.

GN αἱμορῥοίδες.

GO πτερύγιον.

GP γραφίσκος Διοκλέους.

GQ γάγγλια.

GR μελικηρίδες.

GS ἀθερώματα.

GT στεατώματα.

GU κριθὴ.

GV χαλάζια.

GW πτερύγιον.

GX ῥυὰς.

GY ἐγκανθὶς.

GZ ἀγκυλοβλέθαρον.

HA αἰγίλωψ.

HB λαγώφθαλμος, or hare's eye, outward.

HC ἐκτρόπιον, from turning.

HD σταφύλωμα.

HE κερατοειδὴς.

HF χοριοειδὴς.

HG ἀραχνοειδὴς.

HH ὑαλοειδὴς.

HI ἀντιάδες.

HJ βρογχοκήλη.

HK κρεμαστὴρ.

HL λυτροειδὴς.

HM δαρτὸς.

HN ὀσχεὸν.

HO ἐντεροκήλη.

HP ἐπιπλοκήλη.

HQ ὑδροκήλη.

HR κιρσοκήλη.

HS σαρκοκήλη.

HT βουβωνοκήλη.

HU Οὐροῤῥυὰς: this word, as far as I can find, occurs no where else. It is variously written in the different editions. The sense seems to determine it to what I have expressed in the translation, with which the etymology of it agrees.

HV λιθοτόμος.

HW ζυγὼδες.

HX τομικοὶ.

HY κερκὶς.

HZ χοινίκιον. This was the name of a measure among the Greeks, and from its resemblance in shape, they have probably used the same word for this chirurgical instrument; for the same reason, I suppose the Romans have named it *modiolus*. Though I have chosen to retain our author's term, yet the reader will see the difference is not material betwixt that, and the trepan of our surgeons; the terebra comes so near to the perforator, that I have used the modern term for it.

IA Μηνιγγοφύλαξ: the etymology of this word answers exactly to its use: it is delineated by Scultet. tab. 2. fig. 9.

IB λεπὶς.

IC morae.

ID Ep. iii. p. 53.

IE Ep. vii. p. 187.

IF Ep. iv. p. 89.

IG Lib. 5. c. 26. p. 301.

IH Plin. epist. 6. lib. v.

II Vitruv. lib. v. c. 10.

IJ Senec. epist. lxxxvi.

IK Ep. 6. p. 148.

IL Strabon. lib. iv. p. 192. See Athenæus—A. Terent. in Adelph.

IM Ep. 6. p. 133.

IN Dioscorid. lib. v. c. 801.

IO Nat. Hist. lib. xiv. c. 8.

IP Ep. 7. p. 172.

IQ Ep. 5. p. 139.

IR Lib. II. de Vulnerib. cap. 8.

IS Ep. 5. p. 132.

IT Lib. ii. cap. 389.

IU Ep. 6. p. 145.

IV Ep. 6. p. 157.

IW Lib. viii. cap. i.

IX Ep. 5. p. 115.

IY Ep. 5. p. 139.

IZ De Acut. Morb. lib. i, cap. 15.

JA Dioscorid. lib. i. cap. 5.

JB Ep. 7. p. 180.

JC Ep. 1. p. 32.

JD Ep. 6. p. 144.

JE Ep. 6. p. 149.

JF Chirurg. p. i. lib. iv. cap. 6.

JG Oper. Chirurg. lib. i. cap. 18.

JH Book i. chap. 17.

JI Ep. 7. p. 206.

JJ Ep. 6. p. 144.

JK Ep. i. p. 36.

JL Ep. vi. p. 162.

JM Ep. 6. p. 145.

JN Ep. vi. p. 146.

JO Ep. vii. p. 181.

JP Ep. vi. p. 151.

JQ Ep. v. p. 135.

JR Ep. 4. p. 91.

JS Ep. 7. p. 211.

JT Ep. vii. p. 216.

JU Ep. vi. p. 159.

JV Ep. v. p. 129.

JW Ep. vi. p. 166.

JX Ep. vi. p. 169.

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Corrected misspellings include the following:
necesssary → necessary
belived → believed
plaintain → plantain
accout → account
paroxyms → paroxysm
cardamon → cardamom
prescriptipn → prescription
inflammmation → inflammation
w ich → which
n → in
wiound → wound
j w → jaw
humour → tumour
chissel → chisel
Hippocates → Hippocrates
Baslam → Balsam
the the → the
linimen → liniment

intrument → instrument
carelesness → carelessness

Spelling inconsistencies include (but not limited to) the following:
antient/ancient
aromatick/aromatic
cummin/cumin
diuretick/diuretic
encrease/increase
fore arm/fore-arm/forearm
haemorrhage/hæmorrhage/hemorrhage
milstone/mill-stone
teprion/tephrion
tremor/tremour

The following typographic errors have been corrected:
a) the block of index entries commencing with U were incorrectly placed *after* V and have been repositioned;
b) an incorrect index page reference to ‘Passum’ has been corrected;
c) a group of Book V notes that were incorrectly numbered 89–96 have been renumbered 84–91 to correspond with the text anchors;
d) an incorrectly numbered note in Book V has been renumbered Note 63a;
e) incorrectly numbered Note 1 in Book VI has been renumbered as Note 92 in Book V.

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