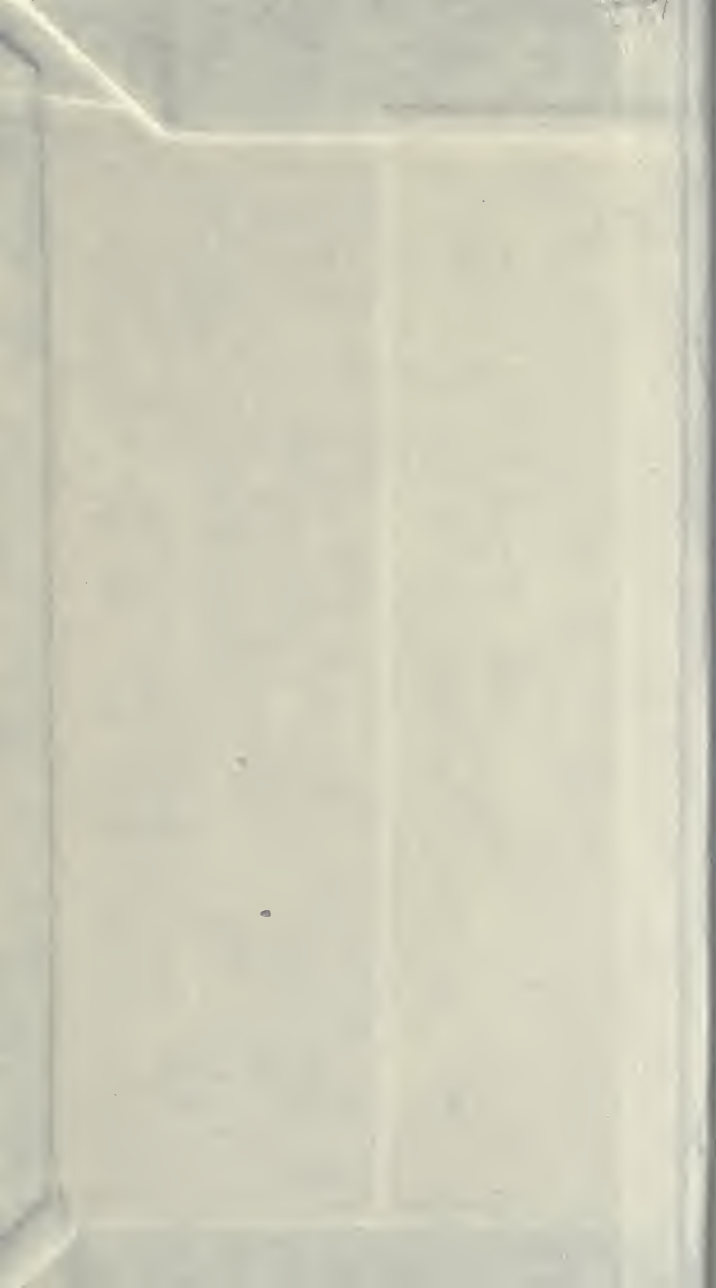
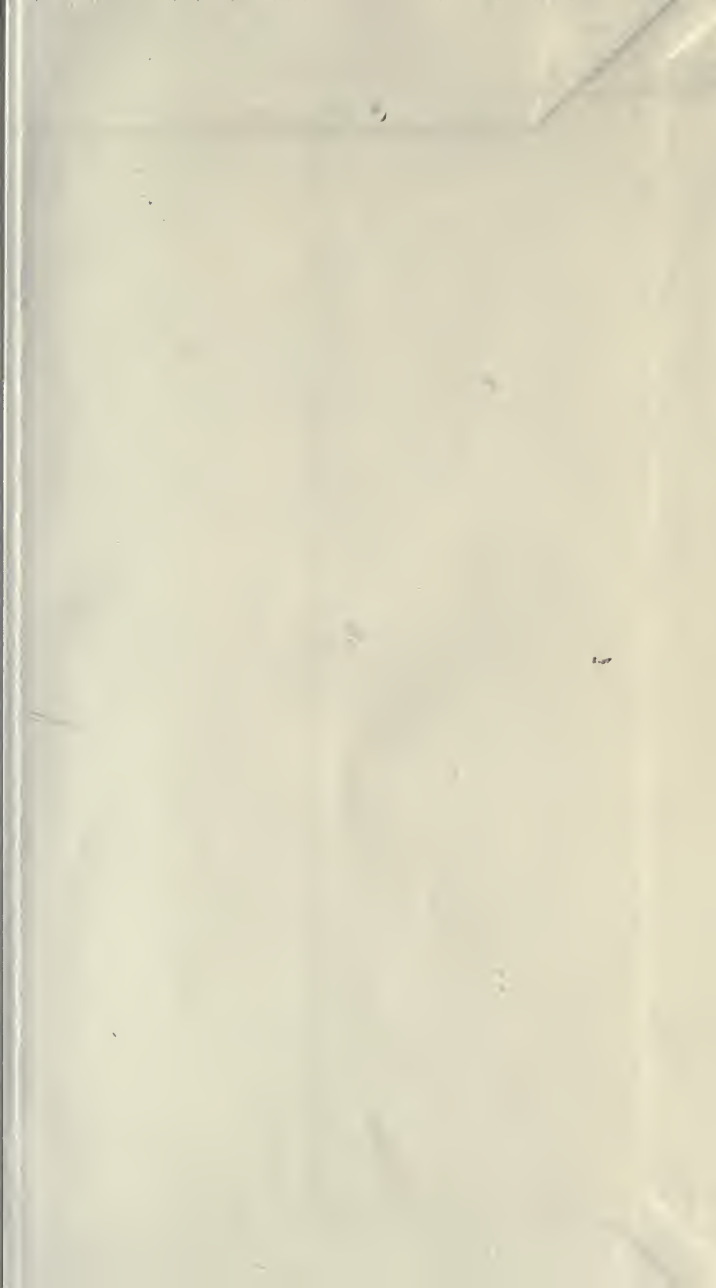





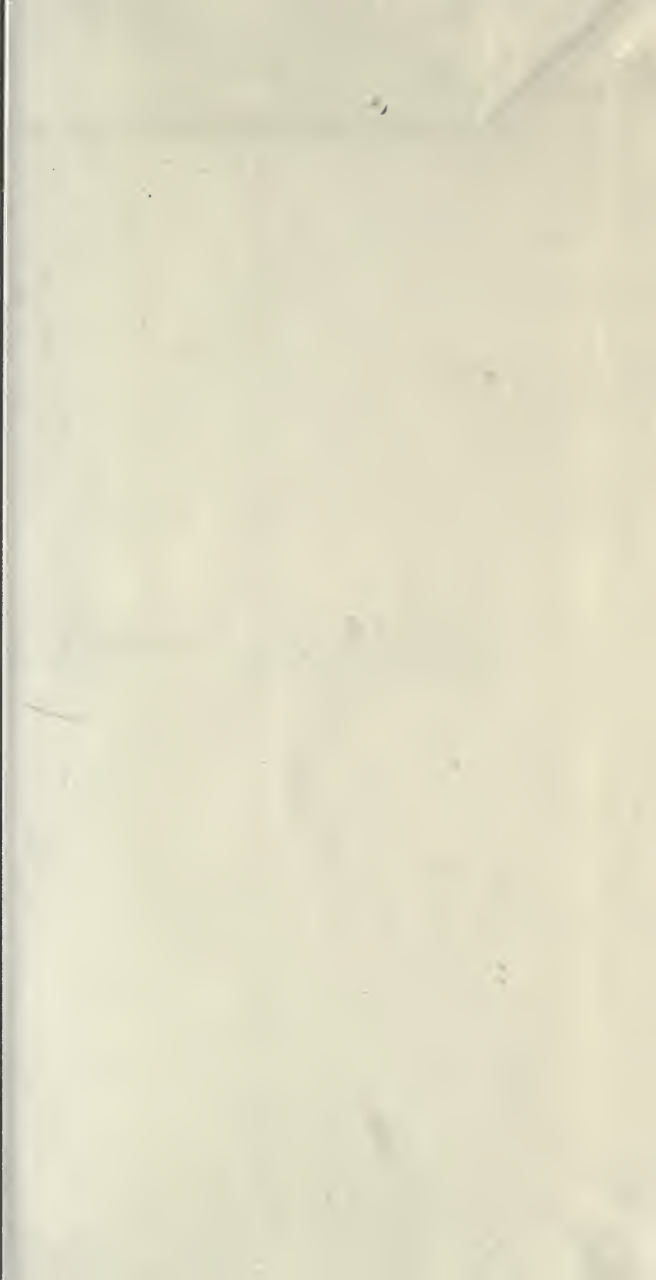
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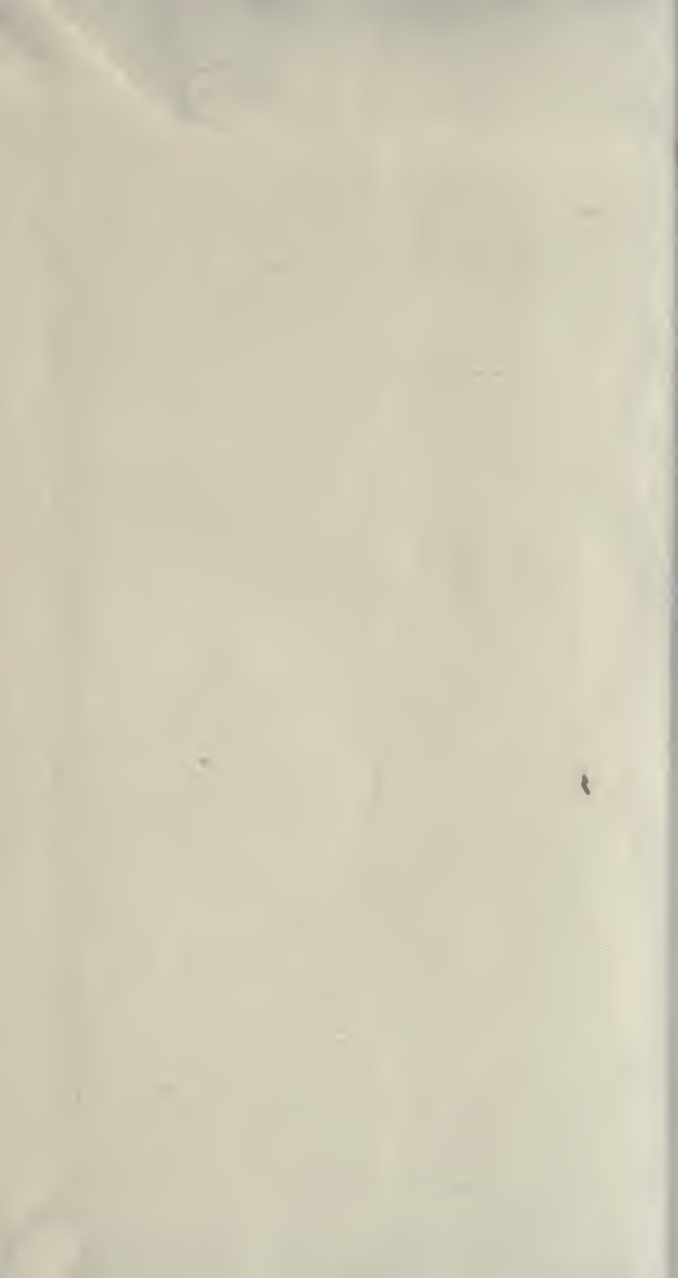






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GREGORY'S CONSPECTUS.

GREGORY'S CONSPECTUS.

A

LITERAL INTERLINEAL TRANSLATION

OF THE

FIRST TWENTY-THREE CHAPTERS

OF

GREGORY'S

CONSPECTUS MEDICINÆ THEORETICÆ;

BEING THE FIRST PART, AND

COMPREHENDING THE

FUNDAMENTAL PRINCIPLES AND GENERAL DOCTRINES

OF

PHYSIOLOGY AND PATHOLOGY:

WITH ORDO VERBORUM, AND THE TEXT UNDERNEATH.

TO WHICH ARE ADDED,

RULES FOR CONSTRUING AND ARRANGING THE WORDS
OF LATIN SENTENCES

IN LEGITIMATE ORDER FOR TRANSLATION:

ILLUSTRATED BY EXAMPLES FROM THE MORE DIFFICULT PASSAGES
OF GREGORY AND CELSUS.

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“ Quid tristes querimoniae
Si non supplicio culpa reciditur.”—HOR.

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INTRODUCTION.

RULES FOR CONSTRUING, &c.

LANGUAGE is the medium by which men convey their ideas, wishes, commands, &c. to each other. It consists of sentences: sentences of words; words of syllables; and syllables of letters. Words, then, are considered by grammarians as forming what are termed parts of speech. Of these, some are declinable,—that is, they admit of certain inflections, terminations, &c., by which the signification is considerably modified or altered: others admit of little or no variation, and are therefore named indeclinable. The parts of speech in the Latin language are eight; of which, four are declinable, four indeclinable.

Declinable.

Noun,
Pronoun,
Verb,
Participle.

Indeclinable.

Adverb,*
Preposition,
Conjunction,
Interjection.

The construction of a language is the arrangement of the words, with the proper inflections of those which are declinable, so as to convey the meaning of the speaker to the hearer. The arrangement and inflection of words in every language is regulated by rules or principles, named the grammar of such language, and which therefore has been defined “the art of speaking and writing a language correctly.” It consists of four parts: Orthography, which is the proper selection and arrangement of letters, so as to form syllables or words; Prosody, the giving to syllables their due sound or intonation, and quantity; Etymology, which teaches the derivation of words from their primitives and radicals, and also the inflections of which they are capable; lastly, Syntax, which comprises the rules for the government of words, by which their mutual relations and dependencies are shewn or inferred.

A word is the expression of an idea, or, as defined by Locke, “the sensible sign of the idea of the speaker.” However, we have not a separate and distinct word for every idea. This would render language so extensive as to be not only burthensome, but absolutely useless: there are, therefore, certain primitive or radical significations attached to certain words; but these words are also used to express other ideas,—deductions, as it were, from the original. Hence the significations of words may be reduced to three heads: the primary or radical, the elliptical, and the metaphorical. The varied significations will probably be illustrated by the great variety of meanings conveyed by the Latin word *ratio*; which is used to denote the operation of the reasoning faculty,—to denote the cause, the manner, instrument, &c., the state, condition, and a great variety of

* This frequently admits of comparison.

others, which will readily appear in the various applications of it in this work.

Sentences may be considered of two kinds: 1st, simple; 2d, compound. A simple sentence is that which contains one simple proposition, whether affirmative, negative, or descriptive: it must, therefore, contain a nominative case and a verb, at least. A compound sentence is that which contains several, and they are called clauses, which are united by what are termed couples. Couples are of four kinds: 1. the relative *qui*; 2. certain comparative words,—*tantus*, *quantus*, *talis*, *qualis*, *tam*, *quam*, &c.; 3. indefinites; 4. conjunctions. The art of construing them consists in so arranging the different clauses of a sentence, and the words of each clause, as that they shall express and convey the meaning of the author in equivalent terms and parallel modes of expression: for this purpose, the following rules will be found serviceable.

RULE I. “In every sentence, first seek the *nominative* case, which, with its adjuncts, *adjectives*, *participles*, &c., if there be any, should be construed first; next take the verb; then the word governed by the verb; lastly, the prepositions, followed by the words which they govern.”

Paragraph 9 illustrates this rule: in which *functiones*, the nominative, is taken first, and the verb *vocantur* immediately after. Par. 6 illustrates the taking nominative *machina*, with its adjuncts, *animalis*, &c. (for whether the adjunct precede or follow its substantive depends upon circumstances, to be explained hereafter,) is taken before the verb *defluit*. A similar illustration is also to be found in the beginning of the next paragraph, 7.

In par. 1, we see the nominative *corpus*, with its adjuncts, *humanum* and *fabricatum*, taken first; then follows the verb *fungitur*; after which we take *muneribus*, preceded by its adjuncts, *multis* and *miris*, because it is governed by the verb. The next clause, *quorum alia pertinent ad externas res*, shews the nominative, followed by the verb; to which succeed the preposition *ad*, and the words governed by it.

RULE II. “When a noun governs another word in the genitive, generally the genitive is construed immediately after the word which governs it.”

ILLUSTRATIONS.*

GREGORY.

Sed nusquam alma rerum parens prolem.—Paragraph 7.

Attrito enim corpore parteque humorum absumpta.—P. 8.

Hæc autem Naturæ lex, hoc consilium.—P. 13.

Sed ipse terrarum, et quæ eas incolunt animalium, dominus.—P. 14.

Non secus enim ac vultus corporis constitutiones variant.—P. 15.

CELSUS.

Qui quoniam adhuc rudem, &c. in Deorum numerum receptus.—Præfatio.

Ex quo apparet has partes medicinæ solas.—Ib.

Morbos tum ad iram Deorum immortalium relatos esse.—Ib.

Primoque medendi scientiæ sapientiæ pars habebatur, ut et morborum curatio et contemplatio rerum naturæ.†—Ib.

RULE III. “An infinitive mood, when governed by another verb, is generally to be construed after it.”

* The words in Italics are those which exemplify the applications of the rules, and therefore the text only will be given. A reference to the translation will explain any thing further that may be required.

† In this last, *contemplatio* governs *naturæ*, and *naturæ*, again governs *rerum* in the genitive, which consequently is construed immediately the governing word.

Ad alterum genus *referrī solent* actiones cunctæ.—P. 4.

— ne quidem per exiguum tempus *suspendi* aut *interrumpi queant*.—P. 5.

— sed quæ paulisper facile, et sine periculo *suspendi possunt*.—P. 9.

— eadem *gaudet exercere munera*.—P. 14.

RULE IV. "An adjective or participle, when *no other word depends* upon it, must be construed *before* its substantive."

Ad alterum genus referuntur *omnis sensus* sive animi *voluntarius*.—P. 2.

— quibus quantumvis *simplicibus viribus*.—Ib.

Hæ *functiones animales* apud medicos dicuntur.—Ib.

— *longâ* enim aut *validâ* sive corporis sive animi *exercitatione*.—P. 3.

— et tandem *dulci necessitate* cogimur.—Ib.

— et ad *omnia vitæ munera* aptissimi.—Ib.

Eodemque quoque auctore *disci potest*.—Præf.

— donec majore studio *literarum disciplina agitari, cæpit*.—Ib.

Quamvis ne hæc quidem sic *præteriri debent*.—Ib.

Incidere autem *vivorum corpora* et crudele et supervacuum *est*.—Ib.

Ut *alimenta sanis corporibus* Agricultura.—Præf.

— siquidem etiam *imperitissime gentes* herbas, &c.—Ib.

Qui, quoniam adhuc *rudem* et *vulgarem* hanc *scientiam* paulo subtilius excoluit.—Ib.

— neque in *variis generibus* morborum aliquid attailisse auxilii.—Ib.

— qui corporum suorum *roborâ in quietâ cogitatione nocturnâque vigiliâ* minuerant.—Ib.

RULE V. "But, if the adjective or participle govern a word, or have an immediate relation to some other word, then the adjective or participle must be construed after its substantive. This rule also applies when the English of the participle may be preceded by the words *being, when, while*, without being *ablatives absolute*."

Corpus humanum arte prorsus *divina fabricatum*.—P. 1.

— quarum ope *corpus* vivit, *exhaustumque* reficitur, *corruptumque* purgatur.—P. 4.

Machina vero animalis sic *constituta* statim defluit.—P. 6.

Hæ vocantur *functiones naturales*, ad *vitam* quidem *necessariæ*.—P. 9.

Primo statim aspectu, talis *machina*, nisi forte, ab aliquâ causâ *externâ, corrupta vel læsa*, &c.—P. 12.

Idoque multiplex *ista medicina*, neque *olim* neque apud *alias gentes* *necessaria*.—Præf.

— obscurarum vero *causarum* et *naturalium actionum* *quæstionem* ideo *supervacuam* esse contendunt.—Ib.

— quoniam non *comprehensibilis natura* sit.—Ib.

— tentaturumque *remedia similia* illis, quæ vicino malo sæpe succurrerint.—Ib.

RULE VI. "In an ablative absolute,* construe the adjective or participle after the substantive with which it agrees."

Attrito enim *corpore*.—P. 8.

— *partequè* humorum *absumptâ*.—Ib.

— *labentibus annis*, et ipse dilabitur.—P. 12.

— tandem, *ingravescentibus annis* communem sortem subiturus.—P. 14.

— aut si *salvâ* omnino singularum partium *fabricâ*.—P. 25.

— veluti si propriis *amissis* vel *corruptis dotibus*.—Ib.

Aucta adhesionè seu *firmitate* partis *cujusvis solidæ*.—P. 81.

— *magnâ siti antecedente*, frigida aqua copiose præstanda est.—Lib. iii. cap. vii. 22.

— biduo proximo se abstinere, *frictione servatâ*.—Ib. cap. xv.

— que tertio, *calidâ aquâ* tantummodo *assumptâ* si est sitis.—Ib.

— nisi interdum *horrore jam discusso*.—Ibid.

— at Asclepiades tanquam *tenebris ipsis terrentibus* in lumine habendos eos dixit.—Ib.

* The sign of this ablative is, *being, having, having been*, or *while*, as sole oriente, while the sun is rising; deponents, as they have not a passive signification, are Englished *having*.

RULE VII. "If two adjectives or two participles agree with the same substantive, they must be taken either *both before* or *both after* their substantive: not the one before and the other after."

Thus, in par. 8, Gregory, *putrescentes* and *corrupti* are both taken before their substantive *humores*; and, in 10, *vitalibus* and *naturalibus* before *functionibus*; also, *omne* and *humanum*, in the same paragraph, are taken both before *ingenium*: in which examples, it will be seen that the adjectives could not properly be separated by placing the substantives between them. But a substantive may be placed between an adjective and participle, both agreeing with it, as, *Humanum corpus fabricatum*; in which, *corpus*, the substantive, is placed between *humanum*, its adjective, and *fabricatum*, its participle, because *fabricatum* governs *arte divinâ*, as the means, &c., and therefore the relation is too immediatè to admit of separation.

RULE VIII. "The relative, with its clause, should be construed as soon as possible after its antecedent."

Contra non modo his malis quæ semper et ubique necem minitantur et, &c.—P. 7.

Sed ipse terrarum dominus, et quæ eas incolunt animalium.—P. 14.

— tamen ad certa capita non inepte referri solent, quæ temperamenta κατ' ἐξοχήν dicuntur.—P. 15.

Harum rerum, quæ omnes ad sanum corpus pertinent.—P. 20.

Igitur ii, qui rationalem medicinam profitentur; hæc necessaria esse proponunt.—Præf.

— eum quærendum esse, qui facillime teri possit.

— considerarintque ea quæ natura ante clausisset.—Præf.

Sanus homo, qui et bene valet, &c.—Lib. i. cap. i.

RULE IX. "Certain adverbs and conjunctions are to be construed before the nominative case and verb; that is to say, they are to be construed first in their own clause: likewise the relative and the interrogatives, *quis*, *quantus*, *quicumque*, and such like, with their accompaniments, whatever case they may be in."

Hæc autem Naturæ lex.—P. 13.

Denique status æris.—P. 87.

Postremo vitæ genus ad eundem effectum nonnihil confert.—P. 88.

Verum, salva omnino compositione chemica solidarum partium, harum conditio.—P. 89.

Quantum hic valeat compressio mechanica.—P. 90.

Quandocunque status partis cujusvis generis nervosi, &c.

Veruntamen apud Græcos aliquanto magis, quam in cæteris nationibus exulta est.

Si quidem hæc duo corpora.

Ideoque multiplex ista medicina.

— ut vera sit illa transfusio.

Interest enim fatigatio morbum fecerit.

Quamvis ne hæc quidem sic præteriri debent.—Præf.

RULE X. "In interrogative sentences, construe the nominative case (unless the interrogation be made by one of the interrogatives, *quis*, *quæ*, *quid*, *quod*, *quotus*, *quantus*, *uter*, &c., with their adjuncts,) after the verb, or between the English verb and the auxiliary,* putting the auxiliary first."

We have examples of this rule in Celsus. *Cur enim potius aliquis Hippocrati credat quam Herophilo*: For *why should any one* believe. *Cur huic potius quam Asclepiadi*.

The interrogatives, *quis*, *quantus*, *quotus*, &c. are to be construed, by Rule v., before the verb.

* These auxiliaries are, *is*, *are*, *has*, *have*, *may*, *can*, *might*, *would*, *could*, *should*, *does*, *do*, &c.

RULE XI. "After the verb *sum*, a verb passive or neuter, a nominative is sometimes supplied or repeated. Examples of this kind are so frequent in *brackets* in the translation, that particular illustrations seem to be unnecessary."

RULE XII. "An adverb should not be joined with a substantive, but rather with a verb, participle, or adjective."

- arte *prorsus divina*.—P. 1.
- *utræque sponte putrescunt*.—P. 6.
- *brevi ipse sibi homo acerrimum venenum compararet*.—Ib.
- Sed *nusquam alma rerum parens prolem describit*.—P. 7.
- *quæ semper et ubique necem minitantur*.—Ib.
- *ut mente quamvis sagace*:—*toties exploratum*:—non capiatur.—P. 10.

- Proprie quædam ad eum pertinent*.—Lib. i.
- *interdum valetudinis causa recte fieri, experimentis credo*.
- Quibus juvenibus fluxit alvus plerumque in senectute contrahitur*.
- Quibus in adolescentia fuit adstricta, sæpe in senectute solvitur*.
- Æstate vero et potione et cibo sæpius corpus eget*.

RULE XIII. After prepositions, look for the cases which they govern; which are mostly accusatives, ablatives, and occasionally genitives.

- Ad tertium genus signorum morborum*.—P. 35.
- *res omnes in ægro præter naturam observandæ*.—Ib.
- *neque ad alia genera pertinentes*.—Ib.
- *de quibus nostris sensibus*.—Ib.
- Alii demum ad ætherem universalem potius confugerunt*.—P. 121.
- Alterâ vero res quæ vulgo sub nomine sensus comprehenditur*.—P. 131.
- Sive ista mutatio ab externâ causâ sive ab internâ facta sit*.—P. 133.
- *tum propter lentem flavescentem instar electri factum*.—P. 263.

- *que fere post longam sitim, &c.*
- *per quem ingens sudor effunditur*.
- *sed in iis tamen in quibus præter ardorem*.
- Hæc ad omnes circuitus febrium pertinent*.
- *ante accessionem sorbere*.
- *ut moveatur ex eo statu, quo detinetur*.
- *nisi a sano quoque aliquamdiu timetur*.
- Inciplam ab insania*.

Observe that, in most of the foregoing examples, the prepositions, with the words governed by them, follow some finite verb;* but, if the verb be passive, or even in other cases, the preposition, with its adjuncts, may be construed first, as, *Ad alterum genus referuntur*: To the one kind are referred, &c.

The last example, P. 263, is one of a preposition, *instar*, governing *electri* in the genitive.

RULE XIV. "The governed word should be construed after, generally immediately after, the word which governs it, (except the words specified in Rule IX., and which must follow prepositions). Infinitives, governed of finite verbs, should be rendered as soon after the finite verb as possible."

- Secunda igitur valetudo nullis est definienda verbis*.
- *cui mens sana, optimum Dei donum, data est*.—P. 18.
- Sic etiam a tactu, voluptas aut dolor oriri possunt*.—P. 176.
- Lævorem mollitiem, &c. cum voluptate contemplari solemus*.—Ib.

- *neque multa pinguedine grave*.
- *et amplo imprimis thorace latisque humeris instructum*.
- In hoc genere morborum etiam misisse sanguinem concussisse corpus habuisse in lumine, imperasse famem sitim, &c. prodest*.—Lib. iii. cap. vi.

* A finite verb is one which is in one of the finite moods, indicative, subjunctive, &c., to distinguish it from the infinitive, which has not a finite signification.

RULE XV. "When in a sentence there is no finite mood, but that the verb is in the infinitive mood, the nominative being either expressed or understood, the infinitive is to be construed as the indicative or some other finite mood, the nominative being construed in its proper place."

There is but little exemplification of this Rule. The occasions are confined principally to the poets and historians, who, in fact, would elevate their descriptions to the sublimity and rapidity of the actions they describe, by the use of infinitives, in preference to finite moods. The only instance is in Gregory's quotation from Ovid:

Nam modo te juvenem, modo te leonem *videre*,

which is put for *videbant*. There are, however, many instances in poets, and in Sallust.

Ego illud sedulo

Negare factum. (*Negare* for *negabam*.) TERENT.

Hinc semper *Ulysses*

Criminibus *terrere* novis: hinc *spargere* voces

In vulgum ambiguas; et *quærere* conscius arma.

(For *Terrebat*, *spargebat*, and *quærebat*.) VIRG.

Tum *pious Æneas* humeris *abscindere* vestem

Auxiliaque *vocare* Deos et *tendere* palmas.

(For *abscindit*, *vocat*, and *tendit*.) IBID.

Igitur *reges populique* finitimi bello *tenture* (pro *tentabant*) *pauci* ex amicis auxilio *esse* (pro *erant*). SALLUST. *Bel. Cat.*

At *Romani domi militiæque* intenti *festinare* (*festinabant*) *parare* (*parabant*) *alium* (*alium*) *hortari* (*hortabatur*) *hostibus* obviam *ire* (*ibat*) *libertatem patriam* parentesque armis *tegere* (*tegebat*). IBID.

The imperfect tense appears to be the proper tense for such infinitives; but our language often prefers the present.

RULE XVI. "When an infinitive mood has an accusative case before it, and which is not governed by any other word, such accusative, with its adjuncts, is to be translated as a nominative; the English for *ut* or *quod* to be supplied, and precede the nominative, and the verb rendered finitely, as if in the subjunctive mood."

This construction is very frequent, especially in Celsus, for it was considered an elegant mode of expression. It is particularly suitable to the recital of the assertions made by others; hence it occurs in almost every page of the Preface to the first book of Celsus.

Sunt qui credunt *musculos a nervis oriri et formari* et ex eadem materia *constare*. GREG. p. 113.

*That the muscles arise and are formed and consist, &c.**

Sive *omnes eodem tempore*, sive *alias post alias certo ordine produci* credamus. IBID. 114.

Interea tamen non dissimulandum est, *partes quasdam musculosas* perquam mature in *fatu conspici*. P. 114.

— et insignem vim et robur jam *adeptas esse*. P. 114.

— *earumque actionem* ad hujus functionem et augmen *requiri*. P. 114.

— et *musculos semper partibus vere nervosis multo firmiores esse* et vim propriam, irritabilem nimirum, *habere*. P. 114.

— tum facile patebit *multam substantiam nervosam cum musculo* semper *misceri*. P. 115.

* The reader is referred to the translation for the method of rendering the succeeding illustrations.

— et experientia his mille annorum satis superque demonstravit *sapientissimos etiam hominum*, Naturæ arcana conjectando rarissime *detegere*. P. 117.

— vel saltem credibile factum fuerit talibus conjecturis *nodum solutum iri*. P. 122.

Here the student must recollect that *solutum iri* is the future of the infinitive passive.

Post quos Serapion primus omnium nihil *hanc rationalem disciplinam pertinere ad medicinam* professus. CELSUS.

— quod alii sibi *experimentorum tantummodo notitiam necessariam esse* contendunt. IB.

— *hæc necessaria esse* proponunt. IB.

Neque enim credunt *posse eum scire*. IB.

Neque *esse dubium* quin alia curatione opus sit. IB.

Eum vero recte curaturum (esse). IB.

Neque vero inficiantur *experimenta quoque esse necessaria*. IB.

Non enim quidlibet *antiquiores viros ægris inculcasse sed cogitasse* quid maxime conveniret, et id usu *explorasse*, &c. IB.

Neque *interesse* an nunc jam pleraque explorata sint. IB.

It will be observed that this infinitive, like the subjunctive with *quod* or *ut*, for which it is an elegant substitute, and by which it may be resolved, depends upon some other verb, expressed, implied, or understood. In many of the examples the verb is expressed,—for instance, *credunt, proponunt, ferunt, &c.* In some it is implied or understood, as in *Neque esse dubium, Neque interesse*. In the last, any of the verbs may be supplied, as *contendunt*, and the construction resolved by the subjunctive with *quod* or *ut*,—as *contendunt quod neque dubium sit:—quod neque intersit, &c.* This Preface always proves a source of difficulty and perplexity to the student; but these may be readily surmounted, by recollecting that the statements are not those of Celsus himself, but of the different sects, whose arguments he is merely setting forth. Therefore, by practising the resolving these constructions by *quod* or *ut*, the student will soon become acquainted with their nature and import.

The student should attentively observe that the *times* of this *Infinitive* depend upon and vary with the *times* of the *antecedent finite verb*: for instance, *hæc esse necessaria proponunt*, and *proposuerunt*, infer very different times of *esse*. In the first example the time of *esse* is present, as, they *assert* that the following *are* necessary: in the second *esse* is past, as, they *asserted* that the following *were* necessary. In par. 120, quos *fieri et necessarios esse contendebant*, the reader will find on referring to the translation, that *fieri* and *esse* are put in the past, in consequence of the time of *contendebant*; and the same applies also to *inesse, moveri, and possidere*, depending entirely for *their time* upon *that* of the *antecedent verb fingeant*. The reader will observe similar examples in the infinitives in the next par. 121.

RULE XVII. “Words in the same case by apposition are to be construed, as nearly as possible, together.”

Words are said to be in apposition when they denote the same thing; for instance—

Nam modo *te juvenem modo te leonem videre*.

— magis perspicua ratio redditur *sensuum qui dicuntur interni memoriæ scilicet imaginationis et judicii*. GREG. p. 124.

Ex quavis externa causa nimirum *impulsu*. P. 143.

Varias *qualitates corporum tactus percipit duritiem mollitiem asperitatem lævitatem calorem frigus figuram distantiam pressuram pondus*. P. 171.

Deficit in parte singulare vel a *vicio ejus nervi, compressione obstructione vulnere*. P. 174.

Hujus deinde duo filii Podalrius et Machaon bello Trojano duces Agamemnonem secuti.

In all these examples, the first word is governed by a special rule of syntax, but the other words are placed in the same case by apposition: thus *duces* is governed in the *accusative* by the deponent participle *secuti*, and *Agamemnonem* is placed in the same case, by apposition as it is called. The construction, however, is probably elliptical, and may be supplied by the obsolete particle *ens*.

RULE XVIII. "All correspondent words must be construed as near to one another as possible."

The words comprehended under this rule are,—*talis-qualis, ita-ut, eo-quod, usque-ad, eo-usque, prius-quam, potius-quam, secus-ac, perinde, ac, adeo-ut, &c.*

Although such words may, in the Latin arrangement, be placed far apart from each other, yet in construing they should be brought together, or as nearly so as possible.

— Medici prius disputaverint, quam vel observando, &c. GREG. p. 122.

— neque fere tales ante extitisse sciamus quam eas amiserimus. P. 158.

— Quod si tales motus ad internorum æque ac externorum. P. 125.

Asclepiades perinde esse dixit, his sanguinem mitti ac si trucidentur. CELS. lib. iii. c. 18.

It is unnecessary to multiply examples; they will be frequently met with in the text, and a reference to the interlineary part will show how they are to be associated.

RULE XIX. "Generally construe every word in any clause entered upon after the nominative case, before proceeding to another clause; beginning each clause, as you pass from one to another, with the nominative case; then the verb and words governed by it, if such there be; and finish agreeably to the instructions in Rule I."

By clause is to be understood the several portions of a sentence contained between stops. The termination of a sentence is marked by the full stop, or period (.); or, in other words, sentences are always included between periods, and the clauses are the intermediate portions. When, therefore, you commence a clause, always finish it before you proceed to another. Examples are unnecessary; the reader is referred to the translation.

RULE XX. "An oblique case, unless it be an adjunct to the nominative, should be construed after the verb; and when more obliques* than one depend on the same word, construe accusatives before datives, datives before ablatives, and genitives immediately after the words which govern them."

Corpus humanum, arte prorsus divina fabricatum multis et miris fungitur muneribus. GREG. p. 1.

— quibus quantumvis simplicibus viribus mundum cognoscimus, terrarum potimur. P. 2.

Sed nusquam alma rerum parens prolem deserit.† P. 7.

— nutrimento et potu egemus; cibum itaque potumque appetimus sumimus concouimus. P. 10.

Accusatives before Datives and Ablatives.

— nimirum quæ suam vitam aliorum malo tolerant. P. 64.

* All cases are called oblique, except the nominative, which is named by Grammarians the right case.

† In this example we have an instance of an oblique case, "*rerum*," because it is an adjunct to the nominative construed before the verb, while "*prolem*" is to be construed after.

— non mediocrem opem commilitonibus suis attulerunt. CELS.
 — qui corporum suorum robora inquietâ cogitatione, nocturnâque vigiliâ minuerant.* IB.

Sometimes, however, we must begin even a sentence by an ablative: as— longa enim aut valida sive animi sive corporis exercitatione utriusque vires insitæ exhauriuntur, (p. 3.) It would not be possible otherwise to preserve the true relation of “*exercitatione*” to “*animi*” and “*corporis*,” nor of utriusque to the two last words. See par. 60, *Desidiâ*, &c.

RULE XXI. “When *sum* is used for *habeo* the English nominative is expressed by the Latin dative, and the accusative by the Latin nominative: in such a construction, construe the Latin dative as a nominative, and the inflection of the verb *sum* by the parallel mood and tense of *habeo*, and the Latin nominative is to be rendered as an accusative.”

— cui ossa grandiora sunt. GREG. p. 19.—as if (qui ossa grandiora habet.)
Inest enim corpori vivo principium aliquod mutationis, P. 47,
 is a construction of the kind comprehended in the Rule.

Ergo si nimium alicui fatigato pene febris est. CELS. lib. i. c. 3.

Cui caput infirmum est. IB. lib. i. cap. 4.

Ratione vero opus est ipsi medicinæ. CELS. Præfat.

— itaque is, cui hoc infirmum est. IB.

Si vero continens ei somnus est, utique excitandus est. Lib. iii. c. 20.

— promptius his succurritur quam quibus inutilis libertas est. Ib. 21. [Those who have a liberty injurious to them.]

At si id vitium est, cui λευχοφλεγματια nomen est. Ib. 21.

When the Latin *nominative* is put into the *accusative*, and the verb *sum* into the *infinitive*, *quod* or *ut* being suppressed, we must supply the English for *ut*, and prefix it to the Latin dative; as—

— ita a vino ad aquam, ab hac ad vinum eo, qui supra positus est modo *transitus* ei esse. CEL. lib. i. c. 10. [That he have changes, &c.]

The construction depends upon a preceding verb, and may be resolved by *ut* and the subjunctive: *ut* transitus is *habeat*.

The verb *sum* has some other constructions, which it may not be amiss to notice: thus when it signifies possession, property, part, or duty, it governs a genitive; as—

Sani denique hominis est. GREG.

Medici vero est. Ib. P. 72.

— Ob quam causam periti medici est. CEL.

The construction, however, is elliptical; for *Proprium*, *officium*, *munus*, or some such word, is understood, upon which this genitive depends. *Sum* is also frequently and elegantly used for *affero*, to bring, and it then requires a double dative; *one* of the person, the *other* of the thing.

Ipsæ animalium dominus hujusmodi *animantibus prædæ* est et *domicilio*. GREG. p. 64.

— ita ut quod aliis maximæ voluptati est. P. 104.

— incipit jam tempus ipsum *esse præsidio* (sc. *ægro*). [Lib. iii. c. 19, is also an instance of the same construction.]

RULE XXII. “By a very common ellipsis the verb *sum*, in any of its moods or tenses, may be understood, and in construing, the English equivalent must be supplied, as the sense requires.

Unde vero (*sunt*) morbi, &c. GREG. p. 48:

Ubique igitur sensus est ibi *nervi* (*sunt*). P. 111.†

* The ablatives in this example may be known by the marks upon the *d*.

† For examples the reader is referred to the translation, in which they will be found in brackets.

RULE XXIII. "By a very elegant ellipsis any finite verb may be understood and inferred, by reflection from another verb of similar import, expressed within the period."

— qui tamen ægri conditionem, quod (*pertinet,*) ad vires vitæ. P. 35.

Ut sanus (*gignit*) sanam prolem. P. 49.

Hæc omnia (*imminent*) extrinsecus. P. 58.

— et varii et graves morbi (*nascantur*). P. 64.

— ut una esset quæ victu (*mederetur*) altera quæ medicamentis (*mederetur*;) tertia quæ manu *mederetur*. CELS. Præf.

In this example it is absolutely impossible to render the two first clauses without the verb *mederetur*, and therefore the English equivalent must be supplied in each clause.

Et interdum non febris (*subsequitur*) non cibus (*subsequitur*) non somnus *subsequitur* sicut assuevit. IB.

Not only *subsequitur*, but the verb *assuevit* also, may be considered as inferred by reflection in the different clauses.

Ubi expectatus est aliquis paulum intermittere, (*debet.*) IB.

Longis diebus meridiari potius ante cibum (*debet*); sin minus post eum (*meridiari debet*): per hiemem potissimum totis noctibus conquiescere (*debet*).

In this sentence, not only is *meridiari* inferred by reflection in the second clause, but the *debet* in all the clauses by reflection from the preceding sentence.

Ut concoctio autem omnibus vitis *occurrit* sic rursus aliis frigus (*occurrit*) aliis calor (*occurrit*). IB.

RULE XXIV. "Adjectives are often elegantly used as *adverbs*; and are then joined with verbs in the construction, and rendered adverbially."

— *frequentissimi* morborum comites et signa *observantur*. GREG. P. 34.

In this instance *frequentissimi* may be joined with *observantur*, and may be rendered as if *frequentissime*,—they are very *frequently* observed, &c.

— et a sanguine quem *multum continent*: quæ bene *multa* musculos *subeunt*. P. 113. [which they *abundantly* contain: which very *numerously* supply.*]

— qui *toti* mollissimi *existant*. P. 120.

In his nimirum exemplis ad sensum *solum attendimus*.

Porro inter mandendum saliva *copiosior affluit*. P. 208.

— quod qui *diversa* de his *senserint*. CELS. Præfat.

Ut sæpius autem cibo *utendum* sic *exiguo est*. IB. lib. i. cap. 3.

Neque vero his *solis*, quos capitis imbecillitas torquet, usus aquæ frigidæ *prodest*. IB. cap. 5.

— qui tamen semel die tum *commodius assumitur*: insuper etiam *modicus*. IB. c. 10.

Nam ubi sine intermissionibus accessiones et dolores *graves urgent*; [*oppress severely.*] Lib. iii. cap. 2.

— dum *graviore* dolores accessionesque *veniunt*: [*come on more severely.*] IB.

— sed his non *omnia credere*: [*trust entirely.*] IB. c. 6.

— hic *solus* idoneus cibus *est*: quod quidam *solum præcipiunt*. IB.

— per alvum *infundere copiosam* aquam calidam; [*to inject plentifully:*] — qua per aliquot dies *frequens* humor *feratur*. IB. c. 21.

Of rendering Gerunds. The gerunds are those in *dum* of the nominative, in *di* of the genitive, *do* of the dative, *dum* accusative, and *do* of the ablative.

The gerund in *dum* of the nominative, with *est* set impersonally, denotes

* The adjectives have not been rendered adverbially in the translation, lest it might mislead the student as to the true construction.

a necessity, moral or imperative, and governs a dative of the person, &c. upon whom the necessity lies. As—

Qui cum disputant quemadmodum sanis hominibus agendum sit. CEL.

The dative is often suppressed; as—

Videndum etiam (est), morbus an increseat. Lib. iii. cap. 2,

in which (*nobis*) is understood. The word to be supplied is to be inferred from the sense; as

— indicandum est (sup. mihi) quæ maxime ex utraque parte dicantur. IB. Præf.

[I must show what, &c.]

When this gerund follows a *verb* in the same clause, it is put into the *accusative* with *esse*, the infinitive of *sum*, as—

Nisi persuadere nobis volunt, sanis quidem considerandum esse. IB. Præf.

Quod ita præcipio, ut tamen fatear, ne ex hac quidem causa sudanti adhuc frigidum bibendum esse. Lib. i. c. 3.

— et ideo monent probe *esse distinguendum*, inter duas res ad sensum pertinentes. GREG. p. 129.

It may be resolved by *quod* or *ut* and the subjunctive of *sum*, as, *quod* probe distinguendum sit.

The student must be careful to distinguish the gerund from the participle in *dus*, for the former is active in its signification, and governs the same case as the verb from which it comes, whereas the latter is passive, and requires an ablative of the agent or doer. For instance, *Huic* tempus aliquod *servandum* curationi corporis sui est, *he* must allot some time; for *tempus* is the accusative, governed by *servandum*, and therefore cannot be rendered passively,—some time *is to be allotted*, an error into which students are apt to betray themselves.

On the other hand we must be equally careful not to make a gerund of the *neuter* participle in *dus*, as—*Alternis diebus modo aqua modo vinum bibendum est*, (CEL. lib. i. c. 10.); in which *bibendum* is evidently passive, although *vinum* might be either the *nominative* to *bibendum* or the *accusative* governed of it. But, were the latter the true construction, we should have had it *aquam* in the *accusative*, instead of *aqua* in the *nominative*, as in the present instance. Therefore, it is evident that *bibendum* is the neuter of the participle passive *bibendus*, agreeing in gender, number, and case, with *vinum*, the *nearest* substantive.

The gerund in *di* is governed by substantives and adjectives; such are *amor*, *causa*, *ratio*, *facultas*, *locus*, &c.

Ex his enim similibusque sæpe curandi nova ratio ducenda est. CEL.

Medendi autem causa caput radendum. IB.

— cur ad conditionem et læsiones *facultatis movendi* semper sit respiciendum. GREG. P. 29.

Nondum vero *ratio* ulla proposita est rem per experimenta *explorandi*. P. 117.

Alibi *locus* erit decendi.

It should be construed after the governing substantive.

The gerund in *dum* of the *accusative* is governed by prepositions; as

Sunt qui strenue contendunt hominem *inter sentiendum* unicum tantum sensum, &c. P. 141.

The gerund in *do* of the *ablative* is governed by prepositions, expressed or understood; for examples the reader is referred to the translation. These gerunds are often elegantly converted into the *gerundives*, or participles in *dus*, agreeing with the substantive.

— et conatus demum *ad musculos vel artus movendos*. P. 126.

The gerunds, however, in some cases seem to have a passive signifi-

cation, as:—*diversa ipsorum radiorum ad refringendum facilitas compensatur, (to be refracted.)*

There are two supines, the first in *um*, active, the latter in *u*, which admits either an active or passive, but mostly a passive translation. The first follows verbs of motion, as *decubitum iturus*; the latter is put after adjectives, as *Difficilimum profecto explanatu videtur:—multo autem difficilius explanatu est.* GREG. p. 151.

When the reader meets with such expressions as—*facile incitandi; facile distinguendum; difficillimè delendi*, haud ita *facile imitanda*, &c.—he is not to suppose the rule violated; for *facile*, *difficillimè*, &c. are in these constructions adverbs, and must not be rendered as adjectives.

It often occurs that there is no nominative, or that a whole clause, sentence, or an infinitive mood, may be the nominative to a finite verb, and in such cases the adjective is in the neuter gender, and the verb in the third person:

Incidere autem vivorum corpora et crudele et supervacuum est; discentibus necessarium. CEL.

The subjunctive with *ut* may often be rendered infinitively:—*medici cura esse debet ut morbum mutet, to change.* For the use of *ne nihil nisi*, &c. the reader is referred to my Introduction to Celsus.

The participle of the future in *rus* admits of various modes of rendering; it denotes futurity, but not so much positive as contingent futurity. It is frequently best rendered infinitively, examples of which will be found in the translation.

Oportet, with the succeeding verb in the subjunctive *ut* being suppressed, may be rendered by *must*, as *oportet fiat, it must be done.*

Certain adverbs of place, of time, and of circumstance, govern a genitive, as *ibi loci*, in *that place*; *tunc temporis*, at *that time*; *quæ ut animo præcipue omnium*, especially of all things.

And now a word upon the subject of this translation.

There are many who condemn translations in toto, as mere incentives to idleness and ignorance; but I think this is arguing against the utility from the *abuse*, rather than the legitimate use of the subjects. A tutor or preceptor might as well be condemned, for the idle will never profit by their own exertions. A translation properly executed, is, in my opinion, calculated rather to assist the industrious, while it is difficult to conceive how it can make the idle what they previously were.

I have made it as literal as possible, while at the same time I have endeavoured not only to arrange the words conformably with the rules of translation, but at the same time so as to admit of purity of expression. The rules of construing may not be observed on every occasion, but the cause of deviation, where it occurs, will readily appear. Such as it is, however, I now offer it to those for whose advantage it was first undertaken, and I hope it will serve, in some degree at least, to lessen their difficulties.

ROBERT VENABLES

17, ELY PLACE; Oct. 1, 1835.

* * A Translation of Celsus de Medicina, on the same principle, will be ready in due time for those who will be affected by the REGULATIONS that will come into operation on the 1st of October, 1836.

CONSPECTUS
A VIEW
THEORETICÆ MEDICINÆ.
OF THEORETICAL MEDICINE.

CAP. I.
CHAP. I.

Quædam generalia præfanda de functionibus vivi
 Certain general things to be prefaced concerning the functions of the living
corporis; de naturâ que causis morborum, de viribus insitis
 body; of the nature and causes of diseases, of the powers placed in (inherent)
corpori quæ tuentur sanitatem que depellunt morbos; nec non de
 in the body which preserve the health and repel diseases; also of
naturâ, viribus, et effectibus remediorum.
 the nature, powers, and effects of remedies.

1. Humanum corpus, fabricatum arte prorsus divinâ, fungitur multis
The human body, constructed by art altogether divine, performs many
 et miris muneribus; alia (scil. munera) quorum (sc. munerum) pertinent
 and wonderful functions; some of which relate
 ad externas res, alia tantum ad seipsum (sc. corpus.)
 to external things, others only to itself.

2. Ad alterum genus omnis sensus que voluntarius motus referuntur;
To the one kind all sensation and voluntary motion are referred;
 quibus, quantumvis simplicibus, viribus, cognoscimus mundum, potimur
 by which, though simple, powers, we know the world, we enjoy
 terrarum. Hæ (scil. functiones) dicuntur animales functiones apud
 the earth. These are called the animal functions among (by)
 medicos.
 physicians.

3. Verò minimè valemus ad has functiones omni tempore: enim
But by no means are we equal to these functions at all times: for
 longâ aut validâ exercitatione sive animi sive corporis, insitæ
 by long or powerful exercise whether of mind or of body, the innate

CAP. I.—*Generalia quædam præfanda de functionibus corporis vivi; de natura causisque morborum; de viribus corpori insitis, quæ sanitatem tuentur morbosque depellunt; nec non de remediorum natura, viribus, et effectibus.*

1. CORPUS humanum, arte prorsus divina fabricatum, multis et miris fungitur muneribus; quorum alia ad res externas, alia ad seipsum tantum, pertinent.

2. Ad alterum genus referuntur sensus omnis motusque voluntarius; quibus, quantumvis simplicibus, viribus, mundum cognoscimus, terrarum potimur. Hæ functiones animales apud medicos dicuntur.

3. Minime vero omni tempore ad has functiones valemus: longa enim aut valida sive animi sive corporis exercitatione utriusque vires insitæ exhauriuntur. In hoc autem statu brevi mone-

vires utriusque exhauriuntur. Autem in hoc statu monemur
powers of both are exhausted. But in this condition we are reminded
 brevi (sc. tempore), et cogimur tandem dulci necessitate
in a short time, and we are compelled at length by a sweet necessity
 intermittere pariter omnes labores et voluptates, que deponere curas,
to discontinue alike all labours and pleasures, and to lay aside cares,
 et committere nosmetipsos defessos et hebescentes amplexibus somni,
and to commit ourselves wearied and growing dull to the embraces of sleep,
 gremio cuius, foti et relecti, resurgamus denudò vegeti et
in the bosom of which, cherished and refreshed, we rise again lively and
 alacres et aptissimi ad omnia munera vitæ.
brisk and very fitted for all the duties of life.

4. Ad alterum genus solent referri cunctæ actiones ope
To the other kind are accustomed to be referred all actions by means
 quarum corpus vivit, que exhaustum reficitur, que corruptum purgatur.
of which the body lives, and exhausted is refreshed, and corrupted is cleansed.
 Vero hæ sunt vel vitales vel naturales (sc. functiones.)
But these are either vital or natural.

5. Illæ functiones dicuntur vitales, quæ sunt adeo necessariæ ad
Those functions are called vital, which are so necessary to
 vitam, ut sine discrimine vitæ, ne queant suspendi aut interrumpi
life, that without the hazard of life, they cannot be suspended or interrupted
 quidem per exiguum tempus; nimirum, actio cerebri que
even for a short time; that is to say, the action of the brain and
 nervorum, circuitus, sanguinis, et respiratio,
of the nerves, the circulation of the blood, and respiration.

6. Verò animalis machina sic constituta statim defuit, etiam
But the animal machine so constructed presently decays, even
 cito periret: nam omni motu solidæ partes teruntur, fluidæ
quickly would perish: for by every motion the solid parts are worn, the fluid
 (sc. partes) dissipantur, relicturæ corpus debile, macrum, que exhaustum;
are dissipated, (about) to leave the body weak, lean, and exhausted;
 quineatiam utræquæ putrescunt sponte et corrumpuntur; sic etiam
moreover both putrefy spontaneously and are corrupted; thus even
 brevi homo ipse compararet sibi acerrimum venenum.
in a short time man himself would prepare for himself a very acrid poison.

7. Sed alma parens rerum nusquam deserit prolem. Contrà
But the kind parent of Nature nowhere deserts her offspring. On the contrary
 suggerit remedium, non modò his malis, quæ semper et ubique
she supplies the remedy, not only for those evils, which always and everywhere
 minitantur necem, et sine dubio inferrent inopi (sc. homini)
threaten death, and without doubt would bring it on the helpless (i. e. man)

mur, et tandem dulci necessitate cogimur, labores omnes et voluptates pariter intermittere curasque deponere, et nosmetipsos defessos et hebescentes somni amplexibus committere; cuius gremio foti et relecti, resurgamus denno vegeti et alacres, et ad omnia vitæ munera aptissimi.

4. Ad alterum genus referri solent actiones cunctæ, quarum ope corpus vivit, exhaustumque reficitur, corruptumque purgatur. Hæ vero sunt vel vitales vel naturales.

5. Vitales dicuntur functiones illæ quæ ad vitam adeo necessariæ sunt, ut sine vitæ discrimine, ne quidem per exiguum tempus, sus-

pendi aut interrumpi queant; cerebri, nimirum, nervorumque actio, sanguinis circuitus, et respiratio.

6. Machina vero animalis sic constituta statim defuit, cito etiam periret: nam omni motu partes solidæ teruntur, fluidæ dissipantur, corpus, debile, macrum exhaustumque relicturæ; quinetiam utræque sponte putrescunt et corrumpuntur; sic etiam brevi ipse sibi homo acerrimum venenum compararet.

7. Sed nusquam alma rerum parens prolem deserit. Contra, non modo his malis, quæ semper et ubique necem minitantur et inopi sine dubio inferrent, remedium suggerit, verum in-

verum insuper mirabili artificio efficit, ut homo ferat
but moreover by a wonderful contrivance effects, that man should acquire
 novum et perennem vigorem ex hâc ipsâ necessitudine.
a new and perennial vigour from this very necessity.

8. Enim corpore attrito, que parte humorum absumptâ,
For the body being worn away, and part of the humours being wasted,
 egemus nutrimento et potu; itaque appetimus, sumimus, concoquimus
we need food and drink; therefore we desire, we take, we digest
 cibum que potum; uterque concoctus diffunditur per totum
food and drink; both (being) digested is diffused throughout the whole
 corpus, apponitur quâ est opus; quod superest utriusque
body, is placed where there is need; what is superfluous of both
 ejicitur. Quoque putrescentes vel aliter corrupti humores, secreti
is thrown out. Also the putrescent or otherwise corrupted humours, separated
 à reliquis, excernuntur e corpore idoneâ viâ. Denique
from the rest, are purged off from the body by a proper channel. Lastly
 plurimi succi assidue secernuntur a generali massâ, diversi
many juices (are) continually secreted from the general mass, differing
 ab illâ, et diversi inter se, que accommodati variis usibus
from it, and differing from each other, and fitted to various uses
 intra corpus.
within the body.

9. Hæ functiones vocantur naturales, necessariae quidem ad vitam, sed quæ
Those functions are called natural, necessary indeed to life, but which
 possunt facile et sine periculo suspendi paulisper: scilicet
can easily and without danger be suspended for a little: that is to say
 concoctio, secretio, et excretio.
concoction, secretion, and excretion.

10. Igitur vitalibus et naturalibus functionibus, homo vivit, viget,
Therefore by the vital and natural functions, man lives, thrives,
 reficitur, purgatur; evadit idoneus ad exercendas animales (functiones):
is refreshed, is cleansed; becomes fitted to exercise the animal ones:
 nobile opus, excogitandum nec nisi Uni; certe excedens omne humanum
a noble work, to be thought of only by One; truly exceeding all human
 ingenium tantum ut toties exploratum, non capiatur
understanding so much that (though) so often explored, it cannot be comprehended
 mente quamvis sagace; neque functiones singularum
by the mind however sagacious; nor (can) the functions of the individual
 partium, neque nexus universarum (sc. partium) neque fons et
parts, nor the connexion of the whole; nor the fountain and
 origo virium quibus machina movetur, hactenus detegantur.
origin of the powers by which the machine is moved, hitherto be detected.

super mirabili artificio efficit, ut ex hac ipsa
 homo necessitudine novum ferat et perennem
 vigorem.

8. Attrito enim corpore parteque humorum
 absumpta, nutrimento et potu egemus; cibum
 itaque potumque appetimus, sumimus, conco-
 quimus: concoctus uterque per totum corpus
 diffunditur, qua opus est apponitur; quod su-
 perest utriusque ejicitur. Putrescentes quoque
 vel aliter corrupti humores, a reliquis secreti,
 idonea via e corpore excernuntur. Plurimi de-
 nique a massa generali succi, diversi ab illa et
 diversi inter se, variisque intra corpus usibus
 accommodati, assidue secernuntur.

9. Hæ vocantur functiones naturales, ad vitam
 quidem necessariae, sed quæ paulisper facile, et
 sine periculo, suspendi possunt: concoctio, sci-
 licet, secretio et excretio.

10. Vitalibus, igitur, et naturalibus functio-
 nibus homo vivit, viget, reficitur, purgatur, ad
 animales exercendas idoneus evadit: nobile o-
 pus, nec nisi Uni excogitandum; certe omne
 humanum ingenium tantum excedens, ut mente
 quamvis sagace, toties exploratum, non capia-
 tur; neque singularum partium functiones, ne-
 que universarum nexus, neque fons et origo
 virium quibus machina movetur, hactenus dete-
 gantur.

11. Enim nulla machina præter animalem cietur proprio motu ;
For no machine besides the animal one is moved by its own motion ;
 nulla alia summovet suâ sponte pericula imminencia sibi, nec
no other removes of its own accord the dangers hanging over itself, nor
 ministrat sibi res quibus eget.
supplies to itself the things which it wants.

12. Statim primo aspectû, talis machina, nisi forte corrupta
Immediately at first sight, such a machine, unless by chance corrupted
 vel læsa aliquâ externâ causâ, videtur durabilis in omne ævum ;
or injured by some external cause, seems durable through every age ;
 et quidem docemur contrarium experienciâ solâ. Enim homo,
and indeed we are taught the contrary by experience alone. For man,
 quanvis sanus, et robustus, et vegetus, annis labentibus, ipse
however healthy, and robust, and sound, the years gliding on, he himself
 et dilabitur, senescit, moritur, solvitur in pristina elementa, futurus
also decays, grows old, dies, is resolved into his original elements, to become
 pabulum aliis animantibus.
food for other animated beings.

13. Autem hæc lex Naturæ, hoc consilium ; ut singuli homines
But this the law of Nature, this the design ; that individual men
 pereant, humana gens floreat. Hinc sexus, hinc generatio
should perish, the human race should flourish. Hence sexes, hence generation
 et proles, et quicquid suavis, quicquid amari alma Venus habet.
and offspring, and whatever of sweet, whatever of bitter beautiful Venus has.

14. Sed dominus ipse terrarum, et animalium quæ incolunt eas,
But the lord himself of the earth, and of the animals which inhabit it,
 nascitur parvus, debilis, fatuus, inops omnium rerum ; conservatur, fovetur,
is born small, weak, fatuous, needy of all things : is preserved, is cherished,
 alitur diu solâ curâ parentum : crescit paulatim,
is nourished for a long time by the sole care of his parents : grows gradually,
 pubescit, adolescit, sapit ; æquat parentes
arrives at puberty, becomes a young man, grows wise ; equals his parents
 forma, viribus, et animi et corporis ; gaudet exercere
in the form, in the powers, both of mind and of body ; rejoices to exercise
 eadem munera ; tandem, annis ingravescentibus, subiturus
the same functions ; at length, the years weighing on, (about) to undergo
 communia sortem.
the common lot.

15. Omnia hæc communia universo generi ; nec desunt
All these things (are) common to the whole race ; nor are there wanting
 multa propria singulis hominibus. Enim non secus ac
many things peculiar to individual men. For no otherwise than as

11. Nulla enim præter animalem machinam proprio motu cietur ; nulla alia, pericula sibi imminencia sua sponte summovet, nec res quibus eget sibi ministrat.

12. Primo statim aspectu, talis machina, nisi forte causa aliqua externa corrupta vel læsa, in omni ævo durabilis videtur : et quidem sola experientia contrarium docemur. Homo enim, quamvis sanus et robustus et vegetus, labentibus annis, et ipse dilabitur, senescit, moritur, in pristina elementa solvitur, aliis animantibus pabulum futurus.

13. Hæc autem Naturæ lex, hoc consilium ; ut singuli pereant homines, gens humana floreat. Hinc sexus, hinc generatio et proles, et

quicquid suavis, quicquid amari, alma Venus habet.

14. Sed ipse terrarum et quæ eas incolunt animalium dominus, parvus, debilis, fatuus, omnium rerum inops, nascitur : sola parentum cura diu conservatur, fovetur, alitur : paulatim crescit, pubescit, adolescit, sapit : forma et animi et corporis viribus parentes æquat ; eadem gaudet exercere munera ; tandem, ingravescentibus annis, communem sortem subiturus.

15. Hæc omnia universo generi communia ; nec desunt multa singulis hominibus propria. Non secus enim ac vultus, corporis constitutiones variant. Hæc quidem varietates nullo modo exequendæ sunt, tamen ad certa capita non in-

vultus constitutiones corporis variant; quidem hæ
(just as) the countenance do the constitutions of the body vary; indeed these
 varietates sunt exequendæ nullo modo, tamen solent
varieties are to be traced in no manner, nevertheless they are accustomed
 referri non inepte ad certa capita, quæ dicuntur κατ' ἐξοχήν
to be referred not improperly to certain heads, which are called par excellence
 (kat exochen) temperamenta, scientia quorum proderit haud
(by way of excellence) temperaments, the knowledge of which will benefit not
 parvum medico.
a little the physician.

16. Varietates hujusmodi, non modo corporis, verum et animi quoque,
Varieties of this kind, not only of the body, but even of the mind also,
 observantur, plerumque congenitæ, nonnunquam hereditariæ. Hoc
are observed, for the most part congenital, sometimes hereditary. In this
 modo parentes sæpe reviviscunt in prole; certe liberi sunt
manner parents often revive in their offspring; at least children are
 similes parentibus, non modo (secundum) vultum et formam
like to their parents, not only (as to) the countenance and form
 corporis sed indolem animi, et virtutes et vitia.
of the body but the disposition of the mind, and the virtues and vices.

Imperiosa Claudia gens floruit diu Romæ, impigra] (scil.
The imperious Claudian race flourished for a long time at Rome, active,
 Claud. gens), ferox, superba; eadem (gens Claud.) produxit illachrymabilem
fierce, proud: the same produced the tearless

Tiberium, tristissimum tyrannum: desitura tandem in immanem Caligulam, et
Tiberius, a most cruel tyrant; to cease at length in the cruel Caligula, and
 Claudium, et Agrippinam, que demum, post sexcentos annos, Neronem ipsum.
Claudius, and Agrippina, and finally, after six hundred years, Nero himself.

17. Quin humanum corpus subit multas et graves mutationes ab
But the human body undergoes many and severe changes from
 aliis causis, et, valetudine adhuc firmâ; et imprimis
other causes, also, the health being still firm; and in the first place
 a genere vitæ, et victû quo utimur, ab ipso cælo
from the kind of life, and the food which we use, from the very climate
 quo degimus, et ab immensâ vi consuetudinis. Oportet
in which we live, and from the immense force of custom. It behoves
 medicum novisse hæc quoque.
the physician to know these things also.

18. Igitur secunda valetudo est definienda nullis verbis, neque
Therefore good health is to be defined by no words, nor
 profecto facile describenda; quippe quam Natura ipsa, non
truly easily to be described; as being that which Nature herself, not

epte referri solent, quæ temperamenta κατ' ἐξοχήν
 dicuntur; quorum scientia medico haud par-
 vum proderit.

16. Hujusmodi varietates non corporis modo,
 verum et animi quoque, plerumque congenitæ,
 nonnunquam hereditariæ, observantur. Hoc
 modo parentes sæpe in prole reviviscunt; certe
 parentibus liberi similes sunt, non vultum modo
 et corporis formam, sed animi indolem, et vir-
 tutes, et vitia.—Imperiosa gens Claudia diu
 Romæ floruit, impigra, ferox, superba; eadem
 illachrymabilem Tiberium, tristissimum tyran-
 num, produxit; tandem in immanem Caligulam,

et Clandium, et Agrippinam, ipsamque demum
 Neronem, post sexcentos annos, desitura.

17. Quin et ab aliis causis, firma adhuc valetu-
 dine, corpus humanum multas et graves subit
 mutationes; et imprimis a vitæ genere et victu
 quo utimur, ab ipso sub quo degimus cælo, et ab
 immensa vi consuetudinis. Hæc quoque medi-
 cum oportet novisse.

18. Secunda, igitur, valetudo nullis est defini-
 enda verbis, neque profecto facile describenda;
 quippe quam Natura ipsa, non sine sapiente con-
 silio, variam fecerit. Scire tamen juvabit, per-

sine sapiente consilio, fecerit variam. Tamen juvabit
without a wise design, has rendered variable. Nevertheless it will benefit
 scire, perfectissimam sanitatem, contingere homini florentis,
to know, that the most perfect health, befalls man of flourishing (in the
 ætatis, cui sana mens, optimum donum Dei, est
prime of) age, to whom a sound mind, the best gift of God, has been
 data, qualis sufficiat, non modo ad solita munera vitæ, vero
given, such as may suffice, not only for the usual duties of life, but
 quoque accommodet se facile variis casibus, et studiis, et
also can accommodate itself easily to the various accidents, and desires, and
 negotiis; quæ sentiens probe et perspicax et tenax, et percipit,
pursuits; which feeling well and perceptive and tenacious, both perceives,
 et intelligit et retinet, ut decet (eam;) quæ, firma et
and understands and retains, as becomes it (as it ought:) which, firm and
 serena, sive fuerit gravior sive hilarior, semper compos
serene, whether it (shall) be more grave or more cheerful, always possessed
 sui, est ludibrio neque suis inordinatis motibus,
of itself (in self-possession), is the sport neither to its own inordinate passions,
 neque externis casibus; sed imperat, non paret, propriis affectibus,
nor to external chances; but governs, does not obey, its own affections,
 que fruitur modeste rebus-secundis, tolerat fortiter adversas (sc. res),
and enjoys moderately prosperity, bears with fortitude adversity,
 et excitatur, non convellitur, gravioribus casibus, siqui (casus)
and is excited, not borne down, by more severe misfortunes, if any
 acciderint. Hæc quidem sunt signa et indicia non modo
should happen. These, indeed, are the signs and indications not only
 sanæ mentis, sed quoque sani corporis; et profecto conferunt
of a sound mind, but also of a healthy body; and truly conduce
 haud parum ad sanitatem hujus (corporis): scilicet, donec inclusa est
not a little to the health of the latter: that is to say, whilst it is shut up
 in suâ corporeâ compage, mens et afficit corpus multum, et
in its corporeal frame, the mind both affects the body much, and
 vicissim afficitur ab eo (sc. corpore).
in turn is affected by it.

19. Vero quod attinet ad hoc (scil. corpus) validissimum et ferè
But as relates to the latter, the strongest, and commonly
 sanissimum corpus est justæ magnitudinis, et benè formatum, neque
the most healthy, body is of a due size, and well formed, neither
 nimis procerum, neque breve, neque macrum, neque grave multâ
too tall, nor short, nor lean, nor heavy with much
 pinguedine, sed quadratum potius quam gracile, et imprimis instructum
fat, but square rather than slender, and in the first place furnished

fectissimam florentis ætatis homini contingere
 sanitatem, cui mens sana, optimum Dei donum,
 data est; qualis non modo ad solita vitæ munera
 sufficiat, sed variis quoque casibus et studiis et
 negotiis facile se accommodet; quæ probe sen-
 tiens, et perspicax, et tenax, et percipit, et int-
 telligit, et retinet, ut decet; quæ firma et serena,
 sive gravior fuerit sive hilarior, sive semper
 compos, neque suis inordinatis motibus neque
 externis casibus ludibrio est; sed propriis affect-
 ibus imperat, non paret, rebusque secundis
 modeste fruitur, adversas fortiter tolerat, et gra-
 vioribus, siqui acciderint, casibus, excitatur, non

convellitur. Hæc, quidem, non modo sunt signa
 et indicia sanæ mentis, sed sani corporis quo-
 que; et profecto ad hujus sanitatem haud parum
 conferunt: scilicet donec in compage sua cor-
 porca inclusa est, mens et corpus multum afficit
 et ab eo afficitur vicissim.

19. Quod ad hoc vero attinet, validissimum
 et ferè sanissimum est corpus justæ magni-
 tudinis et bene formatum, neque procerum
 nimis, neque breve, neque macrum, neque
 multa pinguedine grave; sed quadratum potius
 quam gracile, et amplo imprimis thorace
 latisque humeris instructum; cui ossa gran-

amplo thorace, que latis humeris; cui sunt ossa grandiora, *with a large chest, and broad shoulders; which has the bones larger,* et musculi torosi, bene expressi, et firmi, et fortes, nunquam *and the muscles brawny, well developed, and firm, and strong, never* tremuli; et cutis mollis quasi humida, nunquam arida; et color, *tremulous; and the skin soft as it were moist, never dry; and the colour,* præsertim vultus, bonus et constans, sive is (color) fuerit *especially of the countenance, good and constant, whether it shall be* pulchrior sive fuscior, dummodo vergat neque ad flavum neque *more fair or more brown, provided it verges neither to yellow nor* pallidum (sc. colorem); et vultus vegetus et hilaris, et oculi *pale; and the countenance fresh and cheerful, and the eyes* nitentes et vividi; et dentes integri et fortes; et gressus firmus, *shining and vivid; and the teeth sound and strong; and the walk firm,* artubus bene sustentibus corpus; et incessus erectus, et omnis *the limbs well supporting the body; and the gait erect, and all* exercitatio facilis et labor tolerabilis, quamvis diuturnus et gravis; *exercise easy and labour tolerable, although long-continued and sincere;* et omnia organa externorum sensuum probe valentia ad sua munera, *and all the organs of the external senses well availing to their functions,* neque torpida, neque sententia nimis acriter, et somni leves et *neither torpid, nor feeling too acutely, and sleep light and* diuturni, haud faciles ruptu, qui (sc. somni) reficiunt corpus *long continued, not easy to be broken, which refresh the body* multum, et vel prorsus carent somniis, vel saltem horrificis; et *much, and either altogether want dreams, or at least horrible ones; and* vel penitus sopiunt placidâ quiete, et jucundis obliviiis vitæ, *either entirely lull in placid rest, and the pleasant oblivions of life,* vel suaviter recreant animum gratis imaginibus.— Porro temperatus *or sweetly refresh the mind with pleasing notions.— Moreover a temperate* motus sanguinis, et pulsus arteriarum validi, pleni, molles, *motion of the blood, and the pulsations of the arteries strong, full, soft,* æquales, neque nimis frequentes, neque tardi, neque facile incitandi *equal, neither too frequent, nor slow, nor easily to be excited* præter, solitum, sunt indicia sani corporis; et respiratio *beyond, the usual bounds, are signs of a healthy body; also the respiration* plena, facilis, lenta, parum perspecta, neque multum accelerata ab quivis *full, easy, slow, little observed, nor much accelerated by any* exercitatione, et vox fortis et sonora, et in viris gravis, haud *exertion, and the voice strong and sonorous, and in men grave, not* facile facta rauca; et halitus oris gratus saltem carens *easily rendered hoarse; and the vapour of the mouth pleasant at least wanting*

diora sunt, et musculi torosi, bene expressi, et firmi, et fortes, nunquam tremuli; et cutis mollis quasi humida, nunquam arida; et color, præsertim vultus, bonus et constans, sive is pulchrior fuerit, sive fuscior, dummodo neque ad flavum neque pallidum vergat; et vultus vegetus et hilaris, et oculi nitentes et vividi; et dentes integri et fortes; et gressus firmus, artubus corpore bene sustentibus; et incessus erectus, et exercitatio omnis facilis, et labor tolerabilis, quamvis diuturnus et gravis; et omnia sensuum externorum organa ad sua munera probe valentia, neque torpida neque nimis acriter sententia; et somni leves et diu-

turni, haud faciles ruptu, qui corpus multum reficiunt, et somniis vel prorsus carent vel saltem horrificis; et vel placida quiete et jucundis vitæ obliviiis penitus sopiunt, vel gratis imaginibus animum suaviter recreant. Sani porro corporis indicia sunt, sanguinis motus temperatus, et pulsus arteriarum validi, pleni, molles, æquales, neque nimis frequentes, neque tardi, neque facile præter solitum incitandi; et respiratio plena, facilis, leuta, parum perspecta, neque multum ab exercitatione quivis accelerata, et vox fortis et sonora, et in viris gravis, haud facile rauca facta; et halitus oris gratus, saltem omni fœtore carens, et os hu-

omni fœtore, et so humidum et lingua nitida, vero non nimis
all fetor, and the mouth moist and the tongue clean, but not too
 rubra, et appetitus cibi magnus, egens nullâ ope condimentorum,
red, and the appetite for food good, wanting no aid of condiments,
 et sitis modica, et concoctio omnis escæ facilis et bona,
and the thirst moderate, and the digestion of every kind of food easy and good,
 sine ructu, aut ventriculo gravato ullo modo, et excretio
without belching, or the stomach being oppressed in any manner, and the excretion
 per alvum naturalis, quotidiana, et urina facile retenta justum
through the belly, natural, daily, and the urine easily retained a due
 tempus, et cum demum tempus est facile reddita; et
time, and when at length the time is (arrives) easily voided; and
 quamvis varii coloris, et crassitudinis, et copiæ (pro
although of various colour, and thickness, and quantity (according
 ratione cibi que potus) deponens idoneum sedimentum suo
to the nature of food and drink) depositing the proper sediment in its own
 tempore; quo tardius, fere eo melius; et exhalatio per
time; the slower, commonly the better; and the exhalation by
 cutem libera et constans, vero citra sudorem nisi validæ causæ
the skin free and constant, but on this side sweat unless powerful causes
 concurrant et internæ secretiones pariter constantes et liberæ,
concur, and the internal secretions alike constant and free,
 neque nimis neque nimis parca. Denique est (subaud. proprium)
neither too much nor too scanty. Finally it is the part
 sani hominis appetere venerem, et valere ad eam, et
of a healthy man to desire venery, and to be able for it, and
 procreare sobolem, Vero quædam sanitas est singularis et propria
to procreate an offspring. But a certain health is peculiar and proper
 fœminis quippe (eæ) quæ habeant quasdam partes, que fungantur
to women as being those who have certain parts, and perform
 muneribus diversis multum a virilibus (muneribus.) Igitur oportet
functions differing very much from those of men. Therefore it behoves
 notare inter indicia sanitatis harum (fœminarum) æquabilem et
to note amongst the signs of health of these the uniform and
 liberum fluxum mensium, neque nimium neque nimis parcum; et
free flow of the menses, neither too profuse nor too scanty; and
 felicem graviditatem et facilem partum, et tempore quo
an easy pregnancy and a favorable delivery, and at the time in which
 decet, copiosam secretionem boni lactis. Præterea, est (proprium)
it becometh, a copious secretion of good milk. Moreover, it is the part
 sani et validi corporis utriusque sexûs probe functum esse, non
of a healthy and strong body of both sex properly to have discharged, not

midum, et lingua nitida, non vero nimis rubra; et cibi appetitus magnus, nulla condimentorum ope egens, et sitis modica, et concoctio omnis escæ facilis et bona, sine ructu aut ventriculo ullo modo gravato; et excretio per alvum naturalis, quotidiana, et urina justum tempus facile retenta, et cum tempus demum sit, facile reddita; et quamvis varii coloris et crassitudinis et copiæ (pro ratione cibi potusque) sedimentum idoneum suo tempore deponens; quo tardius, eo fere melius; et exhalatio per cutem libera et constans, citra vero sudorem nisi validæ causæ concurrant; et secretiones internæ pariter constantes et liberæ, neque

nimis neque nimis parca. Sani denique hominis est venerem appetere, et ad eam valere et sobolem procreare. Fœminis vero sanitas quædam singularis et propria est, quippe quæ partes quasdam habeant, muneribusque fungantur a virilibus multum diversis. Harum, igitur, inter sanitatis signa notare oportet æquabilem et liberum mensium fluxum, neque nimium neque nimis parcum; et graviditatem felicem, et partum facilem, et quo decet tempore, copiosam boni lactis secretionem. Præterea, sani et validi corporis utriusque sexûs est, non modo suis, nihil impediens, probefunctum esse muneribus, sed, tenacis prosperæ

modo suis muneribus, nihil impediēte, sed tenacis (corporis)
only their own duties, nothing hindering, but tenacious
 suæ prosperæ valetudinis, accommodasse esse multis varietatibus
of its own good health, to have accommodated itself to the many varieties
 cœli, victus, generis vitæ, et sic tolerasse impunè plurimas
of climate, of diet, of kind of life, and thus to have borne with impunity the many
 causas morborum, quales vel prorsus fregissent minus
causes of diseases, such as either (would have) entirely broken down a less
 firmum aut sanum corpus, vel saltem perduxissent in grave
strong or healthy body, or at least would have brought it into great
 discrimen valetudinis. Postremo, sanitas est non prorsus eadem
danger of disease. Finally, health is not altogether (precisely) the same
 eidem homini quamvis semper sanissimo. Enim plurimæ et
to the same man although always very healthy. For very many and
 gravissimæ varietates corporis pendent omnino ab ætate: nec
very weighty changes of body depend altogether upon the age: nor
 quisquam hominum differt tantum ab aliis (hominibus) ejusdem
does any one of men differ so much from others of the same
 ætatis, quantum discrepat a seipso variis temporibus vitæ;
age, as he differs from himself at the various periods of life;
 sive spectemus formam, sive vires corporis, sive dotes
whether we look to the figure, or the strength of the body, or the endowments
 animi, sive demum perscrutemur intima penetralia corporis que
of the mind, or lastly we search into the inmost recesses of the body and
 munera pendentia ab iis; quo fit ut valetudo perfectissima
the functions depending upon them; whence it happens that health the most perfect
 quam, quæ perduxit corpus primo parvum et tenerum ad suum
possible, which brought the body at first small and tender to its own
 vigorem et perfectionem, et sustinuit diu in hoc statu,
vigour and perfection, and supported it a long time in this state,
 paulatim minuat idem (corpus,) et tandem perducit ad finem;
by degrees reduces the same and at length brings it to an end;
 nam "Nascentes morimur, quæ finis pendet ab origine."
for Born we die, and the end depends upon the beginning.

20. Cognitio, harum rerum, quæ omnes pertinent ad sanum
The knowledge of these things, which all belong to the healthy
 corpus, vocatur Physiologia humani corporis.
body, is called the Physiology of the human body.

21. Verum enimvero homo nascitur, crescit, viget, senescit, moritur, non
But truly man is born, grows, flourishes, grows old, dies, not
 modo certo tempore, secundum leges Naturæ, sed quoque
only at a certain time, according to the laws of Nature, but also

quæ valetudinis, multis, cœli, victus, vitæ generis, varietatibus semet accommodasse, et sic plurimas morborum causas impunè tolerasse, quales minus firmum aut sanum corpus vel prorsus fregissent, vel saltem in grave valetudinis discrimen perduxissent. — Postremo, sanitas eidem homini quamvis semper sanissimo non prorsus eadem est. Plurimæ enim et gravissimæ varietates corporis ab ætate omnino pendent: nec quisquam hominum ab aliis ejusdem ætatis tantum differt, quantum variis vitæ temporibus a se ipso discrepat; sive formam spectemus, sive corporis vires, sive animi dotes, sive demum intima corporis penetralia

muneraque ab iis pendentia perscrutemur. Quo fit, ut valetudo quam perfectissima, quæ corpus parvum et tenerum ad suum vigorem et perfectionem primo perduxit, et diu in hoc statu sustinuit, idem paulatim minuat, et tandem ad finem perducit; nam

"Nascentes morimur, finisque ab origine pendet."

20. Harum rerum, quæ omnes ad sanum corpus pertinent, cognitio, Physiologia corporis humani vocatur.

21. Verum enimvero, homo, non modo certo, secundum Naturæ leges, tempore nascitur, crescit, viget, senescit, moritur; sed variis

fit obnoxius variis prope innumeris morbis; qui corruptant
becomes liable to various, almost innumerable diseases; which corrupt
 formam quamvis pulchram, frangant vires, impediunt singulas
the form however beautiful, break down the strength, hinder the individual
 actiones corporis, sæpe excruciant corpus gravibus doloribus; neque
actions of the body, often torture the body with severe pains; nor
 ipsi pepercerint "particulæ Divinæ auræ."
will they spare "the particle of Divine air."

22. Alii (morbi) horum (morborum) adoriuntur infantem fere nascentem,
Some of these attack the infant just born,
 nec-raro extinguunt; alii invadunt potius juvenem fidem
not unfrequently destroy it; others seize rather the youth trusting
 viribus, nunc rapiunt citâ morte, nunc consumunt
to his strength, one time hurry him off, by a quick death, at another consume him
 lentâ tabe; dum alii magis obsident semitam labentis ætatis,
by slow wasting; whilst others rather beset the path of declining age,
 quâ (ætate) facilius opprimant corpus debile, exhaustum,
in which they more easily oppress the body weak, exhausted,
 impar prælio, vel si non statim oppresserint, macerant
unequal to the combat, or if they should not immediately (have) crush it, waste it
 longâ valetudine, donec vita tandem prorsus inops et miseranda,
by long disease, until life at length altogether helpless and wretched,
 commutetur cum optandâ morte.
is exchanged with wished-for death.

23. Oportet causas tot, que tam variorum que gravius
It behoves that the causes of so many, and of such various and severe
 morborum esse multas: scientia naturæ, et sedis, et effectuum
diseases be many; the knowledge of the nature, and seat, and effects
 quarum (causarum) et modi quò afficiant humanum corpus
of which and of the manner in which they affect the human body
 vocatur Pathologia. Vero hæc est vel generalis vel specialis; principia
is called Pathology. But this is either general or special; the principle
 prioris quarum tantum traduntur hic.
of the former of which only are treated of here.

24. Morbus adest, quum corpus deflexerit tantum a sano
Disease is present, when the body has deviated so far from the health
 statu, ut solitæ actiones vel impediuntur prorsus, ut
state, that the usual actions either are impeded altogether, or
 perficiantur ægre aut cum dolore. Tunc homo dicitur ægrotare
are performed difficultly or with pain. Then a man is said to be sick
 Sua vitia possunt accidere unicuique parti corporis, tam
Their own disorders may happen to every part of the body, as we

quoque, prope innumeris, morbis obnoxius fit, qui formam quamvis pulchram corruptant, vires frangant, singulas corporis actiones impediunt, corpus sæpe gravibus doloribus excruciant, neque ipsi pepercerint "Divinæ particulæ auræ."

22. Horum alii infantem, fere nascentem, adoriuntur, nec raro extinguunt. Alii juvenem viribus fidem potius invadunt, nunc cita morte rapiunt, nunc lenta tabe consumunt; dum alii labentis ætatis semitam magis obsident, qua corpus, debile, exhaustum, prælio impar, facilius opprimant, vel, si non statim oppresserint, longa valetudine macerant, donec

tandem vita prorsus inops et miseranda cum optanda morte commutetur.

23. Tot tamque variorum graviumque morborum multas oportet esse causas; quarum nature et sedis et effectuum, et modi quo corpus humanum afficiant, scientia, Pathologia vocatur. Hæc vero est vel generalis vel specialis; quarum prioris tantum hic traduntur principia.

24. Morbus adest, quum corpus tantum a sano deflexerit, ut solitæ actiones vel prorsus impediuntur vel ægre aut cum dolore perficiantur. Tunc dicitur homo ægrotare. — Unicuique corporis parti, tam fluidæ quam solidæ, unicuique functioni, sua accidere possunt vitia.

fluida quam solidæ, unicuique functioni. Vero hæc occurrunt vel singula, fluida as solidæ, to every function. But these occur either single, sc. vitia) vel plura juncta simul. Hinc simplices vel compositi morbi. or several joined together. Hence simple or compound diseases.

25. Exemplum simplicissimi (sc. morbi) erit si quælibet partes An example of the most simple will be, if any parts

corporis, ruptæ, vel læsæ quavis alio modo factæ fuerint of the body, broken, or injured in any other manner shall have become

minus idoneæ propriis muneribus: aut si, fabricâ singularum less fitted for their proper functions: or if, the structure of the individual

partium omnino salvâ, ipsæ, (sc. partes,) sive solidæ sive parts being entirely sound, they themselves, whether solid or

fluidæ, aberraverint a sano statu: veluti si, propriis fluid, (shall) have deviated from the healthy condition: as if, their own

dotibus amissis vel corruptis, adeptæ sint sibi qualities being lost or corrupted, they (should) have acquired to themselves

alias, et fortasse noxias (sc. dotes); vel denique si moventes vires thers, and perhaps noxious ones; or lastly if the moving powers

fuerint vel nimix, vel nimis parvæ, aut directæ contra normam should be either too great, or too small, or directed against the law

Naturæ.
of Nature.

26. Vero rarissime spectamus morbos hujusmodi, fere But very seldom do we see diseases of this kind, for the most part

attingimus acie solâ mentis: quippe nimirum etiam e comprehend them by the capacity alone of the mind: for doubtless even

simplicissimi gignant alios, sive morbos, sive indicia seu symp- e most simple engender others, whether diseases, or the signs or symp-

tomata morborum, et dignoscantur his solis. Symptomata vel oms of diseases, and are distinguished by these alone. The symptoms or

indicia morbi sunt singulæ res quæ observantur præter signs of disease are the particular things which are observed beyond

naturam in ægro; vero præcipua, evidentissima, constantissima ture (unnatural) in the sick; but the chief, most evident, most constant

eorum faciunt, definiunt, morbum, alia producentia alia, prima them constitute, define, the disease, some producing others, the first

provenientia ab causâ ipsâ morbi. proceeding from the cause itself of the disease.

27. Profecto varia et prope innumera signa morborum Truly various and almost innumerable signs of diseases

observantur in ægris, notitia quorum (sc. signorum) erit e observed in the sick, the knowledge of which will be

ec vero vel singula occurrunt vel plura simul
facta. Hinc morbi simplices vel compositi.
25. Simplicissimi exemplum erit, si quælibet
partis partes ruptæ, vel quavis alio modo
factæ, propriis muneribus minus idoneæ factæ
erint: aut si, salva omnino singularum par-
tem fabrica, ipsæ, sive solidæ sive fluidæ, a
sano sano aberraverint: veluti si, propriis
dotibus amissis vel corruptis dotibus, alias et fortasse
noxias sibi adeptæ sint: vel denique si vires
moventes, aut nimix, aut nimis parvæ fuerint,
et contra Naturæ normam directæ.

26. Hujusmodi vero morbos rarissime specta-
mus, fere sola mentis acie attingimus; quippe
nimirum simplicissimi etiam, alios sive morbos,
sive morborum indicia seu symptomata gignant,
et his solis dignoscantur. Symptomata vel
morbi indicia sunt singulæ que in ægro præter
naturam observantur res; illorum vero præ-
cipua, evidentissima, constantissima, morbum
faciunt, definiunt; alia alia producentia, prima
ab ipsa morbi causa procedentia.
27. Varia profecto et prope innumera in ægris
observantur morborum signa, quorum notitia,

imprimis utilis facientibus medicinam, tum ad cognoscendos, tum
especially useful to those practising medicine, as well to know, as
 quoque ad sanandos vel levandos morbos. Vero immensa varietas
also to cure or relieve diseases. But the immense variety
 talium signorum solet referri, haud ineptè, ad tria genera
of such symptoms is accustomed to be referred, not inaptly, to three kinds
 seu capita; scilicet, (suband. ad) impeditas functiones, sensus, sive
or heads; that is to say, impeded functions, sensations, or
 molestas perceptiones, et speciem que alias manifestas qualitates
troublesome perceptions, and the appearance and other manifest qualities
 corporis, vel quæ percipiuntur sensibus, mutatas aut vitiatas.
of the body, or which are perceived by the senses, being changed or vitiated.
 Nimirum omnis morbus consistit in aliquâ læsâ functione: vero fere
Doubtless every disease consists in some injured function: but commonly
 nulla (functio) harum potest lædi vel impediri, quin brevi
no one of these can be injured or impeded, but that quickly
 facessat quandam molestiam ægro, quâ (sc. molestia) sciat
it causes some trouble to the sick, by which he may know
 se habere (se) male. Nec fere potest quisquam
that he finds himself badly, (ill.) Nor generally can any one
 ægotare diu quin species et forma corporis, et
be sick a long time but that the appearance and form of the body, and
 decens color vultûs, quæ solent contingere prosperæ
the becoming colour of the countenance, which are accustomed to belong to good
 valetudini, que depingere eandem (sc. valetudinem) tam pulchrè,
health, and to depict the same so beautifully,
 corrumpantur plus ve minus.
are corrupted more or less.

28. Igitur inter indicia adversæ valetudinis, signa
Therefore amongst the indications of bad health, the signa
 læsarum animalium functionum sunt notanda imprimis
of the injured animal functions are to be noted in the first plac
 medico; scilicet, indicia sensûs, que voluntari
by the physician; that is to say, the symptoms of sensation, and of voluntari
 motûs, habentium se malè. Enim singuli externi sensu
motion, having themselves ill. For the individual external sense
 possunt vitari variis modis, et revera sæpe vitantur;
may be vitiated in various ways, and truly often are vitiated
 nempe aut deficiunt et torpent, aut fiunt nimis acuti, ne
for example either they fail and grow torpid, or they become too acute, no
 exercendi sine molestiâ, aut fiunt abnormes et depravantur
to be exercised without trouble, or they become irregular and are deprave

tum ad cognoscendos, tum quoque ad sanandos
 vel levandos morbos, medicinam facientibus
 imprimis utilis erit. Immensa vero talium
 signorum varietas haud inepte ad tria genera
 seu capita referri solet; functiones, scilicet,
 impeditas; sensus sive perceptiones molestas;
 et speciem aliasque corporis qualitates mani-
 festas, vel quæ sensibus percipiuntur, mutatas
 aut vitiatas. Omnis nimirum morbus in læsa
 aliqua functione maxime consistit (24); harum
 vero nulla fere lædi vel impediri potest, quin
 brevi molestiam quandam ægro facessat, qua
 sciat se male habere. Nec quisquam fere diu

ægotare potest, quin species et forma corporis
 et vultus color decens, quæ prosperæ valetudini
 contingere solent, eandemque tam pulchrè
 depingere (19) plus minusve corrumpantur.

28. Medico, igitur, inter adversæ valetudin
 indicia imprimis notanda sunt læsarum fun-
 tionum animalium signa; sensus, scilicet
 motusque voluntarii male se habentium indici
 Singuli enim sensus externi variis possu-
 vitari modis, et revera sæpe vitantur; nem-
 aut deficiunt et torpent, aut nimis acuti fiunt
 nec sine molestia exercendi, aut abnormes fiunt
 et depravantur. Sensus porro interni sæpe

Porro interni sensus sæpe afficiuntur a morbis: vero affectiones
Moreover the internal senses often are affected by diseases: but affections
 omnium sensuum hujusmodi vindicant sibi optimo jure
of all of the senses of this kind claim to themselves by the best right
 attentionem medici, non modo quatenus ipsæ, (scil. affectiones,)
the attention of the physician, not only inasmuch as they themselves
 interdum fiant morbi haud levis momenti, sed quantum
sometimes become diseases of no slight moment, but so far as
 sæpe ostendant quam optime naturam et augmentum vel
they often shew in the best possible way the nature and increase or
 remissionem aliorum que graviorum morborum.
remission of other and more severe diseases.

29. Ratio est par cur semper respiciendum sit ad
The reason is equal why we always ought to look to
 conditionem, et læsiones facultatis movendi; sive illa defecerit
the condition, and lesions of the power of moving; whether it shall have failed
 ut solet in fere omnibus morbis, quod vocatur debilitas,
as is accustomed in almost all diseases, which is called debility,
 vel fuerit perdita, ut in paralyssi; vel intensa præter
or (shall) have been destroyed, as in paralysis; or stretched beyond
 naturam, quod nonnunquam accidit in quibusdam affectionibus cerebri;
nature, which sometimes happens in certain affections of the brain;
 sive demum fuerit sive abnormis, veluti in convulsionibus que aliis
or finally it shall be irregular, as in convulsions and other
 similibus morbis.
similar diseases.

30. Neque sane debet conditio ægri quod ad somnum (pertinet)
Nor truly ought the condition of the sick, as to sleep
 negligi: qui, sive ipse (somnus) sit habendus pro functione
to be neglected: which, whether itself is to be considered as a function
 corporis sive tantum pro vacatione ab aliis functionibus,
of the body or only as an intermission from the other functions,
 habet suum naturalem modum et consentaneum legibus sanitatis,
has its own natural mode and agreeable to the laws of health,
 qui modus solet turbari haud parum in plerisque
which mode is accustomed to be disturbed not a little in most
 morbis; ita ut sit vel nullus, vel nimius somnus, vel
diseases; so that there is either none, or too much sleep, or
 interruptus, vel terrificus diris somniis; neque somnus,
interrupted, or frightful with terrible dreams; nor does the sleep,
 qui fuerit, recreet ægrum ut decet.
which has been, refresh the sick as it ought.

morbis afficiuntur. Hujusmodi vero omnium sensuum affectiones medici attentionem optimo jure sibi vindicant, quatenus non modo ipsæ haud levis momenti morbi interdum fiant, sed quantum naturam et augmentum vel remissionem aliorum graviorumque morborum sæpe quam optime ostendant.

29. Par ratio est cur ad conditionem et læsiones facultatis movendi semper sit respiciendum; sive illa defecerit, ut in omnibus fere morbis solet, quod debilitas vocatur; vel perdita fuerit, ut in paralyssi; vel præter naturam intensa, quod in quibusdam cerebri

affectionibus nonnunquam accidit; sive demum abnormis fuerit, veluti in convulsionibus aliisque similibus morbis.

30. Neque sane ægri conditio quod ad somnum negligi debet: qui, sive ipse pro functione corporis, sive tantum pro vacatione ab aliis functionibus habendus sit, modum suum naturalem et sanitatis legibus consentaneum habet, qui modus in plerisque morbis haud parum turbari solet; ita ut somnus vel nullus sit, vel nimius, vel interruptus, vel diris somniis terrificus; neque somnus qui fuerit ægrum ut decet recreet.

31. Autem signa vitalium functionum læsarum vel habentium
But the signs of the vital functions being injured or having
 se male sunt adhuc majoris momenti; scilicet quæ non
themselves ill are still of greater moment; to wit which not
 modo bene ostendant naturam morbi, et statum ægri,
only clearly shew the nature of the disease, and state of the sick,
 sed non careant suo periculo quoque, saltem si fuerint
but do not want their own danger also, at least if they should be
 vehementiora. Hujusmodi sunt omnes varietates pulsuum (sc. venarum)
more violent. Of this kind are all varieties of the pulsations
 quæ nimirum ostendant aut motum sanguinis deficere, aut
which doubtless shew either that the motion of the blood is failing, or
 esse nimium, aut abnormem, veluti in febris, inflammationibus,
is too much, or irregular, as in fevers, inflammations,
 defectionibus animi.
faintings.

32. Morbidæ affectiones spiritûs tenent, non immerito, proximum
The morbid affections of the breath hold, not undeservedly, the next
 locum his, veluti omnis velocitas aut insolita tarditas
place to these, as every velocity or unaccustomed slowness
 spirandi, aut quævis difficultas, aut tussis, sternutatio, suspirium, et
of breathing, or any difficulty, or cough, sneezing, sighing, and
 similia; quibus fortasse licet (sc. nobis) adjicere varias affectiones
the like; to which perhaps we may add the various affections
 vocis, quamvis hæc profecto pertineant potius ad primum genus.
of the voice, although these truly belong rather to the first kind.

33. Porro signa læsarum naturalium actionum sunt sedulo
Moreover the signs of the injured natural actions are carefully
 observanda; scilicet, defectus, excessus, depravatio, quævis insolita
to be observed; that is to say, defect, excess, depravation, any unusual
 conditio famis aut sitis; varia vitia actionis mandendi,
condition of hunger or thirst; the various disorders of the action of chewing,
 et devorandi, et concoctionis; et status alvi, vel astrictæ
and of swallowing, and of digestion; and the state of the belly, either bound
 præter naturam, vel nimis solutæ: excessus, defectus,
beyond nature (unnaturally), or too relaxed: excess, deficiency,
 difficultas, depravatio et secretionum, et, quæ cadunt magis sub
difficulty, depravation both of the secretions, and, which fall more under
 nostris sensibus, excretionum, præsertim urinæ et sudoris. Neque
our senses, of the excretions, especially of the urine and sweat. Nor

31. Signa autem læsarum vel male se habentium functionum vitalium majoris adhuc momenti sunt; scilicet quæ non modo morbi naturam et ægri statum bene ostendant, sed suo quoque periculo, vehementiora saltem si fuerint, non careant. Hujusmodi sunt omnes pulsuum varietates, nimirum quæ ostendant aut deficere sanguinis motum, aut nimium, aut abnormem esse, veluti in febris, inflammationibus, animi defectionibus.

32. Proximum his locum tenent non immerito spiritus affectiones morbidæ, veluti omnis spirandi velocitas aut tarditas insolita, aut difficultas quævis, aut tussis, sternutatio, suspirium et similia; quibus fortasse adjicere licet

varias vocis affectiones, quamvis profecto hæc potius ad primum (29) genus pertineant.

33. Porro signa læsarum actionum naturalium (9) sedulo observanda sunt; famis, scilicet, aut sitis defectus, excessus, depravatio, conditio quævis insolita; actionis mandendi et devorandi et concoctionis varia vitia; et alvi status vel astrictæ præter naturam vel nimis solutæ; et secretionum, et quæ magis sub nostris sensibus cadunt excretionum, præsertim urinæ et sudoris excessus, defectus, difficultas, depravatio.—Neque sane negligeudæ sunt læsiones functionum utriusque sexui, muliebri imprimis, propriarum.

sane sunt læsiones functionum propriarum utrique sexui, imprimis
truly are lesions of the functions peculiar to both sex, especially
 muliebri, negligendæ.
the female, to be neglected.

34. Quod pertinet ad ingratos vel molestos sensus;
What belongs to (as regards) unpleasant or troublesome sensations;
 observantur frequentissimi comites et signa morborum; pauci
they are observed the most frequent companions and signs of diseases; few
 quorum carent saltem aliquâ molestiâ. Enim non aliter ac
of which want at least some trouble. For not otherwise than as (just as)
 sanus (scil. homo) facile fungitur suis plerisque muneribus, nec
a healthy man easily performs his several functions, nor
 sine quâdam voluptate; sic æger, his impeditis, dolet,
without some pleasure; so the sick, these being impeded, is in pain,
 angitur, que afficitur variis molestiis. Igitur ad hoc caput dolor,
is grieved, and is affected with various troubles. Therefore to this head pain,
 anxietas, pruritus, que sensus lassitudinis, torporis, stuporis, caloris,
anxiety, itching, and a sense of lassitude, of torpor, of stupor, of heat,
 frigoris, ponderis partinent, et forsitan bene multi alii ingrati
of cold, of weight belong, and perhaps very many other unpleasant
 sensus, nausea, vertigo, tinnitus, &c. quos placuit medicos
sensations, nausea, giddiness, ringing, &c. which it has pleased physicians
 relegare alio (capit? adv.?) tanta est vis et molestia omnium
to refer to another (head elsewhere): so great is the force and trouble of all
 quorum ut sæpe efficiant magnam partem morbi, et miserrime
of which that often they form a great part of the disease, and most miserably
 agitent, fatigent, torqueant, terreant ægros, tandem evasuri terribiliores
agitate, weary, torture, terrify the sick, at length to become more terrible
 morte ipsâ: neque profecto tales molesti sensus, qualescunque
than death itself: nor truly do such troublesome sensations, whatever
 fuerint causæ eorum, semper carent aliquo periculo.
have been the causes of them, always want some danger.

35. Ad tertium genus morbidorum signorum nimirum manifestas
To the third kind of morbid signs, namely the manifest
 vitiatas qualitates corporis, referuntur omnes res observandæ
vitiated qualities of the body, are referred all things to be observed,
 præter naturam in ægro, neque pertinentes ad alia genera,
beyond nature (unnatural) in the sick, and not belonging to the other kinds,
 de quibus fimus certiores nostris sensibus, non dictis
about which we become more certain by our own senses, not by the words
 aut querelis ægri. Cujusmodi sunt, color corporis,
(statements) or complaints of the sick. Of which sort are, the colour of the body,

34. Quod ad sensus ingratos vel molestos (27) pertinet; frequentissimi morborum comites et signa observantur; quorum pauci aliqua saltem molestia carent. Non aliter enim ac sanus suis facile, nec sine voluptate quadam, plerisque fungitur muneribus; sic æger, his impeditis, dolet, angitur variisque molestiis afficitur. Igitur ad hoc caput pertinent, dolor, anxietas, pruritus, sensusque lassitudinis, torporis, stuporis, caloris, frigoris, ponderis, et alii forsitan bene multi sensus ingrati, nausea, vertigo, tinnitus, &c. quos medicis alio relegare placuit; quorum omnium tanta vis et

molestia est, ut magnam sæpe morbi partem efficiant, et ægros miserrime agitent, fatigent, torqueant, terreant, tandem morte ipsa terribiliores evasuri. Neque profecto periculo aliquo semper carent tales sensus molesti, qualescunque fuerint eorum causæ.

35. Ad tertium genus signorum morbidorum (27), corporis nimirum qualitates manifestas vitiatas, referuntur res omnes in ægro præter naturam observandæ, neque ad alia genera pertinentes, de quibus nostris sensibus, non ægri dictis aut querelis, certiores fimus. Cujusmodi sunt, color corporis et præsertim vultus viti-

et præsertim vultûs, vitiatûs, et præter solitum pallidus, ruber, and especially of the countenance, vitiated, and unusually pale, red, flavus, fuscus, lividus, varians; quoque peculiaris aspectus vultûs, yellow, brown, livid, changeable; also a peculiar aspect of countenance, ab actione musculorum aut motu sanguinis et sæpe pendens from the action of the muscles or motion of the blood and often depending a stau animi, que describendus nullis verbis, qui tamen on the state of the mind, and to be described by no words, which notwithstanding depingit melius et certius omni sermone conditionem pourtrays better and more certainly than all verbal description the condition ægri, quod (sc. pertinet) ad vires vitæ, et levamen aut of the sick, as to the powers of life, and the alleviation or augmentum morbi, nunquam negligendus (scil. pecul. aspectus); the increase of the disease, never ought to be neglected;

imprimis variæ conditiones oculorum, languor et hebetudo aut in the first place the various conditions of the eyes, languor and dullness or rubor, aut splendor, aut insolita ferocitas que præter solitum redness, or brightness, or unaccustomed fierceness and unusual distortio eorum et aliæ morbidæ species, veluti si excavati sunt, distortion of them and other morbid appearances, as if they were excavated, vel alter vel uterque clauditur, vel alter non ita solitus apparet or one or both is shut, or one not so accustomed appears major altero. Quoque conditiones oris et præsertim linguæ, larger than the other. Also the conditions of the mouth and especially of the tongue, rubræ, albidæ, sordidæ, nigricantis, aridæ (singulis "linguæ" subauditur), (being) red, whitish, sordid, becoming blackish, dry,

quæ (sc. conditiones linguæ) præsentibus demonstrant morbum, decedentes, which present evidently prove disease, going away, aut versæ in melius, sæpe ostendunt eundem (sc. morbum) decedentem. or turned for the better, often shew the same going off.

Quin et varii morbidi odores aliquando detegunt naturam morbi Moreover various morbid odours sometimes detect the nature of the disease et ideo merentur observari: scilicet, insolitus odor sive and on that account deserve to be observed: that is to say, an unusual odour or fætor halitus pulmonis vel cutis, vel singularum excretionum, fetor of the exhalation of the lungs or skin, or of the individual excretions, vel universi corporis, vel cuiusvis partis ejus (corporis) veluti in or of the whole body, or of any part of it as in carcinomate, variola, putridis morbis. Quoque multæ carcinoma (cancer), variola (small-pox), putrid diseases. Also many vitiatæ qualitates corporis, quæ maxime percipiuntur tactu, vitiated qualities of the body, which for the most part are perceived by the touch,

atus, et præter solitum pallidus, ruber, flavus, fuscus, lividus, varians; peculiaris quoque vultus aspectus, ab actione musculorum, aut motu sanguinis, et sæpe a statu animi pendens, nullisque describendus verbis, qui tamen ægri conditionem, quod ad vires vitæ, et morbi levamen aut augmentum, omni sermone melius et certius depingit, nunquam negligendus: Variæ imprimis oculorum conditiones, languor et hebetudo, aut rubor, aut splendor, aut ferocitas insolita, eorumque præter solitum distortio, et aliæ species morbidæ, veluti si excavati sunt, vel alter vel uterque clauditur, vel alter altero major apparet non ita solitus

Sedulo quoque observandæ sunt oris et præsertim linguæ conditiones, rubræ, albidæ, sordidæ, nigricantis, aridæ, quæ præsentibus morbum demonstrant; decedentes aut in melius versæ, eundem decedentem sæpe ostendunt. Quin et odores varii morbidi naturam morbi aliquando detegunt, et ideo observari merentur: odor, scilicet, sive fætor insolitus halitus pulmonis vel cutis, vel excretionum singularum, vel universi corporis, vel partis ejus cuiusvis, veluti in carcinomate, variola, morbis putridis. Multæ quoque, quæ tactu maxime percipiuntur, qualitates corporis vitiatæ, calor, frigus, durities, vel rigiditas, mollities, humiditas, sic-

calor, frigus, durities, vel rigiditas, mollities, humiditas, siccitas, crassitudo, heat, cold, hardness, or stiffness, softness, moistness, dryness, thickness, tenuitas, tumor, macies vel universi corporis, vel singularum thinness, tumour, emaciation either of the entire body, or of particular partium, debentobser vari omni curâ. Autem eo magis decet parts, ought to be observed with every care. But the more does it become us attendere ad vitia manifestarum qualitatuum corporis hujusmodi, quia to attend to derangements of the manifest qualities of the body of this sort, because observentur facile, et sint minime fallacia, neque possit they can be observed easily, and are not at all deceptive, nor can aeger celare ea medicum, neque, ut medicus intelligat the sick conceal them from the physician, nor, that the physician may understand rem, sit opus multis interrogationibus, quæ (scilicet interrogaciones) the thing, is there need of many interrogations, which sæpe sunt ad modum ingratae. often are very unpleasant.

36. Causa dicitur multifariam apud medicos cum disserunt de Cause is named variously by physicians when they treat of morbis; et profecto sensu aliquantum diverso ab eo quo diseases; and truly in a sense somewhat different from that in which hoc vocabulum solet usurpari vel in scriptis philosophorum, this word is accustomed to be used either in the writings of philosophers, vel in communi sermone hominum: igitur oportet unumquemque or in the common conversation of men: therefore it behoves every one incumbentem studio medicinæ scire varios medicos sensus applying himself to the study of medicine to know the various medical significations vocabuli causæ, vel saltem usitatissimos, (scilicet sensus.) of the word cause, or at least the most common ones.

37. Imprimis medici distinguunt causas morbi in In the first place physicians divide the causes of disease into proximam et remotas; remotas iterum in prædisponentes et occasionales proximate and remote; the remote again into predisposing and occasional vel excitantes vel nocentes potentias. or exciting or noxious powers (agents.)

38. Proxima causa, ut medici scriptores definiunt (eam), est illa The proximate cause, as medical writers define (it), is that quæ præsens facit morbum, sublata tollit, mutata mutat. which present causes the disease, removed removes it, changed changes it.

39. Prædisponens causa est illa quæ reddit corpus tantum The predisposing cause is that which renders the body only

citata, crassitudo, tenuitas, tumor, macies, vel universi corporis vel partium singularum, omni cura observari debent. Ad hujusmodi autem qualitatuum manifestarum corporis vitia eo magis attendere decet, quia facile observentur, et minime fallacia sint, neque aeger ea medicum celare possit, neque, ut rem intelligat medicus, multis, quæ sæpe admodum ingratae sunt, opus sit interrogationibus.

36. Causa multifariam dicitur apud medicos cum de morbis disserunt; et sensu profecto aliquantum diverso ab eo quo hoc vocabulum usurpari solet, vel in scriptis philosophorum, vel in communi hominum sermone. Varios,

igitur, medicos sensus vocabuli causæ, vel usitatissimos saltem, unumquemque medicinæ studio incumbentem scire oportet.

37. Distinguunt imprimis medici morbi causas in proximam et remotas; remotas iterum in prædisponentes, et occasionales vel excitantes vel potentias nocentes.

38. Causa proxima, ut definiunt scriptores medici, est illa quæ præsens morbum facit, sublata tollit, mutata mutat.

39. Causa prædisponens est illa quæ corpus tantum morbo opportunum reddit; scilicet ut adnota causa excitante in morbum incidat.

opportunos morbo, scilicet, ut excitante causâ admotâ, *liable to disease, that is, that an exciting cause being applied,*
 incidat (corpus) in morbum. *it may fall into disease.*

40. Demum occasionalis vel excitans causa est ea quæ excitat morbum *Lastly, the occasional or exciting cause is that which excites disease*
 in corpore jam facto proclivi. *in the body already made inclined to it (predisposed).*

41. Igitur conditio corporis quæ facit obnoxium morbo est *Therefore the condition of the body which renders it liable to disease is*
 corrigenda; remotæ causæ quæ excitant morbum evitandæ; *to be corrected; the remote causes which excite disease to be avoided;*
 proxima causa morbi tollenda; et singula indicia *the proximate cause of disease to be removed; and the individual signs*
 ejusdem (causæ proximæ) quæ (indicia) sunt maxime molestia mitiganda. *of the same * which are most troublesome to be mitigated.*

Sic morbi præcaventur sanantur, levantur. *Thus diseases are guarded against, are cured, are relieved.*

42. Remotior causa, quæ facit tantum proclivitatem ad morbos, *The more remote cause, which produces only predisposition to diseases,*
 semper hæret in corpore ipso, licet sæpe duxerit primam *always inheres in the body itself, although often it has drawn its first*
 originem extrinsecus: vero excitans causa potest esse vel intus *origin from without: but the exciting cause may be either within*
 vel extrinsecus. Utrâque concurrente morbus fit, quem neutra sola *or from without. Both concurring disease takes place, which neither alone*
 potest efficere. Enim neque omnis excitans causa morbi facit *can effect. For neither does every exciting cause of disease produce*
 morbum in omni homine; neque omnes qui sunt jam facti *disease in every man; nor do all who are already rendered*
 proclives ad morbos, nullâ excitante causâ admotâ, incidunt in *predisposed to diseases, no exciting cause being applied, fall into*
 morbos. *diseases.*

43. Corpus itaque jam factum opportunum morbo, videtur *The body therefore already rendered liable to disease, seems*
 deflexisse nonnihil a sano et perfectissimo statu, licet *to have deviated something from the healthy and most perfect state, although*
 actiones ejus (scil. corporis) nondum adeo impediuntur. ut verus *the actions of it are not yet so far impeded, that true*
 morbus recte dicatur adesse. Vero nonnunquam talis conditio *disease can rightly be said to be present. But sometimes such a condition*

40. Causa demum occasionalis vel excitans est ea quæ in corpore jam proclivi facto (39) morbum excitat.

41. Corrigenda, igitur, est corporis conditio quæ morbo obnoxium facit; evitandæ causæ remotæ quæ morbum excitant; tollenda proxima morbi causa; et mitiganda singula ejusdem indicia quæ maxime molesta sunt. Sic morbi præcaventur, sanantur, levantur.

42. Causa remotior, quæ proclivitatem tantum ad morbos facit, in ipso corpore semper hæret, licet sæpe extrinsecus primam originem

duxerit: causa vero excitans vel intus vel extrinsecus esse potest. Concurrente utraque fit morbus, quem neutra sola efficere potest. Neque enim in omni homine omnis causa morbi excitans morbum facit; neque omnes qui jam ad morbos proclives facti sunt, nulla admotâ causa excitante, in morbos incidunt.

43. Corpus itaque morbo jam factum opportunum, a statu sano et perfectissimo nonnihil deflexisse videtur, licet nondum actiones ejus adeo impediuntur, ut verus morbus recte dicatur adesse (24.) Nonnunquam vero talis corporis

corporis perstans diu Ingravescit eo usque, ut sola, nullâ
of the body continuing for a long time increases to that height, that it alone, no
 excitante causâ adjectâ, faciat justum et manifestum morbum; vel,
exciting cause being added, causes complete and manifest disease; or,
 ut quidam amant loqui, fiat excitans causa quoque.—Generalis
as some like to speak, becomes an exciting cause also. — General
 debilitas solidarum partium, que nimia mobilitas solidarum partium,
debility of the solid parts, and too great mobility of the solid parts,
 quæ, causâ distinctionis, dicuntur vivæ, plenitudo corporis a
which, for the sake of distinction, are called living, fulness of body from
 nimia abundantia sanguinis, sunt exempla hujusmodi.
too great abundance of blood, are examples of this kind.

44. Nec habet quisquam hominum tam firmam valetudinem, que
Nor has any one of men such strong health, and
 tantum robur corporis, quin, quibusdam excitantibus causis
so much strength of body, but that, certain exciting causes
 admotis, incidat in gravissimos morbos. Variola semel,
being applied, he may fall into the most severe diseases. Small-pox once,
 lues venerea sæpe, inficiunt etiam sanissimos; venena necant; nimium
lues venerea often, infect even the most healthy; poisons kill; too much
 caloris vel frigoris nocet multimodis.
of heat or of cold hurts in many ways.

45. Excitans causa quoque, quanquam non statim induxerit
The exciting cause also, although it have not immediately induced
 morbum, si perstiterit diu, corrumpet paulatim constitutionem
disease, if it should continue a long time, will break down gradually the constitution
 corporis quamvis validissimam, et reddet obnoxiam variis morbis;
of the body although the strongest, and will render it liable to various diseases;
 scilicet, gignit alteram remotam causam (nempe quæ facit corpus
that is to say, it engenders another remote cause (namely which renders the body
 obnoxium morbo) vel convertitur in eam. Igitur eadem res
liable to disease) or is changed into it. Therefore the same thing
 potest esse nunc excitans causa, nunc rursus remotior causa. —
may be now an exciting cause, now again a more remote cause.—
 Intemperies cœli, desidia, luxus, sunt exempla hujusmodi.
The distemper of the atmosphere, sloth, luxury, are examples of this kind.

46. Porro de his tribus generibus causarum morbi, juvabit
Moreover concerning these three kinds of causes of disease, it will benefit
 scire, notionem utriusque generis remotarum causarum esse justam,
to know, that the notion of both kind of remote causes is correct,
 et magni momenti in medicâ re. Enim quamvis medici sæpe
and of great moment in medical practice. For although physicians often

conditio diu perstans eo usque ingravescit, ut sola, nullâ adjecta causa excitante, justum et manifestum morbum faciat; vel, ut quidam loqui amant, causa quoque excitans fiat. Solidarum partium debilitas generalis, partiumque solidarum, quæ, distinctionis causa, vivæ dicuntur, nimia mobilitas corporis plenitudo, a nimia sanguinis abundantia, hujusmodi exempla sunt.
 44. Nec quisquam hominum tam firmam valetudinem tantumque corporis robur habet, quin, causis quibusdam excitantibus admotis, in gravissimos morbos incidat. Variola semel, lues venerea sæpe, etiam sanissimos inficiunt;

venena necant; caloris vel frigoris nimium multimodis nocet.
 45. Causa quoque excitans, quanquam non statim morbum induxerit, si diu perstiterit, constitutionem corporis, quamvis validissimam, paulatim corrumpet, et variis morbis obnoxiam reddet; scilicet alteram causam remotam, nempe quæ corpus morbo opportunum facit, gignit, vel in eam convertitur. Eadem igitur res nunc causa excitans, nunc rursus causa remotior, esse potest.—Cœli intemperies, desidia, luxus, hujusmodi exempla sunt.
 46. De his porro tribus generibus causarum morbi, scire juvabit, notionem causarum re-

erraverint haud parum de remotis causis variorum morborum, *have erred not a little concerning the remote causes of various diseases,* cum ausi sunt statuere temere de iis; tamen generales notiones de iis quæ versarentur ipsis (sc. medicis) in animo fuerunt sanæ; quæ sane remotæ causæ multorum morborum tam prædisponentes quam excitantes, sunt jam satis cognitæ et exploratæ vel observando vel experiendo et caute ratiocinando: (hæc omnia gerundia pro substantivis ponuntur) quæ notitia earum est utilissima medicis.

when they have dared to conclude rashly concerning them; nevertheless the general notions concerning them which they turned over with themselves in their mind were sound; and truly the remote causes of many diseases as well predisposing as exciting, are now sufficiently known and explored either by observing (observation) or by proving (experience) and by cautiously reasoning: (cautious induction) and the knowledge of them is very useful to physicians.

47. Vero quod attinet proximam causam, generalis notio ipsa ejus, *But as regards the proximate cause, the general notion itself of it,* si non prorsus falsa, est saltem admodum confusa, et obscura, et temere abstracta a rebus. Enim medici quærunt, et non facile inventientes, fingunt sibi aliquid causæ omnis morbi, unde iste morbus oriatur, fere eodem modo, ac variæ mutationes vel effectus, quæ observantur in inanimatis rebus, procedunt a suis causis. Autem in plerisque affectionum, quas solemus vocare morbos, nihil istiusmodi videtur existere, neque profecto potest existere; et talis notio plane oritur a male intellectâ naturâ, tum corporis ipsius, tum quoque morborum qui fiunt in eo (corpore). Enim morbus est non unus et simplex eventus vel mutatio, qualem solemus contemplari in inanimatis rebus et vocare effectum; sed series, sæpe longa, talium eventuum vel mutationum;

if not altogether false, is at least very confused, and obscure, and rashly drawn (deduced) from things. For physicians seek, and not easily finding, imagine to themselves something of a cause of every disease, whence that disease arises, almost in the same manner, as the various changes or effects, which are observed in inanimate matter, proceed from their causes. But in most of the affections, which we are accustomed to call diseases, nothing of this sort seems to exist, nor truly can exist; and such a notion evidently arises from the imperfectly understood nature, as well of the body itself, as also of the diseases which take place in it. (corpore). Enim morbus est non unus et simplex eventus vel mutatio, qualem solemus contemplari in inanimate things and to call effect; but a series, often a long one, of such events or changes;

motarum utriusque generis (37) justam esse, et magni momenti in re medica. Quamvis enim medici haud parum sæpe erraverint de causis remotis variorum morborum, cum temere de iis statuere ausi sunt; tamen notiones generales de iis quæ ipsis in animo versarentur sanæ fuerunt: multorumque sane morborum causæ remotæ, tam prædisponentes quam excitantes, vel observando, vel experiendo, et caute ratiocinando, jam satis cognitæ sunt et exploratæ; earumque notitia medicis utilissima est.

47. Causam vero proximam quod attinet, ipsa ejus notio generalis, si non prorsus falsa, saltem confusa admodum est, et obscura, et te-

mere a rebus abstracta. Querunt enim medici, et, non facile inventientes, sibi fingunt aliquid causæ omnis morbi, unde iste morbus oriatur, eodem fere modo ac variæ mutationes vel effectus, quæ in rebus inanimatis observantur, a suis causis procedunt. In plerisque autem affectionum, quas morbos vocare solemus, nihil istiusmodi existere videtur, neque profecto existere potest; et talis notio plane oritur a male intellecta natura, tum corporis ipsius, tum quoque morborum qui in eo fiunt. Morbus enim non est unus et simplex eventus vel mutatio, qualem in rebus inanimatis contemplari solemus et effectum vocare; sed series

quarum aliæ videntur esse causæ aliis. Potest quidem fieri, ut, of which some seem to be causes to others. It may even happen, that, unâ vel alterâ harum sublata, tota series vel abrumpatur one or other of them being removed, the entire series either may be broken vel brevi desinat, et sic morbus mutetur in sanitatem: sed or quickly terminate, and thus disease be changed into health: but hoc est minime perpetuum, neque in omni morbo, neque in fere this is by no means constant, neither in every disease, nor in almost quolibet morbo omni tempore (sc. morbi.) Præterea corpus ipsum habet any disease at every period of it. Besides the body itself has

se longe aliter ac inanimata res quod (attinet) ad mutationes quæ itself far differently from inanimate matter as to the changes which fiunt in eo, (sc. corpore) et causas, sive externas sive internas take place in it, and the causes, whether external or internal, unde hæ (sc. mutationes) proveniant. Enim aliquod principium mutationis whence they proceed. For some principle of change

inest vivo corpori, quodammodo simile illi (sc. principio) quod exists in the living body, in some degree like to that which

observatur in herbis et longe alienum a naturâ inanimatæ is observed in plants, and far different from the nature of inanimate materiæ, ægre definiendum, nondum exploratum eâ diligentia et matter, hardly to be defined, not yet explored with that diligence and

accuratione quâ esset par, nominandum haud inepte vitale accuracy with which it was just, to be named not inappropriately the vitæ principium, cui vix minus quam causis vulgò observatis principle, to which (scarcely) no less than to the causes commonly observed

sunt tribuendæ plurimæ mutationes, tam morbosæ quam salutares are to be attributed the many changes, as well diseased as healthy quæ eveniunt corpori. Quum hæc sunt ita poterit non esse which happen to the body. Since these things are so it will not be

mirum multa commenta medicorum de proximis wonderful that the many expositions of physicians concerning the proximate

causis variorum morborum, esse prorsus futilia, et non modo falsa sed causes of various diseases, are altogether futile, and not only false but

adeo confusa et obscura ut possint vix intelligi, neque so confused and obscure that they can scarcely be understood, nor

fortassè unquam fuerint satis intellecta ab auctoribus ipsis perhaps ever were sufficiently understood by the authors themselves eorum (sc. commentorum.) of them.

48. Vero unde (sunt) morbi, vel causæ morborum? Certe
But whence diseases, or the causes of diseases? Truly

æpe longa, talium eventuum vel mutationum; quarum aliæ aliis causæ videntur esse (26). Fieri quidem potest, ut, sublata una alterave earum, tota series vel abrumpatur, vel brevi desinat; et sic morbus in sanitatem mutetur. Sed hoc minime perpetuum est, neque in omni morbo, neque in quolibet fere morbo omni tempore. Præterea, corpus ipsum longe aliter se habet ac res inanimata, quod ad mutationes uæ in eo fiunt, et causas, sive externas sive internas, unde hæ proveniant. Inest enim eorum vivo principium aliquod mutationis, simile quodammodo illi quod in herbis observatur, et longe alienum a natura materiæ inanimatæ,

ægre definiendum, nondum ea qua par esset diligentia et accurate exploratum, Vitale Principium haud inepte nominandum, cui vix minus quam causis vulgo observatis tribuendæ sunt plurimæ mutationes, tam morbosæ quam salutares, quæ corpori eveniunt. Hæc quum ita sint, non mirum esse poterit multa medicorum commenta de causis proximis variorum morborum prorsus futilia esse, et non modo falsa, sed adeo confusa et obscura, ut vix possint intelligi, neque fortassè ab ipsis eorum auctoribus unquam satis intellecta fuerint.
48. Unde vero morbi, vel morborum causæ!

imprimis ab ipsâ constitutione animalis machinæ. Ut
in the first place from the very constitution of the animal machine. As
 vitrum prodit fragile ex officinâ, sic homines nascuntur debiles.
glass goes forth brittle from the factory, so men are born weak,
 caduci, opportuni morbis. Hinc multi morbi, idoneâ excitante
perishable, liable to diseases. Hence many diseases, a proper exciting
 causâ modo admotâ, communes omnibus. Sed quidam homines præ cæteris
cause only being applied, common to all. But some men before others
 plectuntur aliis atque aliis morbis: ratio hujûs rei
are attacked by other and other (different) diseases: the reason of this thing
 (est) multiplex.
is manifold.

49. Ut sanus homo gignit sanam prolem, sic morbosus (homo gignit)
As a healthy man begets a healthy offspring, so a diseased man begets
 morbosam (sc. prolem). Hinc hæreditarii morbi (qui) transituri in seros
a diseased one. Hence hereditary diseases that will pass into remote
 nepotes: hoc modo immeriti sæpe luimus delicta
grandchildren: in this manner undeserving often we expiate the faults
 majorum. Sunt quidam ex his morbis qui produunt sese
of our ancestors. There are some of these diseases which betray themselves
 aperte primâ ætate; sunt (ii) qui invadunt pariter omnem
openly at the earliest age; there are those which attack alike every
 ætatem; nec desunt (ii) qui occulti delitescunt usque ad
age; nor are there wanting those which concealed lurk quite to
 summam senectutem, neque suspecti, que nacti vires paulatim,
the ripest old age, nor suspected, and having acquired strength by degrees,
 erumpunt gravius, quisque demum suo tempore.
break out more severely, each one at length at its own time.

50. Sunt morbi qui nascuntur cum nobis vel vitia, neque
There are diseases which are born with us or defects, nor
 tamen congenita: nempe, si, donec fœtus lateret
nevertheless congenital: for example, if, whilst the fœtus was lying concealed
 in utero, matre forsân incolumi, acceperit aliquid detrimenti
in the womb, the mother perhaps being safe, should receive something of hurt
 tantum a quovis casu. Sunt forsitan morbi neque nati
merely from any accident. There are perhaps diseases neither born
 simul neque congeniti, quos infans videatur sxisse
at the same time nor congenital, which the infant seems to have sucked in
 cum primo lacte nutricis.
with the first milk of the nurse.

51. Porro sunt qui sequuntur et comitantur varios
Moreover there are those which pursue and accompany the various

Certe ab ipsa imprimis machinæ animalis constitutione. Ut vitrum ex officina prodit fragile, sic homines debiles, caduci, morbis opportuni, nascuntur. Hinc multi morbi, causa modo excitante idonea admota, omnibus communes. Sed quidam præ cæteris homines aliis atque aliis plectuntur morbis. Hujus rei ratio multiplex.

49. Ut sanus sanam prolem, sic morbosus morbosam gignit. Hinc morbi hæreditarii in seros nepotes transituri. Hoc modo sæpe delicta majorum immeriti luimus. Sunt quidam ex his morbis qui prima ætate sese aperte

produunt; sunt qui omnem ætatem invadunt pariter; nec desunt qui ad summam usque senectutem occulti delitescunt, neque suspecti viresque paulatim nacti, suo quisque demum tempore, gravius erumpunt.

50. Sunt qui nobiscum nascuntur morbi vel vitia, neque tamen congenita: nempe, si, donec in utero lateret, matre forsân incolumi, fœtu tantum a casu quovis aliquid detrimenti acceperit. Sunt forsitan neque simul nati neque congeniti morbi, quos cum prima nutricis lacte infans sxisse videtur.

51. Porro, sunt qui varios ætatis gradus se

gradus ætatis, quisque suum solum; nempe, (ii) qui ducunt
periods of age, each one its own alone; for example, those which draw
 originem ex iis mutationibus quas (mutationes) corpus subit,
their origin from those changes which the body undergoes,
 variis ætatibus. Hinc varii morbi infantum, juvenum,
at the various ages. Hence the various diseases of infants, of youth,
 senum.
of old men.

52. Quin et uterque sexus, præsertim muliebris, (sc. sexus) habet suos
But also both sex, especially the female, has its own
 morbos, provenientes cum a generali habitu corporis, tum quoque a
diseases, proceeding as well from the general habit of body, as also from
 speciali fabricâ, et statu, et usu, partium quæ inserviunt
the special structure, and state, and use, of the parts which serve for
 generationem. Sunt igitur morbi et virorum et fœminarum,
generation. There are therefore diseases both of men and of women,
 sunt (sc. morbi) virginum, gravidarum, parturientium, lactantium,
here are those of virgins, of pregnant, of parturient, of suckling,
 vetularum.
of old women.

53. Cælum ipsum sub quo homines degunt, nonnunquam facit
The atmosphere itself under which men live, sometimes makes them
 ægros (sc. homines). Nimirum unicuique regioni inest suum
sick. Doubtless to each particular region there is its own
 vitium: sive fuerit caldior justo, sive frigidior, sive varia, que
effect: whether it shall be hotter than proper, or colder, or variable, and
 obnoxia multis et subitis mutationibus tempestatis.
subject to many and sudden changes of weather.

54. Aer quoque ipse, qui purus alit sacram flammam vitæ, factus
The air also itself, which pure feeds the sacred flame of life, become
 impurus, potest vel statim extinguere eandem, vel onustus multis
impure, can either immediately extinguish the same, or loaded with many
 vaporibus, aut corruptus quibusdam nocivis effluviis inducere ingentem cohortem
vapours, or corrupted by certain noxious effluvia induce an immense train
 morborum.
of diseases.

55. Cibi que potus etiam quibus utimur sæpe corrumpuntur, que
The food and drink even which we use often are corrupted, and
 interdum inquinantur rebus infestissimis sanitati et vitæ:
sometimes are adulterated with things very prejudicial to health and to life:
 idem, (cibi potusque,) quamvis optimi suâ naturâ, sumpti
at the same, although the best of their kind, taken

antur, et suum quisque solum comitantur;
 nempe, qui ex iis quas corpus, variis ætatibus,
 mutationibus subit, originem ducunt. Hinc
 varii infantum, juvenum, senum, morbi.

52. Quin et uterque sexus, præsertim mulie-
 ris, suos morbos habet, cum a generali cor-
 poris habitu provenientes, tum quoque a fabrica
 speciali, et statu, et usu, quæ generationem
 inserviunt partium. Sunt igitur et virorum et
 fœminarum morbi; sunt virginum, grvida-
 rum, parturientium, lactantium, vetularum.

53. Cælum ipsum, sub quo degunt homines,

nonnunquam ægros facit. Unicuique nimirum
 regioni suum inest vitium: sive caldior justo,
 sive frigidior fuerit, sive varia, multisque et
 subitis tempestatis mutationibus obnoxia.

54. Aer quoque ipse, qui purus sacram vitæ
 flammam alit, impurus factus, eandem vel sta-
 tim extinguere potest, vel multis vaporibus
 onustus, aut nocivis quibusdam effluviis cor-
 ruptus, ingentem morborum cohortem inducere.

55. Cibi etiam potusque quibus utimur sæpe
 corrumpuntur, rebusque interdum inquinantur
 sanitati et vitæ infestissimis: idem vero,

nimiâ copiâ, serius vel ocyus nocebunt corpori.
in too great plenty, later or sooner will hurt the body.

56. Porro venena existunt, prædita vi adeo lethali, ut
Moreover poisons exist, endowed with a power so deadly, that
 recepta in corpus vel minimâ quantitate, que vix ac ne
received into the body even in the least quantity, and scarcely and not
 quidem vix detegenda sensibus, induxerint
even scarcely (i. e. scarcely if at all) to be detected by the senses, will bring on
 dirissimos morbos, vel fortasse inevitabilem mortem.
the most dreadful diseases, or perhaps inevitable death.

57. Denique homo objicitur innumeris casibus, neque raro
Lastly man is exposed to innumerable accidents, nor seldom (often)
 maximis periculis, evasurus plerumque quidem incolumis: tamen
to the greatest dangers, to escape for the most part indeed safe: nevertheless
 sæpe infelix succumbit; sæpe evadit ægre, saucius, contusus,
often unfortunate he fails; often he escapes difficultly, wounded, contused,
 fractus aut luxatus (secundum) membra; nonnunquam prorsus insanabilis.
broken or dislocated as to his limbs; sometimes wholly incurable.
 Que casus hujusmodi, quanquam trahant primam originem
And accidents of this kind, although they should draw their first origin
 a externâ causâ, haud raro desinunt in internos morbos.
from an external cause, not seldom (often) terminate in internal diseases.

58. Omnia hæc extrinsecus, nec minora pericula imminet
All these things from without, nor do less dangers hang over him
 intus.
from within.

59. Dum homo spirat, fundit venenum lethale sibi que
Whilst man breathes, he pours forth a poison deadly to himself and
 aliis spirantibus (animalibus.) Neque halitus solus pulmonis
other breathing animals. Nor does the exhalation alone of the lungs
 adeo nocet; manat et ab omni foramine cutis subtilissima
so hurt; there flows also from every pore of the skin a very subtle
 materia, venenata fortasse putrescens, quæ collecta diu neque
matter, poisonous perhaps putrefying, which collected for a long time, nor
 diffusa per auras, et admota denuo corpori, aut iterum
diffused through the air, and applied again to the body, or a second time
 recepta in id ipsum (sc. corpus), inficit (sc. corpus) gravissimis
received into it itself, afflicts it with the severest
 morbis; nec sistit gradum, sed nacta vires veluti
diseases; nor does it stay its progress, but having acquired strength as it were
 per pabulum, grassatur, longe que late per populos.
by the pasturage, spreads, far and widely through the people.

quamvis sua natura optimi, nimia copia sumpti, serius vel ocyus corpori nocebunt.

56. Existunt porro venena vi adeo lethali prædita ut vel minima quantitate, sensibusque vix ac ne vix quidem detegenda, in corpus recepta, dirissimos morbos, vel fortasse inevitabilem mortem, induxerint.

57. Denique, innumeris casibus, nec raro maximis periculis, homo objicitur, plerumque quidem incolumis evasurus: sæpe tamen infelix succumbit; sæpe saucius, contusus, membra fractus aut luxatus, ægre evadit; nonnunquam prorsus insanabilis. Casusque hujusmodi, quanquam primam a causa externa

originem trahant, haud raro in internos morbo desinunt.

58. Hæc omnia extrinsecus; nec minora intus pericula imminet.

59. Dum spirat homo lethale sibi aliisque spirantibus venenum fundit. Neque solus pulmonis halitus adeo nocet: manat et ab omni foramine materia subtilissima, venenata fortasse putrescens, quæ diu collecta, neque per auras diffusa, et corpori denuo admota, aut iterum in id ipsum recepta, gravissimis morbi inficit; nec sistit gradum, sed veluti vires per pabulum nacta, longe lateque per populos grassatur.

60. *Animales functiones quoque, quas regimus nostro arbitrio, The animal functions also, which we govern by our own will, sæpe aut negliguntur aut exercentur nimis. Ex utroque (est) often either are neglected or are exercised too much. From both there is periculum. Desidiâ, sive animi sive corporis, vires utriusque danger. By sloth, whether of mind or of body, the powers of both languescunt: nimia exercitatione, læduntur haud minus. grow languid: by too much exercise, they are injured no less.*

Enim provida Parens rerum statuit, ut vires singularum For the provident Parent of things has resolved, that the strength of the individual partium, et universi corporis, que animi, roborentur et parts, and of the entire body, and of the mind, should be strengthened and acuantur usu; et huic iterum posuit certos fines: ita ut usus whetted by use; and to this again has placed certain limits: so that the use quem natura voluit neque ommittatur impune, neque which nature intended neither can be omitted with impunity, nor intendatur ultra modum. Hinc athletæ, et otiosi et desides, be increased beyond due bounds. Hence wrestlers, and the idle and slothful, pariter (sunt) obnoxii morbis, sed singuli suis (sc. morbis): hinc quoque alike are subject to diseases, but each to their own: hence also damnum à nullâ aut nimia exercitatione mentis: hinc quoque harm from no or too great exercise of the mind: hence also multi morbi, quibus variis artifices sunt obnoxii, fere morbosi the many diseases, to which the various artisans are liable, commonly diseased et degeneres homines: scilicet, qui occupati semper eadem arte, and degenerate men: that is to say, who occupied always with the same art, que ipsâ forsitan parum salubri, exercent quasdam partes corporis plurimum, and itself perhaps not healthy, exercise certain parts of the body a great deal, sæpe nimis, dum utuntur multis aliis partibus parum; vel fortasse often too much, whilst they use many other parts little; or perhaps pravo situ corporis, aut malo genere vitæ, multum impediunt by a crooked position of the body, or by a bad kind of life, greatly impede functiones earundem (sc. partium); et sic dum adipiscuntur mirum the functions of the same; and thus whilst they acquire a wonderful usum et robur quarandum partium, male perdunt generalem vigorem use and strength of certain parts, badly destroy the general vigour corporis, et, quæ (sc. valetudo) pendet ab illo (sc. vigore corporis), of the body, and, what depends upon it, prosperam valetudinem. good health.

61. *Cæterum et ab iis functionibus, tam animi quam corporis, But also from those functions, as well of the mind as of the body,*

60. *Functiones quoque animales, quas nostro arbitrio regimus, sæpe aut negliguntur, aut nimis exercentur. Ex utroque periculum. Desidia, sive animi sive corporis, utriusque vires languescunt: nimia exercitatione, haud minus læduntur. Statuit enim provida rerum Parens, ut singularum partium, et universi corporis animique vires usu roborentur et acuantur; et huic iterum certos fines posuit: ita ut neque quem voluit natura usus impune ommittatur, neque ultra modum intendatur. Hinc athletæ, et otiosi et desides, pariter morbis, sed singuli suis, obnoxii: hinc quoque*

damnum a nulla aut nimia mentis exercitatione: hinc quoque multi morbi, quibus variis obnoxii sunt artifices, morbosi fere et degeneres homines; scilicet qui eadem semper arte, ipsaque forsitan parum salubri, occupati, partes quasdam corporis plurimum, sæpenimis, exercent, dum multis aliis partibus parum utuntur; vel fortasse pravo corporis situ, aut malo vitæ genere, earundem functiones multum impediunt; et sic, dum mirum quarundam partium adipiscuntur usum et robur, generale corporis vigorem, et, quæ ab illo pendet, prosperam valetudinem male perdunt.

quas regimus nullo arbitrio nostro, potest esse non leve
which we govern by no will of our own, there may be no slight
 discrimen valetudinis. Imprimis affectus animi qui modici
danger of disease. In the first place affections of the mind which moderate
 grate excitant, vehementes, aut graves et diuturni, frangunt
gratefully excite, violent, or severe and long continued, break down
 vires pariter hujus (sc. animi) ac corporis; interdum statim
the strength alike of this and of the body; sometimes immediately
 extinguunt hominem, sæpius macerant longâ valetudine. Etiam
destroy the man, more often waste him by long disease. Also
 excessus vel defectus somni, quo egemus ad reficiendas exhaustas
excess or deficiency of sleep, which we require to recruit the exhausted
 vires, nocent et anjmo et corpori.
powers, hurt both the mind and the body.

62. Sunt multa (sc. negotia) semper excernenda e corpore in
There are many things always to be excreted from the body in
 sanissimo statu: si hæc retinentur, est malum: si plus justo
the most healthy state: if these are retained, there is mischief: if more than proper
 excernitur, malum quoque: si retinenda naturâ excernuntur
is excreted, bad also: if things to be retained by nature (naturally) are excreted
 sponte, vel casu, vel arte, malum iterum. Ex his quoque
spontaneously, or by accident, or by art, mischief again. From these also
 intelligitur facillime, gravissimum periculum posse sæpe oriri ab
it will be understood very easily, that the greatest danger may often arise from
 inepto aut intempestivo usu remediorum: quippe quæ aut
the unsuitable or untimely use of remedies: as being things which either
 excitent et intendant præter naturam varias funciones, proprias
can excite and increase beyond nature (unnaturally) the various functions, peculiar
 et necessarias corpori, aut sopiant et repriment, que demum sæpe
and necessary to the body, or can lull and repress them, and indeed often
 minuant secreciones et excretiones, sæpe augeant ultra
can diminish the secretions and excretions, often can increase them beyond
 modum, vel denique efficiant novas excretiones et detractiones humorum,
due bounds, or lastly effect new excretions and detractions of humours,
 quales natura neque unquam instituerat in sano statu, neque potest
such as nature neither ever had instituted in the healthy state, nor can
 ferre sine damno.
bear without injury.

63. Ut solidæ partes interdum flaccescunt, molliuntur, fere solvuntur,
As the solid parts sometimes grow flaccid, are softened, almost are dissolved,
 factæ impares propriis muneribus; sic fluidæ (partes) nonnunquam
rendered unequal to their proper functions; so the fluid sometimes

61. Cæterum et ab iis quas nullo nostro arbitrio regimus, tam animi quam corporis functionibus, valetudinis discrimen non leve esse potest. Animi imprimis affectus, qui modici grate excitant, vehementes, aut graves et diuturni, hujus pariter ac corporis vires frangunt; hominem interdum statim extinguunt, sæpius longa valetudine macerant. Somni etiam, quo ad exhaustas vires reficiendas egemus, excessus vel defectus, et animo et corpori nocent.

62. Sunt multa in statu sanissimo e corpore semper excernenda. Hæc si retinentur, malum est: si plus justo excernitur, malum quoque: si natura retinenda, sponte, vel casu, vel arte

excernuntur, malum iterum. Ex his quoque (61, 62) facillime intelligitur, gravissimum sæpe oriri posse periculum ab inepto aut in tempestivo remediorum usu: quippe quæ varias funciones, corpori proprias et necessarias, aut excitent et intendant præter naturam, aut sopiant et repriment, secrecionesque demum et excretiones sæpe minuant, sæpe ultra modum augeant, vel denique novas efficiant excretiones et detractiones humorum, quales natura neque instituerat unquam in statu sano, neque sine damno ferre potest.

63. Ut solidæ partes interdum flaccescunt molliuntur, fere solvuntur, propriis muneribus

spissantur, et formantur in solidas massas, etiam durissimas: unde are thickened, and are formed into solid masses, even the hardest: whence impeditæ actiones organorum, insignis dolor, et varii et graves impeded actions of the organs, remarkable pain, and various and severe morbi (sc. nascantur.) diseases.

64. Postremo, quædam animantia sunt recensenda inter
Lastly, certain animated beings are to be enumerated amongst
 causas morborum: nimirum (ea) quæ tolerant suam vitam malo
the causes of diseases: namely, which maintain their own life by the evil
 aliorum. Dominus ipse animalium est prædæ et domicilio animantibus
of others. The lord himself of animals is a prey and habitation to animals
 hujusmodi, quæ vel invadunt extrinsecus, vel habitant intus,
of this description, which either attack him from without, or inhabit him within,
 et rodunt viscera (ejus) adhuc vivi, sæpe cum insigni malo, et
and gnaw the bowels of him yet alive, often with remarkable evil, and
 discrimine vitæ, nec raro jacturâ ipsius.
danger of life, nor unfrequently the loss of it.

65. Verum neque homo objicitur inermis tot que
But neither is man exposed unarmed (unprotected) to so many and
 tantis periculis; neque simul ac morbus invaserit nulla spes
so great dangers; nor as soon as disease has seized him is there no hope
 salutis superest. Enim vis prorsus mirabilis inest corpori,
of safety remaining. For a power altogether wonderful exists in the body,
 quâ tueatur se contra morbos; arceat multos, solvat,
by which it can defend itself against diseases; can ward off many, can resolve,
 quam optime et citissime, multos jam inchoatos; que perducit
in the best and quickest way possible, many already begun; and can bring
 alios lentius, suo modo, ad felicem exitum:
others more slowly, in its own way, to a happy termination.

66. Hæc vocatur Autocrateia, seu Vis Medicatrix Naturæ,
This is called Autocrateia, or Vis Medicatrix Naturæ, (the healing influence
 notissima medicis atque philosophis, et multum,
of Nature,) very well known to physicians and philosophers, and very much,
 neque immerito, celebrata. Hæc sola sufficit ad sanandos multos
nor undeservedly, celebrated. It alone suffices to cure many
 morbos; fere juvat in omnibus: quin et medicamenta optima
diseases; for the most part, it assists in all: but also medicines the very best
 suâ naturâ valent solummodo tantum quantum excitent, dirigant,
in their nature avail only so far as they excite, direct,
 gubernent insitas vires hujus. Enim medicina neque prodest cadaveri,
govern the innate powers of it. For medicine neither benefits the dead body,

mpares factæ; sic fluidæ nonnunquam spissantur, et in massas solidas etiam durissimas formantur: unde organorum actiones impeditæ, dolor insignis, et varii et graves morbi.

64. Postremo, animantia quædam inter morborum causas recensenda sunt: nimirum quæ suam vitam aliorum malo tolerant. Ipse animalium dominus hujusmodi animantibus prædæ est et domicilio, quæ vel extrinsecus invadunt, vel intus habitant, et viscera adhuc vivi rodunt, sæpe cum insigni malo et vitæ discrimine, nec raro ipsius jactura.

65. Verum neque tot tantisque periculis homo inermis objicitur: neque, simul ac morbus in-

vaserit, nulla superest salutis spes. Inest enim corpori vis prorsus mirabilis, qua contra morbos se tueatur, multos arceat, multos jam inchoatos quam optime et citissime solvat, aliosque suo modo, ad felicem exitum lentius perducit.

66. Hæc Autocratieia seu Vis Naturæ medicatrix vocatur; medicis atque philosophis notissima, et multum neque immerito celebrata. Hæc sola ad multos morbos sanandos sufficit, in omnibus fere juvat: quin et medicamenta sua natura optima tantum solummodo valent, quantum hujus vires insitas excitent, dirigant, gubernent. Medicina enim neque prodest cu-

neque, naturâ repugnante, proficit (sc. medicina) quicquam.—Hic plane est *nor, nature resisting, does it avail any thing.—Here plainly there is* aliquid similis et communis inter salutare vires remediorum, *something of similar and common between the salutary powers of remedies,* et nocentes (vires) causarum morborum de quibus dictum est jam. *and the noxious ones of the causes of diseases of which it has been spoken already.*

67. His viribus naturæ, vulnera sanantur, fluxus sanguinis compescitur, *By these powers of nature, wounds are healed. the flow of blood is stopped,* diffracta ossa coalescunt, multa noxia ejiciuntur e corpore; et sic, mala, quæ nulla ars potuisset attingere, evanescent sua sponte sine externâ ope. *broken bones grow together (reunite), many noxious things are thrown out from the body; and thus, evils, which no art could have reached, vanish of their own accord, without external aid.*

68. Igitur medici merito confidunt his viribus, que conantur excitare eas languentes, aut si defecerint plane tum imitari solitas actiones earum arte. Tamen, non semper fidendum (sup. nobis) est iis solis; quippe quæ in quibusdam morbis sunt nullæ in multis vero nimis, et adeo vehementes, ut sint metuendæ magis quam morbus ipse. *Therefore physicians deservedly trust to these powers, and endeavour to rouse them when languid, or, if they have failed altogether, then to imitate the accustomed actions of them by art. However, we must not always trust to them alone; as being things which in some diseases are none (i. e. useless) in many truly too much, and so violent, that they are to be feared more than the disease itself.*

69. Leviores morbi relinquuntur satis tuto viribus Naturæ; sed nemo sanus commiserit hydropem, vel tuem veneream, vel inflammationem cujusvis visceris iisdem; quippe quæ in illis morbis sint nullæ; autem in his vehementissimæ, verum ineptæ, et valde periculosæ, et (quæ) effecturæ (sint) gangrænam, vel suppurationem, fere haud minus exitialem. *The slighter diseases are left sufficiently safely to the powers of nature; but no one in his senses would commit (trust the cure of) dropsy, or lues venerea, or inflammation of any viscus to the same; as being things which in the former diseases are none; but in the latter very violent, but yet unfit, also very dangerous, and would bring on gangrene, or suppuration, almost no less destructive.*

70. Igitur oportet cavere (sc. nosmet) a duplici errore; neque spernere vires Naturæ, neque colere (sc. vires) nimis religiose. Enim *Therefore it behoves to guard ourselves from the double error; neither to despise the powers of nature, nor to worship them too religiously. For*

daveri, neque repugnante natura quicquam proficit.—Hic plane est aliquid similis et communis inter salutare vires remediorum, et nocentes causarum morborum, de quibus jam (67) dictum est.

67. His naturæ viribus vulnera sanantur, sanguinis fluxus compescitur, ossa diffracta coalescunt, multa noxia e corpore ejiciuntur, et sic, quæ nulla ars attingere potuisset mala, sine ope externa sua sponte evanescent.

68. Merito igitur his viribus medici confidunt, easque conantur languentes excitare, aut si plane defecerint, tum solitas earum actiones arte imitari. Non tamen iis solis semper

fidendum est; quippe quæ in quibusdam morbis nullæ sint, in multis vero nimis, et adeo vehementes, ut sint quam ipse morbus magis metuendæ.

69. Leviores morbi Naturæ viribus satis tuto relinquuntur; sed nemo sanus, hydropem, vel tuem veneream, vel visceris cujusvis inflammationem, iisdem commiserit: scilicet quæ in illis morbis nullæ sint; in his autem vehementissimæ, verum ineptæ, et valde periculosæ, et gangrænam, vel suppurationem fere haud minus exitialem, effecturæ.

70. A duplici errore igitur cavere oportet;—neque vires Naturæ spernere, neque nimis reli

tantum abest ut conveniat premere
so much is it from that it suits (so far is it from being proper) to tread in
 vestigia illius, ut sit sæpe necesse tenere prorsus contrarium
the footsteps of her, that it may be often necessary to pursue an entirely contrary
 iter, que niti summâ ope contra conatus ejûs.
course, and to strive with the utmost might against the efforts of her.

71. Neque Natura ipsa docet (sc. nos) officium medicum
Nor does Nature herself teach us that the duty of the physician
 cohlberi tam arcto limite: enim prodiga (sc. Natura) suggerit innumera
is confined to so narrow a limit: for bountiful she supplies innumerable
 remedia quæ pollent maximis viribus in humano corpore, et
remedies which act with very great powers in the human body, and
 valent efficere in eo (sc. corpore) varias et saluberrimas mutationes.
are able to effect in it various and very healthy changes.

Hoc modo etiam plurimæ causæ morborum queant
In this manner (upon this principle) even many causes of diseases can
 converti a solerte medico in præstantissima auxilia; scilicet,
be converted by the skilful physician into very excellent aids; that is to say,
 quicquid vehementer afficit corpus potest esse nunc neci nunc iterum
whatever violently affects the body can bring now death, now again
 remedio eidem (sc. corpori vel fortasse morbo).
a cure to the same.

72. Vero est (sc. officium) medici, naturâ et causâ
But it is the duty of the physician, the nature and cause
 morbi cognitâ, judicare quid mutationis requiratur ut morbus
of the disease being known, to judge what (of) change is required that the disease
 mutetur in sanitatem. Hæc medicina quidem est rationalis sive Dogmatica
be changed into health. This medicine indeed is the rational or Dogmatic.
 (sc. medicina). Est et altera, nimirum Empirica, quæ, ambagibus
There is also another, namely the Empirical, which, intricacies
 hujusmodi missis, quærit et profert sola remedia prædita
of this sort being dismissed, seeks and sets forth solitary remedies endowed with a
 certâ et definitâ vi ad delendos certos morbos.
certain and definite power to destroy certain diseases.

73. Omnis circumforaneus medicus jactat remedia hujusmodi, omnis
Every mountebank physician boasts remedies of this kind, every
 anus credit se possidere; que populus, qui fere mavult
old woman believes that she possesses them; and the public, who generally would rather
 decipi quam sapere, semper fidit talibus remediis: neque profecto,
be deceived than be wise, always believes in such remedies nor truly,
 postquam amiserit (sc. populus) sanitatem cum re, sinit facile
after they have lost their health with their money, do they permit easily

glose colere. Tantum enim abest ut semper
 illius vestigia premere conveniat, ut sæpe ne-
 cesse sit contrarium prorsus iter tenere,
 contraque ejus conatus summa ope niti.

71. Neque medici officium tam arcto limite
 cohlberi ipsa Natura docet: suggerit enim
 prodiga innumera remedia, quæ maximis viri-
 bus in corpore humano pollent; et varias et
 saluberrimas mutationes in eo efficere valent.
 Hoc modo etiam plurimæ morborum causæ a
 solerte medico in præstantissima auxilia con-
 verti queant; scilicet, quicquid corpus vehe-
 nenter afficit, eidem nunc neci (53, 62), nunc
 iterum remedio, esse potest.

72. Medici vero est, cognita naturâ et causâ
 morbi, judicare quid mutationis requiratur, ut
 morbus in sanitatem mutetur. Hæc quidem est
 medicina rationalis sive Dogmatica. Est et
 altera, Empirica nimirum, quæ, missis hujus-
 modi ambagibus, sola remedia quærit et pro-
 fert certa et definita vi prædita ad certos mor-
 bos delendos.

73. Hujusmodi remedia omnis circumfora-
 neus medicus jactat, omnis anus se credit
 possidere; populusque, qui fere decipi quam
 sapere mavult, talibus remediis semper fidit;
 neque profecto, postquam sanitatem cum re
 amiserit, facile sinit gratissimum menti erro-

gratissimum errorem eripi menti; scilicet quem
the very grateful error to be taken away from the mind; as being one which
 nolit (populus) intueri, adeo blanda est cuique dulcedo
they are unwilling to observe, so agreeable is to each person the pleasure
 sperandi pro se. Vero quam pauca remedia istiusmodi fuerint adhuc
of hoping for himself. But how few remedies of this sort have been as yet
 reperta peritissimi medici fatentur et dolent. Quod si
discovered the most skilful physicians confess and lament. But if
 fuerint quædam remedia quæ pollent in humano corpore
there should be some remedies which act in the human body
 vi nondum exploratâ aut intellectâ, id minime mirum;
with a power not yet certainly known or understood, that is not at all wonderful;
 quippe quia tot morbi existant, natura et causæ quorum prorsus
inasmuch as so many diseases exist, the nature and causes of which entirely
 lateant. Cæterum quo perfectior medica scientia fuerit, eo facilius
lie hid. But the more perfect medical science shall become, the more easy
 erit reddere rationem virium medicamentorum, et modi
it will be to give an explanation of the powers of medicines, and of the manner
 quo afficiunt corpus, que prosint in variis morbis.
in which they affect the body, and do good in various diseases.

74. Igitur remedia solent ordinari secundum manifestos
Therefore remedies are accustomed to be classed according to the manifest
 effectus quos præstant in humano corpore. Afficiunt vel solidas
effects which they produce in the human body. They affect either the solid
 vel fluidas partes. Illas (sc. solidas?) alunt, consumunt, firman-
or the fluid parts. The former they nourish, waste, strengthen,
 laxant, excitant, sopiunt. Has (sc. fluidas) vitiatas vel quantitate vel
relax, excite, lull. The latter vitiated either in quantity or
 qualitate corrigunt, atque evacuant; que id vel naturalibus viis,
quality they correct, and evacuate; and that either by the natural passages,
 vel aliis insolitis et factis arte. Nec desunt auxilia
or by others unusual and made by art. Nor are there wanting aids
 adversus concreciones formatas intra corpus, aut animalia hospitantia
against concretions formed within the body, or animals boarding and lodging
 in eodem (sc. corpore). Vero scientia effectuum medicamentorum, et
in the same. But the knowledge of the effects of medicines, and
 modi quo afficiunt corpus, vocatur Therapeia.
of the manner in which they affect the body, is called Therapeutics.

rem eripi; scilicet quem nolit intueri, adeo blanda est sperandi pro se cuique dulcedo. Quam pauca vero istiusmodi remedia adhuc reperta fuerint, peritissimi medici fatentur et dolent. Quod si remedia quædam fuerint quæ vi nondum explorata aut intellecta in corpore humano pollent, id minime mirum; quippe quia tot existant morbi quorum natura et causæ prorsus lateant. Cæterum, quo perfectior fuerit scientia medica, eo facilius erit medicamentorum virium, et modi quo corpus afficiunt, variisque in morbis prosint, rationem reddere.

74. Remedia igitur ordinari solent, secundum effectus manifestos quos in corpore humano præstant.—Afficiunt vel partes solidas vel fluidas. Illas alunt, consumunt, firman-
 ant, excitant, sopiunt. Has vel quantitate vel qualitate vitiatas, corrigunt, atque evacuant idque vel viis naturalibus, vel aliis insolitis et arte factis.—Nec desunt auxilia adversus concreciones intra corpus formatas, aut animalia in eodem hospitantia (63, 64).—Medicamentorum vero effectuum et modi quo corpus afficiunt, scientia, Therapeia vocatur.

CAP. II.
CHAP. II.

De solidâ materiâ ex quâ corpora animalium fiunt, que
Of the solid matter of which the bodies of animals are made, and
variis dotibus, tum chemicis tum mechanicis, ejûs, (sc. materiæ:)
the various properties, as well chemical as mechanical, of it:

de conjecturis circa ultimam et minutissimam fabricam ejûs:
of the conjectures about the ultimate and most minute structure of it:

de reticulatâ telâ; necnon de origine, naturâ, et usû adipis.
of the cellular tissue; also of the origin, nature, and use of fat.

75. Humanum corpus constat ex solidis et fluidis partibus, mutuâ
The human body consists of solid and fluid parts, by the mutual
actione quarum, (sc. partium,) functiones vivi hominis (quatenus sunt
action of which, the functions of the living man (so far as they are
corporeæ) peraguntur. Utræque (sc. partes) mutantur et
corporeal) are performed. Both are (being) changed, and
renovantur assidue; verò solidæ (partes) lentiùs: igitur
are renewed incessantly; but the solid (parts) more slowly: therefore
incipiendum est (sup. nobis) ab his; quippe quæ dent
we must begin from (with) them; as being things which give
formam et firmitatem universo corpori.
form and firmness to the whole body.

76. Vocamus solidam materiam, ex quâ corpora animalium
We call the solid material, of which the bodies of animals
constant, causâ brevitatis, animale solidum. Autem hoc (sol. animale)
consist, for the sake of brevity, the animal solid. But this
habet varias dotes, chemicas, mechanicas, vitales, nulla
has various properties, chemical, mechanical, vital, none
quarum (dotum) non meretur attentionem medici.
of which does not deserve (all of which claim) the attention of the physician.

77. Exquisita chemia hujus ævi detexit diversas substantias
The exquisite chemistry of this age has detected different substances
sive principia, ut dicuntur, in variis solidis partibus
or principles, as they are called, in the various solid parts
humani corporis; que docuit nos exhibere eas substantias
of the human body; and has taught us to exhibit these substances
seorsim. Imprimis ostendit plurimam terram, præcipue in
apart. In the first place it shews a great deal (of) earth, especially in
ossibus; nimirum calcem, non quidem puram, sed conjunctam
the bones; namely lime, not indeed pure, but combined

CAP. II.—De solida materia ex qua corpora animalium fiunt, variisque ejus dotibus, tum chemicis tum mechanicis: de conjecturis circa ejus ultimam et minutissimam fabricam; de tela reticulata; necnon de adipis origine, natura, et usu.

75. CORPUS humanum constat ex partibus solidis et fluidis; quarum mutua actione functiones vivi hominis (quatenus corporeæ sunt) peraguntur. Utræque assidue mutantur et renovantur; solidæ vero lentiùs. Ab his igitur incipiendum est; quippe que universo corpori formam et firmitatem dent.

76. Solidam materiam ex qua corpora animalium constant, solidum animale, brevitatis causa, vocamus. Hoc autem varias habet dotes, chemicas, mechanicas, vitales; quarum nulla non medici attentionem meretur.

77. Exquisita hujus ævi Chemia diversas substantias, sive principia ut dicuntur, in variis solidis partibus humani corporis detexit; easque substantias seorsim exhibere docuit. Ostendit imprimis, in ossibus præcipue, plurimam terram; calcem nimirum, non quidem puram, sed cum acidis quibusdam, phosphorico præsertim,

cum quibusdam acidis, præsertim phosphorico. Hic phosphas calcis, with certain acids, especially the phosphoric. This phosphate of lime, cum pauxillo carbonatis calcis dat firmitatem ossibus; et cum with a little (of) carbonate of lime gives firmness to the bones; and with cartilagine et multâ gelatinâ et crasso oleo efficit fere tota cartilage and much gelatine and thick oil forms almost the entire ossa. Quoque plurima gelatina et pro parte ratâ parum bones. Also very much gelatine and in reference to the part considered little terræ inest cellulosa telæ, et cuti, que aliis (of) earth is in (exists in) the cellular tissue, and skin, and the other membranis quæ fiunt ex eâ telâ, et demum musculis. membranes which are made (formed) of that tissue, and lastly the muscles. Vero in his (sc. musculis) alia animalis substantia reperitur; scilicet But in them another animal substance is found; that is to say plurima fibrina. Albumen quoque detectum est plane neque parcè very much fibrine. Albumen also has been detected evidently nor sparingly in quibusdam solidis partibus humani corporis; maxime in cartilaginibus in some solid parts of the human body; especially in the cartilages et tendinibus et ligamentis. Præter hæc, multum crassum oleum and tendons and ligaments. Besides these, much thick oil reperitur in fere omnibus animalibus solidis, et quidam sales, tam is found in almost all the animal solids, and some salts, as well acidi quam alcalini; et interdum, ut videtur, quædam aliæ substantiæ acid as alkaline; and sometimes, as it seems, some other substances minoris momenti, sed multo parcius. Sed nondum satis of less moment, but much more sparingly. But it has not yet been sufficiently constitit de his; quæ scilicet neque semper reperiuntur, established concerning these; which truly neither always are found, nec unquam adsunt tantâ copiâ ut explorentur facile. nor ever are present in so great plenty that they can be examined easily.

78. Solidæ partes humani corporis ulterius exploratæ chemicâ The solid parts of the human body further examined by chemical arte, resolvuntur facile in pauca elementa vel putredine art, are resolved easily into a few elements either by the putrefaction quam subeunt sponte, modico calore, cum humore et which they undergo spontaneously, at a moderate heat, with moisture and aere admisso; vel magno calore qualis air being admitted; or at a great heat (at a high temperature) such as destruat priores compositiones elementorum, efficiat novas (sc. com- destroys the former combinations of the elements, effects new ones positiones) ipsorum; duriores (resolvuntur) in Calcem et Phosphorum; of them; the harder (are resolved) into Lime and Phosphorus;

conjunctam. Hic Phosphas Calcis, cum pauxillo Carbonatis Calcis, firmitatem dat ossibus; et cum Cartilagine, et multa Gelatina, et oleo crasso, ossa fere tota efficit. Plurima quoque Gelatina, et pro rata parte parum terræ, inest telæ cellulosa, et cuti, aliisque membranis quæ ex ea tela fiunt, et demum musculis. In his vero alia reperitur substantia animalis; plurima scilicet Fibrina. Albumen quoque in quibusdam partibus solidis corporis humani plane neque parcè detectum est; maxime in cartilaginibus et tendinibus, et ligamentis. Præter hæc multum oleum crassum in omnibus fere solidis animalibus re-

peritur; et sales quidam tam acidi quam alcalini; et interdum, ut videtur, sed multo parcius, aliæ quædam minoris momenti substantiæ. Sed de his nondum satis constitit; quæ scilicet neque semper reperiuntur, nec unquam tanta copia adsunt ut facile explorentur.

78. Ulterius arte chemicâ exploratæ partes solidæ humani corporis, vel putredine, quam sponte subeunt modico calore, cum humore, et admisso aere; vel magno calore, qualis priores elementorum compositiones destruat, novas ipsorum efficiat, facile in paucis elementa resolvuntur; duriores in Calcem et Phosphorum;

vero mollores in Carbonem, Nitrogenium (vel Azotium), Hydrogenium, et
but the softer into Carbon, Nitrogen (or Azote), Hydrogen, and
 Oxygenium: quæ igitur creduntur esse simplicissima elementa
Oxygen: which therefore are believed to be the most simple elements
 animalis solidi; siquid dicatur recte simplex in severiore
of the animal solid; if any thing can be called rightly simple in the stricter
 Chemiâ. Vero hæc elementa separata et conjuncta aliter atque
Chemistry. But these elements separated and combined otherwise and
 aliter vel igne vel putredine, interim
otherwise (in divers ways) either by fire or by putrefaction, in the mean time
 efficiunt nova substantias, quales sunt Ammonia, Carbonicum Acidum,
produce new substances, such are Ammonia, Carbonic Acid,
 empyreumaticum oleum, et multi foetidi vapores, quæ nequeunt
empyreumatic oil, and many foetid vapours, which cannot
 detegi in recente et integro animali solido, autem observantur
be detected in the recent and entire animal solid, but are observed
 facile et fere semper dum hoc (sc. solidum) resolvitur in sua
easily and almost always whilst this is resolved into its
 elementa.
elements.

79. Mechanicæ dotes, quibus animale solidum aptatur ad
The mechanical properties, by which the animal solid is fitted for
 usus vitæ, sunt tres; scilicet, satis magna adhesio,
the uses of life, are three; namely, sufficiently strong adhesion,
 quædam flexilis mollities, et insignis vis resillendi.
a certain flexible softness, and a remarkable power of rebounding (elasticity).
 Pleraque numerata vitæ consistunt in variis motibus; validissimi
Most (of the) functions of life consist in various motions; very powerful
 motus requiruntur ad multa eorum. Igitur est opus tantâ
motions are required for many of them. Therefore there is need of so much
 adhesion partium ut hi (sc. motus) perficiantur sine
adhesion (cohesion) of the parts that they can be performed without
 periculo lacerationis: oportet quoque, ob eandem causam, (ut) solidæ
danger of laceration: it behoves also, for the same reason, that the solid
 partes sinant se flecti, aliæ magis aliæ minus: denique est
parts permit themselves to be bent, some more some less: finally it is
 necesse ut partes ita flexæ, vel dimotæ loco recuperent
necessary that the parts so bent, or removed from their place should recover
 suâ sponte figuram et pristinum situm quam primum
of their own accord their figure and former situation as soon as
 dimovens vis fuerit sublata.
the removing force shall be taken away:

molliores vero in Carbonem, Nitrogenium (vel Azotium), Hydrogenium, et Oxygenium: quæ igitur creduntur esse solidi animalis simplicissima elementa; siquid in severiore Chemia recte simplex dicatur. Hæc vero elementa, vel igne, vel putredine, aliter atque aliter separata et conjuncta, novas interim efficiunt substantias, quales sunt Ammonia, Acidum carbonicum, oleum empyreumaticum, et multi vapores foetidi, quæ in recente et integro solido animali detegi nequeunt, facile autem et fere semper observantur dum hoc in sua elementa resolvitur.

79. Dotes mechanicæ, quibus solidum animale ad vitæ usum aptatur, sunt tres; adhesio scilicet satis magna, mollities quædam flexilis, et insignis vis resillendi.—Munera vitæ in variis motibus pleraque consistunt: ad multa eorum validissimi motus requiruntur. Tanta igitur adhesionem partium opus est, ut hi sine lacerationis periculo perficiantur: oportet quoque, ob eandem causam, partes solidæ, aliæ magis aliæ minus, se flecti sinant; denique, necesse est, ut partes ita flexæ, vel loco dimotæ, figuram et situm pristinum sua sponte recuperent, quamprimum vis dimovens sublata fuerit.

80. Hæ dotes variant multum, non modo variis partibus, *These properties differ much, not only in the various parts,* sed et iisdem partibus in variis hominibus, et sæpe in *but also in the same parts in different men, and often in* eodem homine diversis temporibus. Varietates, hujusmodi, quamvis *the same man at different times. Differences, of this kind, although* insignes satis, sæpe afficiunt valetudinem parum. Vero nonnunquam *remarkable enough, often affect the health little. But sometimes* transeuntes limites sanitatis, faciunt manifestos et sane haud leves *passing the bounds of health, cause manifest and truly no slight* morbos. *diseases.*

81. Omnis solida pars, quod (pertinet) ad mechanicas dotes, potest *Every solid part, as (relates) to its mechanical properties, can* variari aut vitari duplici modo; scilicet, aut nimiam *be changed or vitiated in a twofold manner; that is to say, either by too much* aut nimis parvam adhesionem, aut mollitiem aut virescentiam. Adhesionem *or too little adhesion, or softness or elasticity. The adhesion* seu firmitatem cujusvis solidæ partis auctam, vis resiliendi ejus *or firmness of any solid part being increased, the elasticity of it* plerumque augetur; autem mollities necessario minuitur: *for the most part is increased; but its softness necessarily is diminished:* vero adhesionem imminutam, mollities fit major, et *but the adhesion being diminished, the softness becomes greater, and* vicissim vis resiliendi minor. *in turn the elasticity less.*

82. Causæ horum effectuum certe sunt multiplices: tamen possunt *The causes of these effects truly are manifold: nevertheless they can* reduci ad certa capita. Aut chemica compositio ipsa materiæ *be reduced to certain heads. Either the chemical constitution itself of the matter* vitatur, aut compositione omnino salva particulae disponuntur *is vitiated, or the composition being entirely safe (perfect,) the particles are disposed* ita ut attrahant semet invicem plus ve minus *so that they attract (so as to attract) themselves in turn (mutually) more or less* fortiter. Quod attinet ejus chemicam compositionem, fortasse omnia *strongly. What (as) regards its chemical constitution, perhaps all* elementa possunt inesse, variam quantitatem, animali solido, et quodque *the elements may exist, in various quantity, in the animal solid, and each* (sc. elementum) efficere suum peculiare vitium. Sed de multis *produce its own peculiar disorder. But concerning many* horum novimus nihil certi: vero constat satis, humidam *of these we know nothing certain: but it is agreed on sufficiently, that the moist*

80. Variant multum hæ dotes, non modo variis partibus, sed et iisdem partibus in variis hominibus, et sæpe in eodem homine diversis temporibus. Hujusmodi varietates, quamvis insignes satis, sæpe afficiunt valetudinem parum. Vero nonnunquam vero, sanitatis limites transeuntes, manifestos et sane haud leves morbos faciunt.

81. Duplice modo variari aut vitari potest, quod ad dotes mechanicas, omnis pars solida; scilicet, aut nimiam aut nimis parvam adhesionem, aut mollitiem, aut virescentiam. Aucta adhesionem seu firmitatem partis cujusvis solidæ, au-

getur plerumque ejus resiliendi vis; mollities autem necessario minuitur. Imminuta vero adhesionem, mollities major fit et vicissim vis resiliendi minor.

82. Causæ horum effectuum certe multiplices sunt: tamen ad certa capita reduci possunt. Aut ipsa materiæ compositio chemica vitatur, aut, salva omnino compositione, particulae ita disponuntur, ut plus minusve fortiter semet invicem attrahant. Quod compositionem ejus chemicam attinet, omnia fortasse elementa (77, 78), varia quantitate, solido animali inesse possunt, et suum quodque peculiare vitium effi-

materiam, quæ est fere aqua, et siccam (materiam) quæ constat ex
matter, which is mostly water, and that the dry, which consists of
 diversis elementis, variare multum: quo plus humidæ eo minus adhæsiōnis
different elements, differ much: the more watery the less of adhesion
 aut vis resillendi, vero plus mollitiæ; et omnino contra
or elasticity, but the more softness; and altogether the contrary (directly
 si fuerit minium siccæ materiæ in compositione.
the reverse), if there should be too much of dry matter in the composition.

83. Variæ sunt remotæ causæ alterutrius materiæ, vel abundantis
Various are the remote causes of the one or other material, either abounding
 vel deficientis. Imprimis, congenita constitutio ipsa corporis
or being deficient. In the first place, the congenital constitution itself of the body
 conduces multum huc. Quidam homines præ cæteris, et viri præ
conduces much hither (to this). Some men before others, and men before
 fœminis in universum, habent duriolem et sicciorem compaginem corporis,
women in general, have a harder and dryer frame of body,
 vix, ac ne quidem vix, mutandam penitus ullo
scarcely, and not even scarcely, (scarcely, if at all,) be changed entirely by any
 genere vitæ.
kind of life.

84. Vero ætas facit adhuc majus discrimen; enim, a prima (sc. ætate)
But age causes a still greater difference; for, from the first
 usque ad ultimam (ætatem), corpus evadit quotidie siccius et durius:
as far as to the last, the body becomes daily drier and harder:
 nempe, à fluido et crudo fœtû, ad rigidum et exsuccum senem,
namely, from the fluid and crude fœtus, to the stiff and juiceless old man,
 cui vita fere deficit propter hanc ipsam causam.
to whom life commonly fails on account of this very cause.

85. Porro victus quo homines utuntur, prout fuerit plus ve
Moreover the food which men use, as it shall be more or
 minus aquosa (aquosus?) efficit similem conditionem soldarum partium.
less watery, produces a similar condition of the solid parts.

Hoc, dudum observatum in aliis animalibus, videtur accidere
This, long since observed in other animals, seems to happen (to occur),
 saltem aliquatenus, in homine quoque. Neque deest gravissima
at least to a certain extent, in man also. Nor is there wanting a very weighty
 ratio cur credamus non modo conditionem et
(convincing) reason why we should believe not only that the condition and
 vires corporis, sed et indolem animi pendere
the strength of the body, but also that the disposition of the mind depends
 quodammodo à genere victûs.
in some degree upon the kind of food.

ere. Sed de multis horum nihil certe novi-
 nus: satis vero constat, materiam humidam,
 quæ fere aqua est, et siccam, quæ ex diversis
 elementis constat, multum variare: quo plus
 humidæ, eo minus adhæsiōnis aut vis resilli-
 endi, plus vero mollitiæ; et contra omnino, si
 minium siccæ materiæ in compositione fuerit.

83. Variæ sunt causæ remotæ (37 et seq.)
 alterutrius materiæ vel abundantis vel defi-
 cientis. Ipsa imprimis constitutio corporis con-
 genita multum huc confert. Quidam, præ
 cæteris, homines, et viri præ fœminis in uni-
 versum, duriolem et sicciorem corporis compa-
 ginem habent, vix, ac ne vix quidem, ullo
 vitæ genere penitus mutandam.

84. Ætas vero majus adhuc discrimen facit;
 a prima enim ad ultimam usque siccius et
 durius evadit quotidie corpus: a fluido, nempe,
 et crudo fœtu, ad rigidum et exsuccum senem,
 cui vita, propter hanc ipsam causam, fere
 deficit.

85. Victus porro, quo homines utuntur, prout
 plus minusve aquosa (-sus?) fuerit, similem so-
 lidarum partium conditionem efficit. Hoc, in
 aliis animalibus dudum observatum, in homine
 quoque, aliquatenus saltem, accidere videtur.
 Neque ratio gravissima deest cur credamus,
 non corporis modo conditionem et vires, sed et
 animi indolem, a victus genere quodammodo
 pendere.

86. Multum quoque pendet à bonâ aut pravâ concoctione ejusdem cibi et ab appositione nutrimenti parati ex eo (sc. cibo).
Much also depends upon the good or bad digestion of the same food and upon the apposition of the nutriment prepared from it.

87. Denique, status aëris, scilicet, quod ad humorem vel siccitatem, afficit corpus haud parum: hinc monticolæ, vel (il) qui habitant siccas regiones, multum diversi ab incolis humidarum et paludosarum (sc. regionum).
Indeed, the state of the air, that is to say, as (relates) to moisture or dryness, affects the body not a little: hence mountain inhabitants, or they who inhabit dry regions, are very different from the inhabitants of wet and marshy ones.

88. Postremo, genus vitæ confert nonnihil ad eundem effectum exercitatio corporis exprimit atque exhalat quod humoris fuisset nimium. Ignavia habet prorsus contrarium effectum, que facit humidiores partes abundare.
Lastly, the kind of life conduces something to the same effect: exercise of the body presses out and exhales what (of) moisture had been too much (in excess). Idleness has a directly contrary effect, and causes the moister parts to abound.

89. Verum, chemicâ compositione solidarum partium omnino salvâ, conditio harum (sc. partium) potest affici multum ab aliis causis.
But, the chemical constitution of the solid parts being entirely perfect, the condition of them may be affected much by other causes.

Nimirum, densatio particularum, sive à mechanicis causis sive à calore et frigore, efficiet variam firmitatem et vim resiliendi cujusvis partis.
For example, thickening of the particles, whether from mechanical causes or from heat and cold, will cause a different firmness and elasticity of any part.

90. Quantum mechanica compressio valeat hic, experimenta Clarissimi Clifton Wintringham luculenter docent. Distentio quoque animalis solidi afficit haud parum dotes ejus (sc. solidi) jam memoratas. Quo plus tenditur eo durius, et firmiter, et magis resiliens evadit, que eo difficiliter partitur ulteriorem distentionem, donec tandem impatiens distendi amplius, novâ vi
How much mechanical compression can avail here, the experiments of the very celebrated Clifton abundantly teach. Distention also of the animal solid affects not a little the properties of it already mentioned. The more it is stretched, the harder, and firmer, and more elastic it becomes, and the more difficultly it endures further distention, until at length not bearing to be distended further, a new force

86. Multum quoque pendet a bona vel pravâ concoctione cibi ejusdem nutrimenti ex eo parati.

87. Denique, status aëris, scilicet, quod ad humorem vel siccitatem, corpus haud parum afficit. Hinc monticolæ vel qui siccis regionibus habitant, ab incolis humidarum et paludosarum multum diversi.

88. Postremo vitæ genus ad eundem effectum nonnihil confert. Exercitatio corporis, quod nimium humoris fuisset, exprimit atque exhalat. Ignavia contrarium prorsus effectum habet, partesque humidiores abundare facit.

89. Verum, salva omnino compositione chemicâ solidarum partium, harum conditio ab aliis causis multum affici potest. Densatio nimirum particularum, sive a causis mechanicis, sive a calore et frigore, variam efficit partis cujuslibet firmitatem et vim resiliendi.

90. Quantum hic valeat compressio mechanica clar. Clifton Wintringham experimentis luculenter docent. — Distentio quoque solidi animalis dotes ejus jam memoratas haud parum afficit. Quo plus tenditur, eo durius, et firmiter, et magis resiliens evadit, eoque difficiliter ulteriolem patitur distentionem, donec tandem, amplius distendi impatiens, novâ

admotâ, distrahitur et dirumpitur, nimirum, adhæsione
being applied, it is drawn asunder and is broken, doubtless, the cohesion
 particularum superatâ quâ hæc (sc. adhæsio) fuerit debillior. Hinc
of the particles being overcome where this was weaker. Hence
 ratio, non plene quidem, nam multum pendet à vitali principio que
the reason, not fully indeed, for much depends upon the vital principle and
 primâ fabricâ corporis, sed aliquatenus saltem, est deducenda
the original structure of the body, but, to some extent at least, is to be deduced
 multarum rerum quæ sunt summi momenti; incrementi corporis,
of many things which are of the highest moment; of the growth of the body,
 status, imminutionis, indies crescentis firmitatis, et inevitabilis
of its state, of its diminution, of its daily increasing firmness, and of the inevitable
 mortis senilis (sc. corporis).
death of the old body.

91. Varia densitas solidarum partium derivatur fortasse ab Naturâ
The various density of the solid parts is derived perhaps from Nature
 ipsâ: sed magis constat de viribus exercitationis, aut ignaviæ,
herself; but it is more agreed concerning the powers of exercise, or of idleness,
 in mutando statu earundem (sc. partium), generales effectus quarum (sc.
in changing the state of the same, the general effects of which
 virium, exercitationis, &c.), igitur, tam boni quam mali, in solidis
therefore, as well good as bad, on the solid
 partibus, intelligentur * facile.
parts, will be understood easily.

92. Porro, diurnâ quiete, quælibet pars Naturâ mobilis,
For, by long-continued rest, any part by Nature (naturally) mobile,
 veluti junctura artus, paulatim rigescit,
(capable of motion,) as the joining of a limb (joints), gradually grows stiff,
 recuperatura tarde, fortasse nunquam penitus, pristinam mobilitatem, et,
to recover slowly, perhaps never entirely, its former mobility, and,
 contra, valido et crebro usu, modo hic (sc. usus) non
on the other hand, by strong and frequent use, provided this shall not
 fuerit nimius, fere omnes partes corporis sæpe adipiscuntur miram
be too great, almost all parts of the body often acquire a wonderful
 mobilitatem. Neque profecto melius aut certius remedium datur
mobility. Nor truly is a better or more certain remedy given
 ad superandam illam rigiditatem artuum quæ solet induci
to overcome that stiffness of the limbs which is accustomed to be induced
 longâ quiete, quam frequens exercitatio, quæ, primo difficillima,
by long rest (inactivity), than frequent exercise, which, at first very difficult,

admotâ vi, distrahitur et dirumpitur, superatâ
 nimirum particularum adhæsione, qua hæc
 debillior fuerit. Hinc ratio, non plene quidem
 (nam multum pendet a principio vitali, pri-
 mæque corporis fabrica) sed aliquatenus saltem
 deducenda est multarum rerum quæ summi
 momenti sunt; corporis incrementi, status,
 imminutionis, firmitatis indies crescentis, et
 mortis senilis inevitabilis.

91. Varia fortasse solidarum partium densitas
 ab ipsa Natura derivatur. Sed magis constat
 de viribus exercitationis, aut ignaviæ, in statu
 earundem mutando. Quarum igitur effectus

generales, tam boni quam mali, in partibus so-
 lidis, facile intelligentur.

92. Porro, diurna quiete pars quælibet natu-
 ra mobilis, veluti junctura artus, paulatim
 rigescit, pristinam mobilitatem tarde, fortasse
 nunquam penitus, recuperatura: et contra, val-
 ido et crebro usu, modo hic non nimius
 fuerit, omnes fere corporis partes miram sæpe
 adipiscuntur mobilitatem. Neque profecto
 melius datur aut certius remedium ad super-
 andam illam rigiditatem artuum quæ longa
 quiete induci solet, quam frequens exercitatio,
 quæ primo difficillima, et diu exigua, fere in-
 dies facilius, liberius, et perfectior evadit.

et diu exigua, fere indies evadit facilior, liberior, et
and for a long time small (limited), generally daily becomes easier, freer, and
 perfectior.
more perfect.

93. Calor laxat atque expandit omnia corpora; vero frigus densat et
Heat relaxes and expands all bodies; but cold thickens and
 durat (ea) (sc. corpora): homines solent experiri probe utrumque
hardens (them:) men are accustomed to experience well both
 effectum; quamvis corpus fere semper conservet suum calorem,
effect; although the body almost always can preserve its own temperature,
 nequit fieri quin ejus superficies saltem afficiatur ab externo
it cannot happen but that its surface at least be affected by the external
 ambiente aëre: neque est vis exigua, quâ calor polleat hoc
ambient air: nor is the power small, by which heat can prevail in this
 modo in universo corpore. *Quam longe aliter*
way in the whole body (throughout the entire body). How far differently
 habet se, qui, fervido Austro spirante, factus hebes et languidus,
he has himself, who, the fervid South wind blowing, become sluggish and languid,
 trahit sua membra ægre, ac ille, qui, sub frigido Aquilone,
drags his limbs with difficulty, and he, who, under the cold North wind,
 exercet se glaciali cursu, firmus, mobilis, expeditus (sup. secundum)
exercises himself on the icy course, firm, mobile, active (as to)
 universum corpus.
his whole body.

94. Variæ causæ quæ singulæ solent afficere,
The various causes which each (individually) are accustomed to affect,
 tot modis, dotes animalis solidi, conjunctæ præstant adhuc
in so many ways, the properties of the animal solid, combined produce still
 majores effectus: experimenta instituta (a) Bryan Robinson docent effectus
greater effects: the experiments instituted (by) Bryan Robinson teach the effects
 calidi balnei docent; quotidiana experientia docet.
of the warm bath teach; daily experience teaches.

95. Variæ partes corporis, aptæ variis muniis, fiunt ex hac
The various parts of the body, fitted for various duties, are made of this
 materiâ. Nondum constat certa fide
matter. It is not yet evident on certain credit (it is not yet certainly determined)
 quænam sit ultima et minutissima fabrica animalis solidi: sive
what is the ultimate and most minute structure of the animal solid: whether
 constat ex fibris, scilicet, longis filis, parum latis,
it consists of fibres, that is to say, long threads, not broad (of no breadth),
 varie textis inter se, ut Boerhaavius docet; sive ex serpentinis
variously woven among themselves, as Boerhaave teaches; or of serpentine

93. Calor corpora omnia laxat atque expandit: frigus vero densat et durat. Utrumque effectum homines probe experiri solent. Quamvis corpus suum fere semper calorem conservet, fieri nequit quin ejus superficies saltem ab aere ambiente externo afficiatur. Neque exigua vis est, qua calor hoc modo in universo corpore polleat. Quam longe aliter se habet, qui, fervido Austro spirante, hebes et languidus factus, membra sua ægre trahit, ac ille, qui sub frigido Aquilone, cursu glaciali se exercet, universum corpus firmus, mobilis, expeditus.

94. Variæ causæ, quæ singulæ tot modis dotes solidi animalis afficere solent, conjunctæ majores adhuc effectus præstant; docent experimenta Bryan Robinson instituta; docent effectus balnei calidi; docet quotidiana experientia.

95. Ex hac materia variæ corporis partes, variis muniis aptæ, fiunt. Nondum certa fide constat, quænam sit solidi animalis ultima et minutissima fabrica: Sive ex fibris, filis scilicet longis, parum latis, varie inter se textis, constat, ut docet Boerhaavius; sive ex fibris serpentinis, mirum in modum convolutis, ut quædam

fibris convolutis in mirum modum, ut quædam observationes nuper
fibræ convoluted in a wonderful manner, as certain observations lately
 factæ suadent; sive *cellulosa tela* fiat ex fibris que laminis,
made persuade; or whether the cellular tissue is made of fibres and laminæ,
 et ex hac (sc. tela) maxima pars omnium partium corporis (fit), ut
and of this the greatest portion of all the parts of the body, as
 celeberrimus Hallerus conatus est ostendere.
the very celebrated Haller has endeavoured to shew.

96. De fibris que dotibus earum erit locus
Of the fibres, and the properties of them, there will be an opportunity
 dicendi alibi. *Cellulosa tela* observatur ubique in
of speaking elsewhere. Cellular tissue is observed everywhere in (throughout)
 corpore: circumdat et nectit fibras ipsas, quæ apparent
the body: it surrounds and connects the fibres themselves, which appear
 [satis manifestè in multis partibus, et leviter conjungit varias partes,
sufficiently manifestly in many parts, and loosely unites the various parts,
 quæ debent habere aliquem motum in vicinas (sc. partes). Eadem
which ought to have some motion upon the neighbouring ones. The same
 (sc. tela, &c.) probe densata facit firmissimas membranas, et (eas)
duly thickened makes (forms) the firmest membranes, and (those)
 quæ videntur tenuissimæ: quarum (sc. membranarum) (sup. eæ) quæ
which seem the thinnest: of which (those) which
 apparent simplicissimæ, exploratæ accuratius, ostendunt hanc structuram.
appear the most simple, examined more accurately, show this structure.

97. *Cellulosa tela* sæpe crescit in mirum modum, que partes
The cellular tissue often grows in a wonderful manner, and the parts
 factæ ex ea, membranæ, vasa, &c., imprimis lentâ distentione;
formed of it, membranes, vessels, &c., especially by gradual distention;
 autem subita distentio vel rumpit eam vel facit tenuiorem. Nonnunquam
but sudden distention either breaks it or renders it thinner. Sometimes
 quoque crescit inter vicinas partes, que jungit eas quas Natura
also it grows between contiguous parts, and joins those which Nature
 fecerat liberas: concreciones præter naturam hujusmodi
had made free: growths contrary to nature (unnatural growths) of this sort
 sæpe, observantur, post inflammationem pulmonis vel viscerum abdominis.
often are observed, after inflammation of the lung or of the viscera of the abdomen.

Et istæ novæ membranæ sunt vere *cellulosæ*.
And those new membranes are truly cellular.

98. Concrecit etiam suâ sponte, si fuerit secta, vel
It grows together etiam of its own accord, if it has been cut, or
 separata alio modo. Quod, si ingente inflammatione, et
separated (divided) in any other way. But, if by great inflammation, and

observations nuper factæ suadent; sive ex
 fibris laminisque *tela cellulosa* fiat, et ex hac
 maxima pars omnium partium corporis, ut
 celeb. Hallerus ostendere conatus est.

96. De fibris earumque dotibus, alibi locus
 erit dicendi (111 et seq.) *Tela cellulosa* ubique
 in corpore observatur; fibras ipsas, quæ in
 multis partibus satis manifeste apparent, circumdat
 et nectit, et varias partes, quæ motum
 aliquem in vicinas habere debent, leviter conjungit.
 Eadem probe densata, firmissimas, et
 quæ videntur tenuissimæ, membranas facit:
 quarum quæ simplicissimæ apparent, accuratius
 exploratæ, hanc structuram ostendunt.

97. Crescit sæpe mirum in modum *tela cellulosa*,
 partesque ex ea factæ, membranæ, vasa, &c.
 imprimis lenta distentione; subita autem
 distentio eam vel rumpit, vel tenuiorem facit.
 Crescit quoque nonnunquam inter partes
 vicinas, easque jungit quas Natura liberas
 fecerat. Hujusmodi concreciones præter naturam
 sæpe observantur, post inflammationem
 pulmonis vel viscerum abdominis:—Et novæ
 istæ membranæ vere *cellulosæ* sunt.

98. Concrecit etiam sua sponte, si secta vel
 alio modo separata fuerit. Quod si ingente
 inflammatione, et suppuratione facta, magna

factâ suppuratione, magna pars cellulosa telæ fuerit destructa, established suppuration, a great portion of the cellular tissue has been destroyed, tunc non renovatur, et fœda cicatrix relinquitur. then it is not renewed, and an unsightly cicatrix is left behind.

99. Quin et pars, ut fertur, vel ejûsdem, vel alieni But also (moreover) a part, as it is said, either of the same, or of a different corporis, potest interdum jungi alii concretionem hujûsmodi. body, can sometimes be joined to another by a growing together of this sort.

Hoc, si ullo fundamento, ars Taliacotii nitebatur, et alia Upon this, if upon any foundation, the art of Taliacotius depended, and another nupera (ars) multum jactata transponendi dentes. late one, much boasted (highly extolled) of transplanting teeth.

100. Cellulosa tela est reticulata aliis partibus, aliis referta The cellular tissue is reticulated in some parts, in others filled adipe. Scilicet, ubicunque magna moles, aut compressio with fat. That is to say, wheresoever great bulk, or compression

fuisse (pro attulissent ponitur et duplicem dativum regit) periculo aut would have brought danger or

incommodo veluti in capite, pulmone, oculis, palpebris, pene, inconvenience as in the head, lung, eyes, palpebræ, (eyelids), penis,

scroto, &c.: ibi colligit nullum adipem, sed est laxa et pure scrotum, &c.: there it collects no fat, but is loose and purely

reticulata. At, inter musculos corporis et artuum, sub reticulated. But, between the muscles of the body and of the limbs, under

cute, et in abdomine, imprimis in omento, et circa the skin, and in the abdomen, especially in the omentum, and about

renes, plurimus adeps secernitur et colligitur. the kidneys, very much fat is secreted and is collected.

101. Adeps est purum animale oleum, parum diversus ab crassis Fat is pure animal oil, little differing from the expressed

et mitibus oleis herbarum, fluidus in vitâ, sed crassior aut and mild oils of vegetables, fluid during life, but thicker or

tenuior variis partibus. Secernitur a sanguine, resorbetur facile, thinner in various parts. It is secreted from the blood, is reabsorbed easily,

et sæpe subito, in ipsum (scil. sanguinem), quamvis rarissime and often suddenly, into it, although very seldom

sincerum oleum vel adeps conspiciatur in sanguine. pure oil or fat can be seen in the blood.

102. Est verisimile oleum per digestionem, converti, partim in It is probable that oil during digestion, is converted, partly in

ventriculo et intestinis, partim in pulmone, in fibrinam, gelatinam, the stomach and intestines, partly in the lungs, into fibrine, gelatin,

pars telæ cellulosa destructa fuerit, tunc non renovatur, et fœda cicatrix relinquitur.

99. Quin et pars, vel ejusdem, vel, ut fertur, alieni corporis, alii interdum jungi potest hujusmodi concretionem. Hoc, si ullo, fundamento, nitebatur ars Taliacotii; et alia nupera multum jactata, dentes transponendi.

100. Tela cellulosa est aliis partibus reticulata, aliis adipe referta. Scilicet, ubicunque magna moles, aut compressio, periculo aut incommodo fuisset, veluti in capite, pulmone, oculis, palpebris, pene, scroto, ibi nullum adipem colligit, sed laxa et pure reticulata est. At, inter mus-

culos corporis et artuum, sub cute, et in abdomine, imprimis in omento et circa renes, plurimus adeps secernitur, et colligitur.

101. Adeps purum animale est, ab oleis herbarum crassis et mitibus parum diversus; in vita fluidus: sed variis partibus crassior aut tenuior. A sanguine secernitur, in ipsum facile, et sæpe subito, resorbetur, quamvis rarissime sincerum oleum vel adeps in sanguine conspiciatur.

102. Verisimile est oleum per digestionem, partim in ventriculo et intestinis, partim in pulmone, in fibrinam, gelatinam, et albumen con-

et albumen, et hæc, per secretionem, revertere iterum in oleum.
and albumen, and that these, during secretion, return again into oil.

Profecto nulla secernentia organa adipis ostenduntur: tamen oportet
Truly no secreting organs of fat are shewn: nevertheless it behoves
 sint (scilicet organa) istiusmodi, et quoque specialis fabrica
there be (there must be) (organs) of this kind, and also a peculiar mechanism
cellulosæ telæ earum partium, quæ debent habere adipem, ut
of the cellular tissue of those parts, which ought to have fat, that
 contineant oleum jam secretum, neque sinant transire ad
they may contain the oil already secreted, nor permit it to pass through to
 alias (partes.) Nam nunquam aperit viam sibi in partes purè
the others. For it never opens a passage for itself into parts purely
 reticulatas, quamvis via per cellulosam telam sit facilis aëri
reticulated, although the passage through the cellular tissue is easy to air
 aut aquæ per totum corpus a capite ad calcem.
or water throughout the entire body from the head to the heel.

103. In tenero fœtu nihil adipis reperitur, in maturo (fœtu)
In the tender fœtus nothing of fat is found, in the mature one
 parum: vero infantes, modo sint benè aliti, fere solent
a little: but infants, provided they be well fed, generally are accustomed
 pinguescere, donec incipient ambulare et exercere semet propriis
to grow fat, until they begin to walk and to exercise themselves by their own
 viribus; tum fiunt graciles, et manent sic usque ad virilem
strength: then they become slender, and continue so quite (to) virile
 ætatem, quâ (ætate) solent uti minus crebrâ et
age (manhood), in which they are accustomed to use less frequent and
 validâ exercitatione. Tum fiunt quadrati, et sæpe obesissimi:
strong exercise. Then they become square, and often very fat:
 maturâ senectute, paulatim marcescunt denuo. Vero puellæ
in mature old age, they gradually grow lean again. But girls
 quodammodo pinguescunt circa puberem ætatem, unde
somehow grow fat about ripe age (the age of puberty,) whence
 nitida teres forma adeo amabilis, et apta premi: et, fere
the neat round figure so lovely, and fit to be pressed: and, almost
 omni ætate, femina pinguescunt plus quam viri. Viri quoque, laxi
at every age, women grow fat more than men. Men also, lax
 et flacidi (secundum) habitum corporis, fiunt obesiores firmioribus
and flaccid (as to) their habit of body, become fatter than those firmer
 (sec. habit.)
(as to their habit, &c.)

104. Adeps colligitur usu multi oleosi nutrientis cibi, præsertim
Fat is collected by the use of much oily nourishing food, especially

verti; et hæc iterum per secretionem in oleum revertere. Nulla profecto adipis organa secernentia ostenduntur. Oportet tamen istiusmodi sint, et fabrica quoque specialis telæ cellulosæ earum partium, quæ debent habere adipem, ut oleum jam secretum contineant neque ad alias transire siant. Nam in partes purè reticulatas viam sibi nunquam aperit, quamvis per telam cellulosam facilis via sit aëri aut aquæ per totum corpus a capite ad calcem.

103. In tenero fœtu nihil adipis, in maturo parum reperitur. Infantes vero, modo bene aliti sint, fere solet pinguescere, donec ambulare

et propriis viribus semet exercere incipient; tum graciles fiunt, et sic manent ad virilem usque ætatem, qua minus crebra et valida uti solet exercitatione. Tum quadrati fiunt, et sæpe obesissimi: matura senectute, paulatim denuo marcescunt. Puellæ vero quodammodo pinguescunt circa ætatem puberem; unde forma nitida, teres, amabilis adeo, et apta premi: et fere omni ætate, femina plus quam viri pinguescunt. Viri quoque habitum corporis laxi et flacidi firmioribus obesiores fiunt.

104. Colligitur adeps usu multi cibi, oleosi, nutrientis, ex carnibus præsertim (modo con-

ex carnibus, modo concoctio sit bona, et validi potûs, imprimis
of flesh, provided digestion be good, and of strong drink, especially
 cerevisiæ, quiete et tranquillitate et animi et corporis, multo somno
porter, by rest and tranquillity both of mind and of body, by much sleep
 et torpore, castratione, frigore, repetitâ detractio sanguinis, que
and torpor, by castration, by cold, by repeated abstraction of blood, and
 multis aliis exinanitionibus: scilicet, quicquid, sanitate salvâ,
by many other evacuations; that is to say, whatever, the health being safe,
 minuit vitales et animales vires, et imprimis solitas excretiones,
diminishes the vital and animal powers, and especially the usual excretions,
 favet huic (sc. obesitati.) Vero multum pendet ab habitu corporis
favours this. But much depends upon the habit of the body
 ipsius, neque potest homo, ut bos, saginari ad libitum.
itself, nor can a man, as an ox, be flattened ad libitum (without limit.)

105. Certa obesitas, secundum ætatem hominis, est signum et
A certain fatness, according to the age of a man, is a sign and
 effectus prosperæ valetudinis. Vero nimia est ipsa morbus, et causa
effect of good health. But too much is itself a disease, and the cause
 aliorum morborum: vero semper et certissimè debellanda, si
of other diseases: but always and most certainly to be subdued, if
 modo fuerint bona voluntas et vis animi, validâ
only there shall be good will and strength of mind (resolution), by strong
 exercitatione corporis, brevè somno, parcâ et sicâ diætâ. Ne
exercise of the body, by short sleep, sparing and dry diet. Nor
 gregarius miles fuerit facile repertus, qui conqueratur de tali
will a common soldier be easily found, who can complain of such
 morbo.
a disease.

106. Adeps semper facit haud exiguam partem corporis, aliquando
Fat always forms no small part of the body, sometimes
 maximam (partem.) Igitur est non dubitandum quin habeat suos
the greatest. Therefore it is not to be doubted but that it has its own
 usus. Reddit motum faciliorem et liberiolem, oblinendo partes
uses. It renders motion easier and more free, by oiling the parts
 movendas, et sic minuendo frictionem: hoc modo impedit ne
to be moved, and thus by diminishing friction: in this manner it hinders that
 solidæ partes abradantur, quod aliter fieret; nec sinit
the solid parts be abraded, which otherwise would happen; nor does it permit
 vicinas partes condescere, quod aliquando fit, si ulcere,
the contiguous parts to grow together, which sometimes happens, if by an ulcer,

coctio bona sit) et potus validi, cerevisiæ imprimis, et animi et corporis quiete et tranquillitate, multo somno et torpore, castratione, frigore, sanguinis detractio repetita, multisque aliis exinanitionibus; quicquid scilicet, salva sanitate, vires vitales et animales, et imprimis solitas excretiones, minuit, huic favet. Multum vero pendet ab ipsius corporis habitu, neque homo, ut bos, ad libitum saginari potest.

105. Certa, secundum ætatem hominis, obesitas, prosperæ valetudinis signum est et effectus. Nimia vero, ipsa morbus est, et aliorum morborum causa: semper vero et cer-

tissime debellanda, si modo fuerint bona voluntas et vis animi, validâ corporis exercitatione, breve somno, parca et sicca diætâ. Nec facile miles gregarius repertus fuerit, qui de tali morbo conqueratur.

106. Adeps semper partem haud exiguam corporis facit, aliquando maximam. Non est igitur dubitandum, quin suos usus habeat. Motum faciliorem et liberiolem reddit, partes movendas oblinendo, et sic frictionem minuendo. Hoc modo, ne abradantur solidæ partes, quod aliter fieret, impedit; nec sinit partes vicinas condescere, quod aliquando fit, si ul-

vel alio casû, aliqua pars telæ quæ continebat adipem
 or other accident, some part of the tissue which contained the fat
 fuerit destructa.
 has been destroyed.

107. Quin confert haud parum et ad formam et pulchritudinem
 But it contributes not a little both to the form and beauty
 corporis, implendo magna interstitia inter musculos quæ
 of the body, by filling up the large interstices between the muscles which
 redderent corpus deforme et horrendum. Autem justâ pinguedine,
 would render the body deformed and horrible. But by a due fatness,
 hoc (corpus) fit nitidum, teres atque rotundum. Porro, adeps dat
 this becomes neat, round and plump. Moreover, fat gives
 candidum, cereum colorem, qui mixtus roseo, efficit colorem
 a white, waxy colour, which mixed with the rosy, renders the colour
 oris venustissimum. Hinc fit ut puellæ male metuentes
 of the countenance very comely. Hence it happens that girls foolishly fearing
 ne nimis pinguescant, et conantes, medicamentis, diætâ,
 lest they should grow too fat, and endeavouring, by medicine, by diet,
 genere vitæ, marcescere, soleant perdere, cum nitido habitu
 by manner of life, to grow lean, are accustomed to destroy, with their neat habit
 corporis, venustatem oris quoque.
 of the body, the comeliness of the face also.

108. Adeps resumtus ex suis cellulis in sanguinem, creditur
 Fat taken up again from its cells into the blood, is believed
 nutrire: sed hoc est minus certum. Defendit quodammodo a frigore;
 to nourish: but this is not certain. It defends in some degree from cold;
 datus magnâ copiâ animalibus frigidarum regionum.
 being given in great abundance to the animals of the cold regions.

cere vel alio casu, pars aliqua telæ quæ adipem
 continebat destructa fuerit.

107. Quin, et ad corporis formam et pulchritudinem haud parum confert, magna interstitia inter musculos implendo, quæ corpus deforme et horrendum redderent. Justa autem pinguedine, hoc, nitidum, teres, atque rotundum fit. Porro, adeps colorem dat candidum, cereum, qui roseo mixtus, venustissimum oris colorem

efficit. Hinc fit, ut puellæ, male metuentes ne nimis pinguescant, et medicamentis, diætâ, vitæ genere, marcescere conantes, cum nitido corporis habitu, oris quoque venustatem perdere soleant.

108. Nutrire creditur adeps ex suis cellulis in sanguinem resumtus. Sed hoc minus certum est. A frigore quodammodo defendit: animalibus regionum frigidarum magna copia datus.

CAP. III.
CHAP. III.

De vivo solido, seu nervoso genere, que dotibus et fabricâ et usibus ejûs; nec non de conjecturis quæ prolatae sunt circa naturam et functiones ejûs.
Of the living solid, or nervous system, and the properties and structure and uses of it; also of the conjectures which have been set forth about the nature and functions of it.

109. *Solidæ partes quæ habent sensum et mobilitatem dicuntur viva vel vitalia solida. Hæ dotes, pendentes à vitâ, incipiunt et desinunt cum eâ (vita): vero dotes solidarum partium, de quibus fuit dictum, supersunt etiam post mortem.*
The solid parts which have sensation and mobility are called the living or vital solids. These properties, depending upon life, begin and end with it: but the properties of the solid parts, of which it has been spoken, remain even after death.

110. *Autem partes, quæ habent vel sensum, vel mobilitatem, vel utrumque, sunt cerebrum, cerebellum, medulla oblongata, medulla spinalis, nervi oriundi ex his, diffusi per fere totum corpus, impensi in varia organa singulorum sensuum, et musculos, et demum muscoli ipsi.*
But the parts, which have either sensation, or mobility, or both, are the brain, the cerebellum, the medulla oblongata, medulla spinalis, the nerves that are derived (given off) from these, diffused (distributed) through almost the whole body, expended upon the various organs of the individual senses, and muscles, and lastly the muscles themselves.

111. *Sensus est multo magis generalis quam mobilitas, quippe (is) qui sit communis omnibus partibus jam recensitis, quamvis plane fiat per nervos solos. Vero mobilitas est propria musculosis fibris solis: igitur ubicunque sensus est, ibi nervi (sunt;) vero ubicunque mobilitas observatur, ibi musculosæ fibræ videntur esse.*
Sensation is much more general than mobility, as being that which is common to all the parts already enumerated, although evidently it takes place through the nerves alone. But mobility is peculiar to the muscular fibres alone: therefore wherever sensation is, there nerves (are;) but wherever mobility is observed, there muscular fibres seem to be.

CAP. III.—*De solido vivo, seu genere nervoso, ejusque dotibus, fabrica, et usibus; nec non de conjecturis quæ circa ejus naturam et functiones prolatae sunt.*

109. *Solida viva, vel vitalia, dicantur partes solidæ quæ sensum et mobilitatem habent. Hæ dotes, a vita pendentes, cum ea incipiunt et desinunt. Dotes vero partium solidarum, de quibus (75, et seq.) dictum fuit, etiam post mortem supersunt.*

110. *Partes autem, quæ vel sensum, vel mobilitatem, vel utrumque habent, sunt cerebrum,*

cerebellum, medulla oblongata, medulla spinalis, nervi ex his oriundi, per totum fere corpus diffusi, in varia singulorum sensuum organa et musculos impensi, et demum muscoli ipsi.

111. *Sensus multo magis generalis est quam mobilitas, quippe qui omnibus partibus jam recensitis communis sit, quamvis plane per nervos solos fiat. Mobilitas vero solis fibris musculosis est propria. Ubicunque igitur sensus est, ibi nervi; ubicunque vero mobilitas, observatur, ibi fibræ musculosæ videntur esse.*

112. Quin et mobilitas ipsa videtur pendere a nexu quem
Moreover mobility itself seems to depend upon the connexion which
 musculi habent cum nervis, &c. nam nervo resecto, vel
the muscles have with the nerves, &c. for a nerve being cut off, or
 compresso vel ligato, musculi quibus impendebatur, brevi
compressed or tied, the muscles upon which it was expended, quickly
 amittunt suam mobilitatem seu propriam vim contrahendi; nec
lose their mobility or peculiar power of contracting; nor
 res habet se aliter si cerebrum ipsum, vel origo
does the thing have itself otherwise if the brain itself, or origin
 nervorum, fuerint male affecta.
of the nerves, should be badly affected (disordered).

113. Sunt (ii) qui credunt musculos oriri et formari
There are those who believe that the muscles arise and are formed
 a nervis, et constare ex eâdem materiâ. Utrique sane
from the nerves, and that they consist of the same material. Both truly
 habent similem structuram, quatenus constant ex valde minutis
have a similar structure, inasmuch as they consist of very minute
 fibris; utrique sunt albi, dummodo musculi fuerint probe eloti et
fibres; both are white, provided the muscles have been well washed and
 purgati a sanguine, quem continent multum: neque
cleansed from the blood, when they contain much (in abundance): nor
 possunt nervosæ fibræ, quæ bene multæ subeunt musculos,
can the nervous fibres, which very numerous supply the muscles,
 distingui ullo modo ope *microscopii*, ab muscularibus
be distinguished in any way by means of the microscope, from the muscular
 fibris ipsis. Porro utrisque est (est pro habet) idem sensus, et
fibres themselves. Moreover both have the same sensation, and
 stimulantia et sedantia medicamenta plane edunt eosdem effectus
stimulating and sedative medicines evidently produce the same effects
 in musculis, sive fuerint admota musculo ipsi, sive
upon the muscles, whether they (shall) be applied to the muscle itself, or
 nervo qui adeat eum.
to the nerve which goes to (supplies) it.

114. Quantis difficultatibus scientia originis multarum
With how great difficulties the knowledge of the origin of many
 partium corporis prematur erit locus dicendi
parts of the body is pressed (beset) there will be an opportunity of speaking
 alibi; sive credamus omnes produci eodem tempore, sive
elsewhere; whether we believe that all are produced at the same time, or
 alias post alias certo ordine: interea tamen
some after others in a certain order: in the mean time nevertheless

112. Quin et mobilitas ipsa a nexu, quem musculi cum nervis, &c. habent, pendere videtur: nam resecto, vel compresso, vel ligato nervo, musculi quibus impendebatur, mobilitatem suam, seu vim propriam contrahendi, brevi amittunt; nec aliter res se habet, si cerebrum ipsum, vel origo nervorum, male affecta fuerint.

113. Sunt qui credunt musculos a nervis oriri et formari, et ex eadem materia constare. Utrique sane similem structuram habent, quatenus ex fibris valde minutis constant; utrique albi sunt, dummodo musculi probe eloti, et a

sanguine, quem multum continent, purgati fuerint: Neque ope *microscopii* ullo modo distingui possunt fibræ nervosæ, quæ bene multæ musculos subeunt, ab ipsis fibris muscularibus. Porro, idem sensus utrisque est, et stimulantia et sedantia medicamenta eosdem plane effectus in musculis edunt, sive ipsi musculo, sive nervo qui eum adeat, admota fuerint.

114. Quantis difficultatibus prematur scientia originis multarum corporis partium, alibi locus erit dicendi; sive omnes eodem tempore, sive alias post alias, certo ordine produci credamus. Interea tamen non dissimulandum est, partes

non est dissimulandum (sup. nobis) quasdam musculosas partes conspici
 we must not dissemble that certain muscular parts are seen
 perquam mature in foetû, et jam adeptas esse insignem
 very early in the foetus, and already have acquired remarkable
 vim et robur, quum cerebrum ipsum reperitur adhuc molle et
 power and strength, when the brain itself is found still soft and
 fere fluidum; et actionem earum (part. mus.) requiri ad functionem
 almost fluid; and that the action of them is required to the function
 et augmen hujus (cerebri); et musculos esse semper multo firmiores
 and increase of the latter; and that muscles are always much firmer
 partibus vere nervosis, et habere propriam vim, nimirum
 than parts truly nervous, and have a peculiar power, namely
 irritabilem, quam nervi nunquam participant.
 the irritable (irritability), which the nerves never participate.

115. Igitur oportet vel (sup. ut) musculi fuerint constituti
 Therefore it behoves either that the muscles (should) be constituted
 ex materiâ diversâ ab eâ ex quâ nervi fiunt, vel si
 of matter different from that of which the nerves are made, or if
 utrique constant ex eadem (materia) hæc sit fabricæ prorsus
 both consist of the same this is of a structure wholly
 diversæ in his ac in illis, ut habeat
 different in the latter and in the former, that it should have (to have)
 vires adeo dissimiles. Quod si, igitur, substantia musculorum
 strength so dissimilar. But if, therefore, the substance of the muscles
 ac nervorum sit diversa, tum patebit facile multam nervosam
 and nerves be different, then it will appear easily that much nervous
 substantiam misceri semper cum musculosâ (substantia). Nam
 substance is mixed always with the muscular. For
 tenuissima acicula potest non adigi in musculum quin
 the most slender little needle can not be driven into a muscle but that
 inde multi nervosi ramuli pungantur vel lacerentur
 thence many nervous little branches (filaments) are pricked or are lacerated
 simul, ut dolor clare testatur.
 at the same time, as the pain clearly testifies.

116. Igitur tam arctus nexus intercedit inter
 Therefore so close a connexion goes between (exists) between
 musculos que nervos tum quod attinet ad officium
 the muscles and the nerves as well what belongs to (in relation to) the duty
 quo funguntur tum quod attinet ad fabricam quam habent,
 which they perform as what belongs to the structure which they have,
 ut omnia viva solida habeantur merito pro partibus ejûdem
 that all the living solids may be considered justly as parts of the same

quasdam musculosas perquam mature in foetu conspici, et insignem vim et robur jam adeptas esse, quum cerebrum ipsum adhuc molle et fere fluidum reperitur; earumque actionem ad hujus functionem et augmen requiri; et musculos semper partibus vere nervosis multo firmiores esse, et vim propriam, irritabilem nimirum, habere, quam nervi nunquam participant.

115. Oportet, igitur, vel ex diversa musculi constituti fuerint materia, ab ea ex qua nervi fiunt, vel, si ex eadem utrique constant, hæc fabricæ prorsus diversæ sit in his, ac in illis,

ut vires adeo dissimiles habeat. Quod si, igitur, diversa sit musculorum ac nervorum substantia, tum facile patebit multam substantiam nervosam cum musculosâ semper misceri. Nam acicula tenuissima non potest in musculum adigi, quin inde simul multi ramuli nervosi pungantur vel lacerentur; ut dolor clare testatur (115).

116. Igitur tam arctus inter musculos nervosque intercedit nexus, tum quod ad officium attinet quo funguntur, tum quod ad fabricam quam habent, ut merito omnia solida viva pro

generis, cui nomen Nervosum Genus solet imponi à
 system, to which the name Nervous System is accustomed to be applied by
 medicis.
 physicians.

117. Miræ dotes quas hæ partes possident vindicarunt
The wonderful properties which these parts possess have claimed
 sibi, optimo jure, attentionem medicorum et philosophorum:
to themselves, by the best right, the attention of physicians and philosophers:
 que plurimi et ingeniosissimi viri, inter quos oportet numerare
and many and very ingenious men, amongst whom it behoves to reckon
 summum Newtonum, collocarunt haud exiguam operam in investigandis
the great Newton, have bestowed no small labour in investigating
 causis earundem (dotum) que perscrutando modo quo
the causes of the same and in thoroughly searching the manner in which
 variæ functiones ipsarum fierent, que protulerunt
the various functions of themselves were done (performed), and made
 in medium varias conjecturas quæ placebant singulis de
public (published) the various conjectures which pleased each concerning
 his rebus. Vero ulla ratio nondum est
these things. But any method has not yet (no method has yet) been
 proposita explorandi rem per experimenta: et experientia
proposed of exploring the matter by experiments: and the experience
 bis mille annorum demonstravit satis que super,
of twice a thousand years has demonstrated sufficiently and above,
 sapientissimos etiam hominum rarissime detegere arcana Naturæ
that the wisest even of men very seldom unfold the secrets of Nature
 conjectando. Nonnulli scriptores, abusi sunt omnino male nunquam
by conjecturing. Some writers, have misused altogether badly the never
 non venerando nomine Newtoni, qui rejecerunt in
not to be venerated (ever to be revered) name of Newton, who have referred to
 totam auctoritatem ejûs opinionem quam cuperent tueri
the entire authority of him the opinion which they wished to defend (to
 quamvis ille, (Newtonius) solitâ modestiâ et prudentiâ,
support) although he, with his accustomed modesty and prudence,
 quas plerique auctores maluere laudare quam imitari, proposuerit
which most authors had rather praise than imitate, proposed
 suam sententiam de hac re, tantum pro conjecturâ seu
his own opinion concerning this matter, only as a conjecture or
 quæstione, aut refellendâ aut confirmandâ idoneis experimentis et
question, either to be refuted or confirmed by suitable experiments and
 argumentis. Sed ne licet sumere conjecturas quidem
arguments. But it is not permitted to take (to admit) the conjectures even

artibus ejusdem generis habeantur, cui nomen
genus Nervosum a medicis imponi solet.

117. Miræ quas hæ partes possident dotes
 medicorum et philosophorum attentionem op-
 timo jure sibi vindicarunt: plurimique et in-
 geniosissimi viri (inter quos summum *Neuto-*
 num numerare oportet) operam haud exiguam
 collocarunt in causis earundem investigandis,
 modo quoque perscrutando quo variæ ipsarum
 functiones fierent; variasque quæ singulis
 placebant de his rebus conjecturas in medium
 protulerunt. Nondum vero ratio ulla propo-
 sita est rem per experimenta explorandi; et

experientia bis mille annorum satis superque
 demonstravit sapientissimos etiam hominum
 Naturæ arcana conjectando rarissime detegere.
 Male omnino *Newtoni* nomine, nunquam non
 venerando, abusi sunt scriptores nonnulli, qui
 opinionem quam tueri cuperent in ejus aucto-
 ritatem rejecerunt totam: quamvis ille, solita
 modestia et prudentia (quas laudare quam imi-
 tari plerique auctores maluere) suam de hac
 re sententiam, pro conjectura tantum seu
 quæstione proposuerit, idoneis experimentis et
 argumentis aut refellenda aut confirmanda.
 Sed ne quidem *Newtoni* conjecturas pro veris

Neutoni pro veris: non sic ille imitandus; non sic scientia
of Newton as truths: not thus is he to be imitated; not thus is science
promovenda.
to be promoted.

118. Profecto variæ sententiæ prolatae sunt de modo
Truly various opinions have been published concerning the mode
quo sensus que motus fiunt in animali corpore; vero hoc
in which sensation and motion take place in the animal body; but this
fundamentum fortasse quoque et vitium, est commune omnibus,
principle perhaps also even fault, is common to all,
nempe, quod petant rationem utriusque à quibusdam motibus
namely, that they seek the cause of both from certain motions
propriis et peculiaribus Nervoso Generi, incipientibus ab organo
proper and peculiar to the Nervous System, beginning from the organ
sensûs, et propagatis per nervos ad cerebrum dum sen-
of sense, and propagated through the nerves to the brain whilst we are
timus, et incipientibus a cerebro que delatis
perceiving (during sensation), and beginning from the brain and carried
per nervos, (sive eosdem qui inserviunt sensui
(transmitted) through the nerves, (whether the same which serve for sensation
sive alios omnino diversos et distinctos quamvis colligatos cum
or others altogether different and distinct although bound up with
illis in eundem fasciculum ad musculos dum movemus
them in the same bundle (fasciculus) to the muscles whilst we are moving
nostros musculos ad arbitrium.
our muscles at our will.

119. Alii crediderunt hos motus fieri per substantiam
Some believed that these motions were caused through the substance
ipsam nervorum trementium vel vibrantium ut vocabant non
itself of the nerves trembling or vibrating as they called it not
secus ac chordæ lyræ tremunt percussæ
otherwise than as (like as) the chords of a lyre tremble (when) struck
plectro.
with the plectrum.

120. Alii quibus erat bene perspectum quam male nervi et
Others to whom it was well perceived how badly the nerves and
cerebrum essent accommodati ad perficiendos et propagandos tales
brain were suited to perform and propagate such
tremores vel motus, quippe qui existant toti mollissimi
tremors or motions, as being things which exist entire (throughout) very soft
et impediti multum tactu vicinarum partium, vel
and hindered very much by the contact of the neighbouring parts, or

sumere licet: non sic ille imitandus; non sic scientia promovenda.

118. Variæ profecto sententiæ, de modo quo sensus motusque in corpore animali fiunt, prolatae sunt; omnibus vero hoc fundamentum commune est, fortasse et vitium quoque, nempe, quod rationem utriusque petant a motibus quibusdam *Generi Nervoso* propriis et peculiaribus, ab organo sensus incipientibus, et per nervos ad cerebrum propagatis, dum sentimus; et a cerebro incipientibus, perque nervos (sive eosdem qui sensui inserviunt, sive alios omnino diversos et distinctos, quamvis in

eundem fasciculum cum illis colligatos) ad musculos delatis, dum musculos nostros ad arbitrium movemus.

119. Hos motus alii crediderunt per ipsam substantiam nervorum fieri, trementium vel vibrantium, ut vocabant, non secus ac lyræ chordæ tremunt plectro percussæ.

120. Alii, quibus bene perspectum erat quam male accommodati essent nervi et cerebrum ad tales perficiendos et propagandos tremores vel motus (quippe qui toti mollissimi existant, et vicinarum partium tactu multum impediti vel sæpe etiam ad vicinas partes alligati sicut

sæpe etiam sint alligati ad vicinas partes, rejecerunt motus
often even are bound to the neighbouring parts, referred the motions,
 quos contendebant fieri et esse necessarios, in tenuem et
which they contended took place and were necessary, to a thin and
 valde mobilem humorem, quem fingebant inesse nervis, que
very mobile fluid, which they supposed existed in the nerves, and
 moveri in iis suis legibus, que possidere multas et miras
was moved in them by its own laws, and possessed many and wonderful
 dotes et excellentias.
properties and excellencies.

121. Demum alii confugerunt potius ad Universalem Ætherem, qualem
Lastly others had recourse rather to a Universal Æther, such as
 et nuper et olim multis philosophis persuasum est (imperson. ponitur)
both lately and formerly many philosophers believed
 pervadere, implere, que temperare totum mundum variis legibus;
pervaded, filled up, and governed the whole world by various laws;
 ope et ministerio cujus sidera mearent, sol fulgeret,
by the aid and ministry of which the stars passed on, the sun shone,
 mare cresceret que decresceret, flumina laberentur,
the sea increased and decreased (flowed and ebbcd), rivers glided on,
 venti spirarent, plantæ pullularent, Jupiter ipse tonaret. — Certe
the winds blew, plants budded, Jupiter himself thundered.—Certainly
 utilissimus et strenuissimus æther, sed nusquam prehensus, nusquam
a very useful and very powerful æther, but nowhere laid hold of, never
 deductus ad quæstionem ut redderet rationem sui,
brought to the question that it might render an account of itself,
 mutabilior et fugacior Proteo ipso, jam agitatus
more changeable and transient than Proteus himself, already agitated
 diu que multum frustra, tandem requiescat in pace. Nam
a long time and a great deal in vain, at length let it rest in peace. For
 quæ spesprehendendi (sup. id) "cui est jus
what hope of taking that "to which is (which has) the faculty
transire in plures figuras?"
to pass into many forms?"

"Nam modo videre (pro videbant) te juvenem, modo (videre)
"For now they saw thee a youth, now they saw
 te leonem:— nunc eras violentus aper: nunc anguis quem
thee a lion:— now thou wast a savage boar: now a snake which
 timerent tetigisse: modo cornua faciebant te taurum:—
they would fear to have touched: sometimes horns made thee a bull:—
 sæpe poteras videri lapis, sæpe quoque arbor.— Interdum, imitatus
often you could seem a stone, often also a tree.— Sometimes, imitating

motus, quos fieri et necessarios esse contende-
 bant, in humorem tenuem et valde mobilem
 rejecerunt, quem nervis inesse fingebant, inque
 iis suis legibus moveri, multasque et miras
 dotes et excellentias possidere.

121. Alii demum ad Ætherem Universalem
 potius confugerunt, qualem et nuper et olim
 multis philosophis persuasum est totum mun-
 dum pervadere, implere, variisque legibus tem-
 perare; cuius ope et ministerio sidera mearent,
 sol fulgeret, mare cresceret decresceretque, flu-
 mina laberentur, venti spirarent, plantæ pul-
 lularent, Jupiter ipse tonaret.—Utilissimus
 certe et strenuissimus æther, sed nusquam pre-

hensus, nusquam ad quæstionem deductus, ut
 sui rationem redderet, Proteo ipso mutabilior
 et fugacior, diu multumque jam frustra agita-
 tus, tandem requiescat in pace. Nam quæ spes
 prehendendi "cui in plures jus est transire
 figuras."

"Nam modo te juvenem, modo te videre
 leonem;
 Nunc violentus aper, nunc quem tetigisse ti-
 Auguis eras; modo te faciebant cornua taurum:
 Sæpe lapis poteras, arbor quoque sæpe videri.
 Interdum, faciem liquidarum imitatus aqua-
 rum, [ignis."
 Flumen eras; interdum, uadis contrarius

faciem liquidarum aquarum, eras flumen: interdum,
the appearance of liquid waters, thou wast a river: sometimes,
 ignis contrarius undis.”
fire contrary to waters.”

122. Vero medici male disputaverint de his aut similibus
But physicians badly disputed concerning these or similar
 commentis priusquam fuerit demonstratum vel observando vel
inventions before it was demonstrated either by observing or
 experiendo talem æthera existere, que
by trying (by observation or experience) that such an æther existed, and
 tales motus fieri in nervoso genere, vel saltem fuerit
that such motions were made in the nervous system, or at least it was
 factum credibile nodum iri solutum
made (rendered) credible that the knot would be loosed (the difficulty removed)
 talibus conjecturis. Enim omnibus postulatis de æthere et
by such conjectures. For all things required concerning the æther and
 motibus in nervoso genere concessis, proficitur omnino parum:
motions in the nervous system being granted, it advantages nothing at all:
 nam tremores nervorum, vel motus ætheres, qualescunque amantissimi
for tremors of the nerves, or motions of the æther, whatever kind the most loving
 commentorum hujusmodi potuerint fingere sibi,met,
of conjectures of this kind could (have been able to) imagine to themselves
 erunt nusquam aut sensus, aut similes sensui, aut unquam
will be in no way either sensation, or like to sensation, or ever
 mutabiles, secundum notas leges Naturæ, in sensum.
changeable, according to the known laws of Nature, into sensation.

123. Nec quisquam facile ostenderit quo pacto voluntas
Nor could any one easily shew in what manner the will
 animi, cui voluntati inest nihil corporei, afficeret tenuissimum
of the mind, which will has nothing corporeal, could affect a very thin
 et subtilissimum que mobilissimum æthera, facilius aut melius quam
and very subtle and very mobile æther, more easily or better than
 saxum que conjiceret eum (æth.) in motus.
a stone and throw it into motions.

124. Nec hoc modo melior aut magis perspicua ratio
Nor in this manner is a better or more perspicuous explanation
 redditur sensuum qui dicuntur interni, scilicet, memoriæ,
rendered of the senses which are called internal, that is to say, of memory,
 imaginationis, et judicii. Erit vix credibile ullos motus
of imagination, and judgment. It will be scarcely credible that any motions
 retineri et condi in nervoso genere, erupturos denuo et
are retained and stored in the nervous system, to break forth again and

122. Male vero de his aut similibus commen-
 tis medici prius disputaverint, quam vel obser-
 vando vel experiendo, demonstratum fuerit,
 talem æthera existere, talesque in genere ner-
 voso motus fieri; vel saltem credibile factum
 fuerit, talibus conjecturis nodum solutum iri.
 Concessis enim omnibus de æthere et motibus in
 genere nervoso postulatis, parum omnino profici-
 tur; nam tremores nervorum vel motus ætheris,
 qualescunque commentorum hujusmodi aman-
 tissimi sibi met fingere potuerint, nusquam aut
 sensus erunt, aut sensui similes, aut in sen-

sum, secundum notas Naturæ leges, unquam
 mutabiles.

123. Nec facile quisquam ostenderit quo
 pacto voluntas animi, cui voluntati nihil inest
 corporei, tenuissimum, et subtilissimum, mobi-
 lissimumque æthera, facilius aut melius quam
 saxum afficeret, eumque in motus conjiceret.

124. Nec melior hoc modo aut magis per-
 spicua ratio redditur sensuum qui dicuntur
 interni; memoriæ scilicet, imaginationis, et
 judicii. Vix credibile erit motus illos in
 genere nervoso retineri et condi, nostro arbitrio

renovandos nostro arbitrio; neque impressiones aut vestigia
to be renewed at our pleasure; nor that impressions or footsteps (traces)
 aut ullas imagines eorum motuum imprimi in cerebro, veluti
or any images of those motions are impressed in the brain, as
 sigilli in cera, quas (Imag. &c.) contemblemur iterum que iterum ad
of a seal in wax, which we can contemplate again and again at
 nostrum arbitrium, que integremus denuo motus qui primo
our pleasure, and renew again the motions which at first
 effecissent eas: tamen renovatio præteritorum sensuum est sæpe
had produced them: nevertheless the renewal of gone by sensations is often
 validissima, recordantibus, imaginantibus, somniantibus.
very strong, in persons remembering, imagining, dreaming.

125. Quod si tales motus sunt necessarii ad actionem æque
But if such motions are necessary to the action alike
 interiorum ac exteriorum sensuum, tum plane oportebit vel
of the internal as of the external senses, then plainly it will behove either
 (ut) motus præcedant sensum, vel hic (præcedat) illos, vel
that the motions precede the sensation, or the latter the former, or
 denique utrique fiant uno que eodem puncto temporis. Si
lastly that both take place at one and the same instant of time. If
 sensus est prior, nequit oriri à quovis motu fluidi
sensation is the former, it cannot arise from any motion of the fluid
 nervorum, et debet habere aliam causam. Si ille motus
of the nerves, and ought to have another cause. If the former motion
 est prior, causa ejus erit quærenda, scilicet qui possit
is prior, the cause of it will be to be sought, as being a thing which can
 minime pendere à sensu aut voluntate quæ sequuntur.
by no means depend upon sensation or will (volition) which follow.
 Si demum uterque, nimirum motus et sensus, fit simul,
If finally both, namely motion and sensation, take place at the same time,
 oportet (nos) fingere aliam causam utriusque; enim neuter potest
it behoves that we imagine another cause of both; for neither can
 esse causa alterius priusquam ipse existit.
be the cause of the other before itself exists.

126. Sane possumus vix, aut ne quidem vix, concipere
Truly we can scarcely, or not even scarcely, conceive
 animo ullam mutationem fieri in corporeis rebus, quæ (mutatio)
in our mind that any change is made in corporeal things, which
 non pendeat a quodam motu, vel saltem conjungatur aliquo
does not depend upon some motion, or at least is conjoined in some
 modo cum motu: vero res de quibus agitur hic,
manner with motion: but the things of which it is treated here,

denuo erupturos et renovandos; neque impressiones, aut vestigia, aut imagines ullas eorum motuum in cerebro imprimi, veluti sigilli in cera, quas ad arbitrium nostrum iterum iterumque contemblemur, motusque qui eas primo effecissent denno integremus. Tamen validissima sæpe est sensuum præteritorum renovatio, recordantibus, imaginantibus, somniantibus.

125. Quod si tales motus ad interiorum æque ac exteriorum sensuum actionem necessarii sunt, tum plane oportebit, vel motus sensum præcedant, vel hic illos, vel denique uno eodemque temporis puncto utrique fiant.—Si

prior est sensus, a motu quovis fluidi nervorum oriri nequit, et aliam igitur debet habere causam.—Si prior est motus ille, causa ejus quærenda erit, scilicet qui minime pendere possit a sensu aut voluntate quæ sequuntur. Si demum uterque, motus nimirum et sensus, simul fit, utriusque aliam fingere oportet causam; neuter enim alterius causa esse potest, prius quam ipse existit.

126. Vix sane, aut ne vix quidem, animo concipere possumus mutationem ullam in rebus corporeis fieri, quæ a motu quodam non pendeat, vel saltem cum motu aliquo modo conjungatur. Res vero de quibus hic igitur,

nimirum sensus, tum externus tum internus, et voluntas, et
namely sensation, as well external as internal, also volition, and
 demum conatus ad movendos musculos vel artus, sunt non
lastly the efforts to move the muscles or the limbs, are not
 corporeæ, neque explanandæ iisdem principiis ac tales res.
corporeal, nor to be explained upon the same principles as such things.

127. Igitur commentis hujusmodi de rebus, quas Natura
Therefore conjectures of this kind about things, which Nature
 forsitan negaverit humanis visibus, missis, tanquam ducentibus
perhaps has denied to human sight, being dismissed, as if leading
 ad inutilia, et incomprehensibilia, vel fortasse absurda erit
to useless, and incomprehensible, or perhaps absurd things it will be
 magis è suâ re, si medici accinxerint semet
more to their purpose, if physicians should set themselves (apply, &c.)
 gnaviter ad investigandas singulas res factas et veras
in good earnest to investigate the individual things done and true (esta-
 de hoc argumento.
blished facts and truths) concerning this subject.

CAP. IV.

CHAP. IV.

De sensû generatim, que varietatibus, usibus, voluptatibus, molestiis,
 Of sensation generally, and the varieties, uses, pleasures, troubles,
et vitiis ejûs.
 and disorders of it.

128. Sensus eget nullâ definitione, neque revera potest facile
Sensation wants no definition, nor truly can it easily
 definiri; quippe (Is sit) quo nihil fere sit simplicius
be defined; as being a thing than which nothing almost can be more simple
 aut melius intellectum. Tamen solet describi, autem
or better understood. Nevertheless it is accustomed to be described, but
 vix explanari, longo et parum accurato et satis
scarcely to be explained, by a long and no way accurate and sufficiently
 inepto circuitu verborum hujusmodi; mutatio in
unsuitable circuit of words (circumlocution) of this kind; a change in

sensus nimirum, tum externus tum internus, et voluntas, et conatus demum ad musculos vel artus movendos, non sunt corporeæ, neque iisdem ac tales res principiis explanandæ.

127. Missis igitur hujusmodi commentis de rebus quas Natura forsitan visibus humanis negaverit, tanquam ad inutilia, et incomprehensibilia, vel absurda fortasse, ducentibus, magis è re sua erit, si medici ad singulas res factas et veras de hoc argumento investigandas semet gnaviter accinxerint.

CAP. IV.—*De sensu generatim, ejusque varietatibus, usibus, voluptatibus, molestiis, et vitiis.*

128. Sensus nulla definitione eget, neque revera facile definiri potest; quippe quo nihil fere simplicius sit, aut melius intellectum. Describi tamen vix autem explanari solet, hujusmodi verborum circuitu, longo et parum accurato, et quidem satis inepto;—Mutatio cujus conscii sumus in statu animi, mutatione aliqua in statu corporis effecta.

statu animi cujus sumus conscli, effecta aliquâ mutatione
the state of the mind of which we are conscious, effected some change
 in statu corporis.
in the state of the body.

129. Vero utcunque simplex sensus videatur primo aspectu, philosophi
But however simple sensation may seem at first sight, philosophers
 perscrutati rem accuratiùs, crediderunt se detexisse
having examined the subject more accurately, believed that they had detected
 duplicem naturam ejùs (sensus), et ideo monent esse probe
the twofold nature of it, and therefore advise that we should well
 distinguendum (sup. nobis) inter duas res pertinentes ad sensum,
distinguish between the two things serving to sensation,
 quæ vulgo solent comprehendi sub uno que eodem
which commonly are wont to be comprehended under one and the same
 nomine, quamvis nemo sanus (mentis) existat tam stupidus qui
name, although no one in his senses can exist so stupid who
 confuderit res ipsas, et sane philosophi objecerunt
could confound the things themselves, and truly philosophers have cast upon
 talem errorem, omnino perperam, vulgo hominum.
(attributed) such an error, altogether falsely, to the commonality of men.

130. Altera (res) harum rerum nimirum, mutatio quæ efficitur in
The one of these things namely, the change which is effected in
 statu animi, spectat ad animum solum et est propria
the state of the mind, looks to (relates to) the mind alone and is peculiar
 huic (sc. animo) fugax et peritura suâ naturâ, et simul
to it, fleeting and perishable in its nature, and at the same time
 simplicissima, que aut definienda aut describenda nullis verbis
very simple, and either to be defined or described, by no word
 (neither to be defined nor described by any words), dissimillima externæ rei
very unlike the external object
 quæ excitat sensum, alienissima ab omni corporeâ conditione
which excites the sensation, very different from all kind of corporeal condition
 atque naturâ, ita ut neque ipsa nec quicquam simile ipsi possit in
and nature, so that neither itself nor anything like to it can be
 esse in externâ re, quam percipimus.
in (exist) in the external object, which we perceive.

131. Altera res quæ vulgo comprehenditur sub nomine
The other thing which commonly is comprehended under the name
 sensûs, nimirum, quævis qualitas externæ rei quam contemplamur,
of sensation, namely, some quality of the external thing which we view,
 quam sensus (scilicet, mutatio in statu animi,) representat
which the sensation (that is to say, the change in the state of the mind,) represents

129. Utcunque vero simplex primo aspectu sensus videatur, philosophi, rem accuratiùs perscrutati, duplicem ejus naturam se detexisse crediderunt, et ideo monent probe esse distinguendum inter duas res ad sensum pertinentes, quæ vulgo sub uno eodemque nomine comprehenduntur; quamvis profecto nemo sanus existat tam stupidus qui res ipsas confuderit; et sane perperam omnino talem vulgo hominum errorem objecerunt philosophi.

130. Harum rerum altera (mutatio nimirum quæ in animi statu efficitur) ad animum solum spectat, et huic propria est, sua natura fugax

et peritura, et simul simplicissima, nullisque aut definienda aut describenda verbis, rei externæ quæ sensum excitat dissimillima, ab omni corporea conditione atque natura alienissima, ita ut neque ipsa, nec quicquam ipsi simile, in re externa quam percipimus inesse possit.

131. Altera vero, res quæ vulgo sub nomine sensus comprehenditur, qualitas nimirum quævis rei externæ quam contemplamur, quam sensus (mutatio scilicet in animi statu) nobis representat vel suggerit, longe diversæ videtur esse naturæ.—Qualitates enim rerum externa-

vel suggerit nobis, videtur esse longe diversæ naturæ. Enim
 or suggests to us, seems to be of a far different nature. For
 qualitates externarum rerum quas percipimus ope sensûs
 the qualities of the external things which we perceive by the aid of the sense
 pertinent ad illas res solas, neque possunt inesse ullo pacto animo,
 belong to those things alone, nor can exist in any manner in the mind
 nec habent quicquam simile aut commune cum animo que variis
 nor have they any thing similar or common with the mind and the various
 statibus ejus (sc. animi) constantes et durabiles (sc. qualitates) suâ naturâ,
 states of it constant and durable in their nature,
 sive fuerint perceptæ a nobis, sive ignotæ aut neglectæ, neque adeo
 whether they shall be perceived by us, or unknown or neglected, nor so
 simplices, quin multæ (qualitates) earum, saltem, possint definiri aut
 simple, but that many of them, at least, can be defined or
 describi facile et accurate, et comparari invicem inter
 be described easily and accurately, and be compared in turn between
 se
 themselves (mutually.)

132. Profecto acquirimus plurimam et utilissimam scientiam de
 Truly we acquire a great deal and very useful knowledge concerning
 externis rebus, facillimo et simplicissimo modo, per varios
 external things, in a very easy and very simple manner, by the various
 sensus, præsertim visum et tactum, sine ullo studio aut labore; ita
 senses, especially the sight and touch, without any study or labour; so
 ut sit bene perspicuum, istas facultates sentiendi
 that it is well perceived (very evident), that those faculties of perceiving
 esse datas nobis a Supremo Opifice, hoc, (saltem ex quadam
 were given to us by the Supreme Maker, with this, (at least to a certain
 parte,) consilio. Vero omnes sensus non præstant hunc usum,
 extent,) design. But all the senses do not afford this use,
 neque tam facilis via patet ad scientiam totiûs
 (answer this end), nor does so easy a way lie open to the knowledge of all
 Naturæ; et sane multa (sup. negotia) ostendunt varios sensus
 Nature; and truly many things shew that the various senses
 quibus instruimur, inservire aliis et sæpe eximiis usibus.
 with which we are furnished serve for other and often excellent uses (purposes.)

133. Sensus fit in sano et vigili homine, quandocunque
 Sensation takes place in a healthy and waking man, whensoever
 status cujusvis partis nervosi generis fuerit mutatus aliquantum,
 the state of any part of the nervous system has been changed somewhat,
 sive ista mutatio facta sit ab externâ causâ sive ab
 whether that change has been caused by an external cause or by

rum, quas sensus ope percipimus, ad illas res solas pertinent; neque animo ullo pacto inesse possunt, nec quicquam cum animo, variisque ejus statibus, simile aut commune habent, sua natura constantes et durabiles sive perceptæ a nobis fuerint, sive ignotæ aut neglectæ, neque adeo simplices, quin multæ saltem earum, facile et accurate definiri aut describi, et inter se invicem comparari, possint.

132. Plurimam profecto et utilissimam de rebus externis scientiam, facillimo et simplicissimo modo, per varios sensus, visum præsertim et tactum, sine ullo studio aut labore

acquirimus; ita ut bene perspicuum sit, hoc (quadam saltem ex parte) consilio, istas sentiendi facultates a Supremo Opifice nobis esse datas. Non omnes vero sensus hunc usum præstant; neque tam facilis ad totius Naturæ scientiam patet via; et sane multa ostendunt, varios quibus instruimur sensus, aliis sæpe et eximiis usibus inservire.

133. Fit sensus in homine sano et vigili, quandocunque status partis cujusvis generis nervosi aliquantum mutatus fuerit, sive ista mutatio ab externa causa, sive ab interna, facta sit.—Qui a priori causa fiunt sensus, ab

internâ. Sensus qui fiunt a priore causâ dicuntur
an internal. The sensations which take place from the former cause are said
 apud medicos esse ab impressione vel impulsu, qui fiunt
among physicians to be from impression or impulse, those which take place
 a posteriore causâ, à conscientiâ.
from the latter cause, from consciousness.

134. Neque sane sensus fit ab omni impulsu in nervosum
Nor truly is sensation caused by every impulse upon the nervous
genus: ut sentiamus, oportet (ut) impulsus sit factus
system: that we may perceive (to perceive), it behoves that the impulse be made
 certâ vi aut impetu in partem præditam
(the impulse must be made) with a certain force or impetus upon a part endowed
 sensu. Enim sensus a leviore impulsu est obscurus, aut
with sensibility. For sensation from a slighter impulse is obscure, or
 plane nullus; autem, ab multo vehementiore impulsu, dolor fit
altogether none; but, from a much more violent impulse, pain is made (arises)
 sine ullo distincto sensu; quod si demum impulsus fuerit
without any distinct sensation; but if at length the impulse should be
 vehementissimus, que tanta vis fuerit illata sentienti parti,
very strong, and so much violence should be applied to the sentient part,
 ut fabrica organi ipsius lædatur, tum stupor fere oritur.
that the structure of the organ itself be injured, then stupor commonly arises.

135. Neque perbrevis impulsus sive impressio, quamvis alioquin
Nor does a very short impulse or impression, although otherwise
 satis vehemens, efficit sensum; ad quem (sc. sensum) nimirum
sufficiently vehement (strong), cause sensation; for which doubtless
 aliquod temporis et quædam diuturnitas impressionis requirantur.
something of time (some time) and a certain continuance of impression are required.
 Corpora, et quidem satis magnæ molis, mota velocitate tantâ ut
Bodies, and even of sufficiently great bulk, moved with a velocity so great that
 nequeant conspici, docent. Ratio est quoque par
they cannot be seen, teach (prove this). The reason is also alike (similar)
 multorum dolorum quos præstigiatores solent exhibere; quibus
of the many tricks which jugglers are accustomed to exhibit; to which
 hominibus solet esse Axioma, et fundamentum quasi totiûs
men it is wont to be an Axiom, and the foundation as it were of their whole
 artis, motum esse multo velociorem visu.
art, that the motion be much quicker than the sight.

136. Vero impulsu cessante, que externâ causâ sensus ideo
But the impulse ceasing, and the external cause of sensation being conse-
 sublatâ, sensus ipse qui excitatur solet durare per
quently removed, the sensation itself which is excited is accustomed to last during

impressionem vel impulsu; qui a posteriore causa fiunt, a conscientia, apud medicos, dicuntur esse.

134. Neque ab omni sane impulsu in *genus nervosum* fit sensus. Ut sentiamus, oportet certa vi aut impetu in partem sensu præditam impulsus factus sit. A leviore enim impulsu, sensus obscurus aut plane nullus est; ab impulsu autem multo vehementiore, dolor fit, sine ullo distincto sensu; quod si impulsus demum vehementissimus fuerit, tantaque vis parti sentienti illata fuerit, ut organi ipsius fabrica lædatur, tum stupor fere oritur.

135. Neque perbrevis impulsus sive impressio,

quamvis alioquin satis vehemens, distinctum sensum, efficit; nimirum ad quem temporis aliquod, et diuturnitas quædam impressionis, requirantur.—Docent corpora, et quidem satis magnæ molis, tanta velocitate mota, ut conspici nequeant.—Par quoque ratio est multorum dolorum quos præstigiatores solent exhibere; quibus hominibus *Axioma*, et quasi artis totius fundamentum, esse solet, motum visu multo esse velociorem.

136. Cessante vero impulsu, sublataque ideo externa sensus causa, ipse qui excitatur sensus, per aliquod, quamvis exiguum, temporis spatium, durare solet.—Docet circulus flammeus,

aliquod quamvis exiguum, spatium temporis. Flammeus circulus, quem
some although short, space of time. The fiery circle, which
 conspicimus a rapidâ rotatione ardentis baculi, docet.
we behold from the rapid rotation of a burning stick, proves this.

137. Autem sensus est non adeo corporeus quin multum pendeat
But sensation is not so far corporeal but that much may depend
 a statu mentis; enim hac (sc. mente) occupatâ aliis rebus
upon the state of the mind; for this being occupied with other things,
 satis validi impulsus facti in organa sensuum vix, aut ne
sufficiently strong impulses made upon the organs of the senses scarcely, or not
 quidem vix percipiuntur. Contra, si attendimus animum
even scarcely are perceived. On the other hand, if we apply the mind
 probe, possumus sæpe facile percipere levissimos impulsus,
diligently, we can often easily perceive the slightest impulses,
 gravioribus (sc. impulsibus) neglectis, que vix perceptis.
the stronger ones being neglected, and scarcely perceived.

138. Hoc fundamento ut videtur, saltem ex magna
Upon this foundation (principle) as it seems, at least in a great
 parte, nititur illud mirum et fere incredibile acumen et
measure, depends that wonderful and almost incredible sharpness and
 perfectio singulorum externorum sensuum, quæ varii homines, occupati
perfection of the individual external senses, which various men, occupied
 variis negotiis, solent adipisci multo usu: quamvis sit
in various pursuits, are accustomed to acquire by much use: although it is
 satis verisimile (nobis) esse tribuendum nonnihil perfectionis
sufficiently probable that we ought to attribute something of a perfection
 hujûamodi conditioni organorum, quæ possint acui variis
of this sort to the condition of the organs, which can be sharpened in various
 modis crebrâ exercitatione, et aptari melius ad propria
ways by frequent exercise, and be fitted better for their peculiar
 munera. Est bene notum organa motus proficere haud
duties (functions.) It is well known that the organs of motion benefit not a
 parum hoc modo.
little in this manner.

139. Attentio pendet quodammodo a voluntate, tamen datur
Attention depends in some degree upon the will, nevertheless it is given
 plerumque validis, novis, jucundis, ingratis sensibus, que demum
generally to strong, new, pleasant, unpleasant sensations, and lastly
 iis (sc. sensibus) qui, præter solitum, afficiunt vel commovent
to those which, beyond customary (unusually) affect or disturb
 mentem quivis modo.
the mind in any way.

quem conspicimus a rapida rotatione baculi ardentis.

137. Sensus autem non adeo est corporeus quin multum pendeat a statu mentis. Hac enim aliis rebus occupata, impulsus satis validi in organa sensuum facti, vix, aut ne vix quidem, percipiuntur. Contra, si probe animum attendimus, neglectis vixque perceptis gravioribus, levissimos sæpe impulsus facile percipere possumus.

138. Hoc ut videtur fundamento, magna saltem ex parte, nititur mirum illud et fere incredibile singulorum sensuum, externorum

acumen et perfectio, quæ varii homines, variis occupati negotiis, multo usu solent adipisci; quamvis satis sit verisimile perfectionis hujûamodi nonnihil tribuendum esse conditioni organorum, quæ variis modis acui possint crebra exercitatione, et ad propria munera melius aptari. Bene notum est organa motus hoc modo haud parum proficere.

139. Attentio a voluntate quodammodo pendet; tamen plerumque datur sensibus validis, novis, jucundis, ingratis, iisque demum qui mentem quivis modo præter solitum afficiunt vel commovent.

140. Hinc tot res (sunt) vix, ac ne quidem vix perceptæ,
Hence so many things are scarcely, and not even scarcely perceived,
 quamvis idonei impulsus facti sint ab iis in organa sensuum,
although suitable impulses have been made by them upon the organs of the senses,
 vel si fuerint perceptæ quodammodo, quamvis minus accurate,
or if they have been perceived in any degree, although less accurately,
 (sup. sunt) statim traditæ oblivioni: hinc novæ res,
are immediately delivered (consigned) to oblivion: hence new things,
 cæteris paribus, (sunt) semper maximè observatæ, que novi sensus
other things being equal, are always most observed, and new sensations
 (sunt) validissimi: hinc sensus, sæpe repetiti, quamvis validi,
are the strongest: hence sensations, often repeated, although powerful,
 fiunt brevi familiares, et fere negliguntur: vero debiliores
become in a short time familiar, and commonly are neglected: but the weaker
 impulsus, qui tamen solebant dare satis validum
impulses, which nevertheless were accustomed to cause a sufficiently strong
 sensum, sæpe repetiti, neque percipiuntur omnino, neque relinquunt
sensation, frequently repeated, neither are perceived at all, nor do they leave
 ulla vestigia sui in animo.
any footsteps (traces) of themselves in the mind.

141. Sunt (ii) qui strenuè contendunt hominem, inter sentiendum,
There are they who stoutly contend that man, during thinking,
 semper contemplari tantum unicum sensum vel perceptionem externæ
always contemplates only a single sensation or perception of an external
 rei; sed (hominem) ire atque redire tam facile que tam subito, quodam
object; but that he goes and returns so easily and so suddenly, in some
 modo ad suum arbitrium, ab uno ad alium sensum, ut, primo
degree at his own pleasure, from one to another sensation, that, at first
 intuitu, videatur sibi capere simul multos (sc. sensus)
sight, he may seem to himself to take together (comprehend) many.

Sed hoc est minus certum.
But this is not certain.

142. Vero est certissimum hominem sæpe percipere simul plures
But it is very certain that a man often perceives at the same time several
 sensus ejusdem generis, dummodo hi possint ita conjungi et misceri
sensations of the same kind, provided these can be so joined and be mixed
 quasi ut efficiant unam perceptionem diversam a singulis (sc.
it were that they produce a single perception different from the individual
 perceptionibus), et compositam ex iis. Hæc conjunctio potest fieri
ones, yet compounded of them. This combination may be caused
 vel singulis impulsibus factis simul, vel novis impulsibus
either by single impulses made at the same time, or by new impulses

140. Hinc tot res vix ac ne vix quidem perceptæ, quamvis idonei impulsus facti sint, vel si quodammodo, quamvis minus accurate, perceptæ fuerint, statim oblivioni traditæ. Hinc novæ semper res, cæteris paribus, maxime observatæ, novique sensus validissimi. Hinc sæpe repetiti sensus, quamvis validi, brevi familiares fiunt, et fere negliguntur; debiliores vero impulsus, qui tamen sensum satis validum dare solebant, sæpe repetiti, neque omnino percipiuntur, neque ulla sui vestigia in animo relinquunt.

inter sentiendum unicum tantum sensum vel rei externæ perceptionem semper contemplari; sed tam facile tamque subito ad suum quodammodo arbitrium ab uno ad alium sensum ire atque redire, ut primo intuitu multos simul capere sibi videatur.—Sed hoc minus certum est.

142. Certissimum vero est hominem sæpe plures sensus ejusdem generis simul percipere, dummodo hi ita conjungi et quasi misceri possint, ut unam perceptionem, a singulis diversam, et ex iis compositam, efficiant. Hæc conjunctio fieri potest vel singulis impulsibus simul factis, vel novis impulsibus prioribus

succedentibus prioribus tam subito, ut prior sensus
succeeding to the former so suddenly, that the former sensation
 nondum desiverit, cum posterior jam inceperit; enim
shall not yet have ceased, when the latter shall have already begun; for
 sensus sæpe durat diutius quam impulsus ipse, præsertim si idonea
the sensation often lasts longer than the impulse itself, especially if the suitable
 attentio animi fuerit adhibita. Musica compositio sonorum
application of the mind have been afforded. The musical composition of sounds
 docet; charta tincta variis coloribus docet, quæ (charta), rapide
teaches this. paper stained with various colours teaches, which, rapidly
 acta in circulum, exhibet eundem medium vel mixtum colorem,
driven (whirled) into a circle, exhibits the same mean or mixed colour,
 compositum ex aliis, ac colores ipsi mixti efficient.
compounded of the others, as the colours themselves mixed would produce.
 Odores quoque et sapes, accipiunt, singuli, suo
Odours also and tastes, admit, (are susceptible of), each, in their own
 genere, pares compositiones, aliæ (sc. compositiones) quarum reperiuntur
kind, similar combinations, some of which are found
 gratæ, aliæ ingratisimæ. Hoc fundamento, saltem ex magna
agreeable, others very unpleasant. Upon this foundation, at least in a great
 parte, ars coqui et unguentarii nititur. Vero perceptiones
measure, the art of the cook and of the perfumer depends. But the perceptions
 sive sensus quos tactus dat, sunt tot que tam
or sensations which touch produces, are so many (so numerous) and so
 diversi, ut queant vix conjungi ita ut efficiant
different, that they can scarcely be combined so that they may produce (so as to
 unum, quasi, medium vel compositum sensum.
produce) a single, as it were, mean or compound sensation.

143. Ex quavis externâ causâ, nimirum impulsu facto
From any external cause, for example, from an impulse made
 certâ vi in organum sensûs, et durante certum tempus,
with a certain force upon an organ of sense, and lasting a certain time,
 sensus poterit esse varius, propter multas internas res, proprias
sensation will be various, on account of many internal things, peculiar
 sentienti corpori, que multas partes quæ sunt necessariae ad
to the sentient body, and the many parts which are necessary to
 efficiendum sensum. Imprimis, ratio animi, quod ad
produce the sensation. In the first place, the state of the mind, as to
 attentionem, est habenda; tum quoque cerebri, quod ad delirium,
attention, is to be considered; as well also of the brain, as to delirium,
 torporem, somnum, vigiliam, &c.; tum nervorum qui adeunt
torpor, sleep, waking, &c.; as of the nerves which go to (supply)

tam subito succedentibus, ut prior sensus nondum desiverit, cum posterior jam inceperit. Sensus enim sæpe diutius quam ipse impulsus durat, præsertim, si idonea adhibita fuerit animi attentio (136, 137.) Docet sonorum compositio musica; docet charta variis coloribus tincta, quæ rapide in circulum acta, eundem colorem medium vel mixtum, et aliis compositum, exhibet, ac ipsi colores mixti efficient. Odores quoque et sapes, singuli, ut videtur, suo genere, pares compositiones accipiunt; quarum aliæ gratæ, aliæ ingratisimæ reperiuntur. Hoc fundamento, magna saltem ex parte, nititur ars coqui et unguentarii. Per-

ceptiones vero sive sensus quos tactus dat, tot tamque diversi sunt, ut vix ita conjungi queant ut unum, quasi medium vel compositum, sensum efficiant.

143. Ex causa quavis externa, impulsu nimirum in organum sensus certa vi facto, et certum tempus durante, varius esse poterit sensus propter multas res internas corpori sentienti proprias, multasque partes quæ ad sensum efficiendum necessariae sunt. Animi imprimis ratio habenda est, quod ad attentionem; tum quoque cerebri, quod ad delirium, torporem somnum, vigiliam, &c.; tum nervorum qui organum sentiens adeunt, prout integri, liberi

sentiens organum, prout fuerint integri, liberi, sani, vel prout
the sentient organ, as they shall be perfect, free, healthy, or as
 (fuerint) compressi, ve aliter læsi; tum finium
(they shall be) compressed, or otherwise injured: then of the ends (extremities)
 nervorum organi ipsiûs, prout fuerint magis ve minus sentientes,
of the nerves of the organ itself, as they shall be more or less sentient,
 vel a primâ fabricatione corporis, vel ab aliis
either from the original structure (conformation) of the body, or from other
 impulsibus factis antea, vel a calore aut frigore, vel a statu
impulses made before, or from heat or cold, or from the condition
 vasorum vehentium sanguinem, quæ (vasa) inseparabilia comitantur
of the vessels carrying the blood, which inseparable accompany
 minutas nervosas fibras, que quæ possint vel laxari vel distendi
the minute nervous fibres, and which may either be relaxed or be distended
 præter solitum, vel demum inflammari; tum denique oportet, habere
unusually, or finally be inflamed; then lastly it behoves to consider
 rationem partium, qualescunque fuerint, quæ tegunt et defendunt
the nature of the parts, whatever kind they shall be, which cover and defend
 tenuissimos et acerrime sentientes fines nervorem, et vel augent
the very thin and very acutely sentient extremities of the nerves, and either increase
 vel temperant vim impressionum. Quales sunt cuticula ubique
or moderate the force of impressions. Such are the cuticle every where
 corporis, auris, tum externa tum interna, que uterque
(throughout) (of) the body, the ear, as well external as internal, and both
 meatus ejûs; et demum varii humores oculi.
meatus of it; and lastly the various humours of the eye.

144. Porro nonnulli sensus oriuntur a multis internis causis,
Moreover some sensations arise from many internal causes,
 quâ externâ (sc. causâ) aut juvante aut concurrente. Mens ipsa
no external one either assisting or concurring. The mind itself
 conscia sui et varii status ejûs, cogitatio,
conscious of itself (in self-possession), and the various states of it, thinking,
 memoria, imaginatio, voluntas, omnes affectus, possunt referri huc
memory, imagination, volition, all affections, may be referred hither
 (to this head). Tum quoque varii status corporis, vigor, debilitas,
As well also various states of the body, vigour, debility,
 alacritas, torpor, lassitudo, dolor, anxietas, pruritus, appetitus, veluti fames
alacrity, torpor, lassitude, pain, anxiety, itching, appetites, as hunger
 et sitis; demum, multæ propensiones, quales impellunt ad tussim,
and thirst; lastly, many inclinations, such as impel to cough,
 vomitum, evacuandum alvum, et similia. Vero solemus referre
vomiting, to evacuate the belly, and the like. But we are wont to refer

ni, vel prout compressi, aliterve læsi fuerint; tum finium nervorum ipsius organi, prout magis minusve sentientes fuerint, vel a primâ corporis fabricatione, vel ab aliis impulsibus factis antea, vel a calore aut frigore, vel a statu vasorum sanguinem vehentium, quæ minutas nervosas fibras comitantur inseparabilia, æque vel præter solitum laxari vel distendi, demum inflammari possunt: tum denique partium, qualescunque fuerint, rationem habere oportet, quæ fines nervorum tenuissimos acerrime sentientes tegunt et defendunt, et hinc impressionem vel augent vel temperant. Quales sunt cuticula ubique corporis, auris

tum externa tum interna, ejusque meatus uterque; et varii demum oculi humores.

144. Porro a multis causis internis, nulla aut juvante aut concurrente externa, sensus nonnulli oriuntur. Ipsa mens sui conscia, et varii ejus status, cogitatio, memoria, imaginatio, voluntas, affectus omnes, hinc referri possunt. Tum quoque varii corporis status, vigor, debilitas, alacritas, torpor, lassitudo, dolor, anxietas, pruritus, appetitus, veluti fames et sitis, propensiones demum multas, quales ad tussim, vomitum, alvum evacuandam, et similia, impellunt. Plerosque vero horum sensuum, qua-

plerosque horum sensuum, quatenus sunt corporei, ad sensum
most of these sensations, inasmuch as they are corporeal, to the sense
 tactus.
of touch.

145. Sensus tum externi tum interni, nunquam relati sunt
The sensations, as well external as internal, never have been referred
 accurate ad classes vel genera. Vero externi (sc. sensus), semper et
accurately to classes or genera. But the external, always and
 ubique, referuntur ad quinque genera, nempe visum, auditum, olfactum,
every where, are referred to five kinds, namely seeing, hearing, smelling,
 gustum, et tactum. Quod spectat (ad) quatuor priores (sc. sensus) paucae
tasting, and touching. What (as) concerns the four former the few
 qualitates externorum corporum, quas (qualitates) unusquisque eorum
qualities of external bodies, which each one of them
 percipit reducuntur facile in classes diversas invicem a
perceives are reduced easily into classes differing in turn (mutually) from
 se, et referuntur ad unum et proprium sensum:
themselves (from each other), and are referred to a single and peculiar sense:
 imprimis, quia sensus ipse habet singulare et proprium organum,
in the first place, because the sense itself has a single and peculiar organ,
 neque insidet (sc. sensus) alibi in corpore, aut potest excitari quivis
neither does it reside elsewhere in the body, or can it be excited in any
 modo; quoque tum quia organum sensus afficitur ab uno
manner; also as well because the organ of sensation is affected by one
 genere impulsus, veluti lucis, tremorum aeris, volatilium particularum;
kind of impulse, as of light, of tremors of the air, of volatile particles;
 denique, tum quia perceptiones ex singulis istorum sensuum,
finally, also because the perceptions from each of those senses,
 quantumvis videantur differre inter se, semper habent aliquid
however they may seem to differ between themselves, always have something
 commune, ita ut possint comparari, que similitudines et differentia
common, so that they can be compared, and the likenesses and differences
 earum (sc. perceptionum) detegi.
of them be detected.

146. Hoc est verissimum de rebus quas (res) aures, nares, vel
This is very true concerning the things which the ears, nostrils, or
 lingua percipiunt: vero oculi capiunt plures res, que eas satis
tongue perceive; but the eyes take in many things, and these sufficiently
 dissimiles; scilicet, colorem, figuram, magnitudinem, et motum. Tamen,
dissimilar; namely, colour, figure, magnitude, and motion. Nevertheless,
 omnes hæ perceptiones referuntur facile ad unum sensum, quia
all these perceptions are referred easily to a single sense, because

teus corporei sunt, ad sensum tactus referre solemus.

145. Sensus, tum externi, tum interni, nunquam accurate ad classes vel genera relati sunt. Externi vero, semper et ubique ad quinque genera referuntur, nempe visum, auditum, olfactum, gustum et tactum. Quod priores quatuor spectat, paucae corporum externorum qualitates, quas unusquisque eorum percipit, facile in classes a se invicem diversas reducuntur, et ad unum et proprium sensum referuntur. Imprimis, quia sensus ipse singulare et proprium organum habet, neque alibi in corpore insidet, aut quivis modo excitari potest; tum

quoque quia sensus organum ab uno genere impulsus afficitur, veluti lucis, tremorum aëris particularum volatilium; tum denique quia perceptiones ex singulis istorum sensuum quantumvis inter se differre videantur, aliquid semper commune habent, ita ut comparari possint earumque similitudines et differentia detegi.

146. Hoc verissimum est de rebus quas aures nares, vel lingua percipiunt. Oculi vero plures res capiunt, easque satis dissimiles; colorem scilicet, figuram, magnitudinem et motum. Omnes tamen hæ perceptiones ad unum sensum facile referuntur, quia per idem organum

percipluntur per idem organum, que idem medium, ut vocatur, *they are perceived through the same organ, and the same medium, as it is called,* que (per) idem genus impulsûs. Autem reliquæ perceptiones, utcunque and the same kind of impulse. But the remaining perceptions, however dissimiles fuerint, referuntur ad sensum tactûs. *dissimilar they may be, are referred to the sense of touch.*

147. Plerique sensus reperuntur vel grati vel ingrati: scilicet, *Most sensations are found either pleasant or unpleasant: that is to say,* non modo monent (nos) de externis rebus, que representant nobis *not only do they warn us about external things, and represent to us* qualitates earum, sed simul ita afficiunt animum, ut vel *the qualities of them, but at the same time so affect the mind, that either* cupiamus vel nolimus eosdem sensus continuari aut repeti. *we desire or we are unwilling that the same sensations be continued or repeated.*

148. In quibusdam exemplis sensuum, sensus ipse, (scilicet *In some examples of the sensations, the sensation itself, (that is* mutatio quæ efficitur in statu animi,) est jucundus, et *the change which is produced in the state of the mind,) is pleasant, and* voluptas nascitur ab eo solo: vero in aliis exemplis, non tantum *the pleasure arises from it alone; but in other examples, not so much* sensus quam perceptio, (nimirum, qualitas seu conditio externæ *the sensation as the perception, (namely, the quality or condition of the external* rei quam percipimus, et cognoscimus ope sensûs,) dat *thing which we perceive, and know by the aid of the sense,) gives* voluptatem. *the pleasure.*

149. Exempla prioris generis sunt, jucundi sensus seu voluptates *Examples of the former kind are, the pleasant sensations or pleasures* quas gustus, olfactus, auditus, suggerunt nobis; quibus oportet adjuungere *which taste, smell, hearing, supply to us; to which it behoves to add* quosdam sensus, veluti caloris, quos tactus dat. Nimirum, in his *certain sensations, as of heat, which touch gives. Doubtless, in these* exemplis, attendimus ad sensum solum, neque docemur quicquid ab *examples, we attend to the sensation alone, nor are we taught any thing by* eo (sc. sensû) de causâ seu qualitate externi corporis quæ efficit *it of the cause or the quality of the external body which produces* sensum. Si novimus quid istiusmodi, plane didicimus *the sensation. If we know any thing of that sort, evidently we have learned* id ope aliorum sensuum et iudicii, observando, periclitando, *it by the aid of the other senses and the judgment, by observing, by experiencing,* ratiocinando. *by reasoning.*

idemque medium, ut vocatur, idemque genus impulsus, percipiuntur. Reliquæ autem perceptiones, utcuque dissimiles fuerint, ad sensum tactus referuntur.

147. Sensus plerique vel grati vel ingrati reperuntur: scilicet non modo nos de rebus externis monent, earumque qualitates nobis representant, sed animum simul ita afficiunt, ut eosdem sensus vel cupiamus vel nolimus continuari aut repeti.

148. In quibusdam exemplis, sensus ipse, mutatio scilicet quæ in animi statu efficitur, jucundus est, et ab eo solo voluptas nascitur. In aliis vero exemplis, non tantum sen-

sus quam perceptio, qualitas nimirum seu conditio rei externæ quam percipimus et sensus ope cognoscimus, voluptatem dat.

149. Prioris generis exempla sunt, jucundi sensus seu voluptates quas gustus, olfactus, auditus, nobis suggerunt: quibus adjuungere oportet sensus quosdam, veluti caloris, quos tactus dat. In his nimirum exemplis, ad sensum solum attendimus; neque ab eo quicquid docemur de causa, seu qualitate corporis externi, quæ sensum efficit. Siquid istiusmodi novimus, id, ope aliorum sensuum et iudicii, observando, periclitando, ratiocinando, plane didicimus.

150. Exempla posterioris (sc. generis) sunt, quædam jucundæ perceptiones
Examples of the latter are, certain agreeable perceptions
 externarum qualitatum rerum, quas (sc. qualitates) vel visus vel tactus
of the external qualities of things, which either the sight or touch
 suggerunt nobis: veluti omnis visibilis pulchritudinis, formæ, proportionis,
supply to us: as of all visible beauty, of form, of proportion,
 motûs et forsitan coloris quoque; vel, denique, tactilis formæ
of motion and perhaps of colour also; or, lastly, of tangible shape
 aut lævoris, aut mollitiæ. In his exemplis scilicet perceptio
or smoothness, or softness. In these examples doubtless the perception
 ipsa placet, que sensu neglecto, seu statu animi
itself pleases, and the sensation being neglected, or the state of the mind
 mutato, transimus statim ad rem seu qualitatem quam ille
being changed, we pass immediately to the thing or quality which that
 sensus suggerit, que sæpe contemplamur eam cum voluptate.
sensation supplies, and often contemplate it with pleasure.

151. Profecto videtur difficillimum (sc. negotium) explanatu, cur
Truly it seems very difficult to be explained, why
 tot diversi sensus oriantur a variis generibus impressionum
so many different sensations can arise from various kinds impressions
 factarum in certa organa corporis. Autem est multo difficilius
made upon certain organs of the body. But it is much more difficult
 explanatu cur ab fere omni genere impressionum in varia
to be explained why from almost every kind of impressions upon the various
 organa corporis, tales sensus excitentur, quales non modo
organs of the body, such sensations should be excited, as not only
 representaverint animo singuli suam perceptionem, sed simul
shall represent to the mind each their own perception, but at the same time
 vel delectaverint eundem plurimum, vel affecerint insigni
either (shall) delight the same very much, or (shall) affect it) with remarkable
 dolore, angore, molestia, fastidio.
grief, vexation, uneasiness, loathing.

152. Enim sensus, utcunque diversi inter se secundum
For sensations, however different among themselves according to
 varia organa eorum (sensuum) que res quæ afficiunt hæc
the various organs of them and the things which affect them
 (sc. organa) tamen sunt constantes, que singuli semper agnoscunt
nevertheless are constant, and each always acknowledge
 easdem causas, neque eadem impressio dat eidem homini varium
the same causes, nor does the same impression give to the same man a different
 sensum seu perceptionem, variis temporibus; neque ulla ratio
sensation or perception, at various times; nor does any reason

150. Posterioris exempla sunt, perceptiones quædam jucundæ qualitatum rerum externarum, quas vel visus vel tactus nobis suggerunt: veluti pulchritudinis omnis visibilis, formæ, proportionis, motus, et forsitan coloris quoque; vel denique formæ tactilis, aut lævoris, aut mollitiæ. In his scilicet exemplis, perceptio ipsa placet: neglectoque sensu, seu mutato animi statu, ad rem, seu qualitatem, quam sensus ille suggerit, statim transimus, eamque sæpe cum voluptate contemplamur.

151. Difficillimum profecto explanatu videtur, cur tot diversi sensus a variis impressionum generibus in certa corporis organa factarum

oriantur (145, 146.) Multo autem difficilius explanatu est, cur ab omni fere genere impressionum in varia corporis organa, tales excitentur sensus, quales non modo suam singuli perceptionem (130, 131) animo representaverint, sed eundem simul vel plurimum delectaverint, vel insigni dolore, angore, molestia, fastidio, affecerint.

152. Sensus enim, utcunque inter se secundum varia eorum organa, resque quæ hæc afficiunt, diversi, tamen constantes sunt, easdemque semper singuli causas agnoscunt; neque eidem homini, variis temporibus, eadem impressio varium dat sensum seu perceptionem; neque

existit, cur credamus eandem rem seu impressionem dare
exist, why we should believe that the same thing, or impression produces
 diversum sensum aut perceptionem diversis hominibus, nisi in
a different sensation or perception in different men, except in
 nonnullis rarissimis exemplis, in quibus est verisimile aliquod vitium,
some very rare examples, in which it is probable that some defect,
 neque sane leve (vitium) subesse in corpore, vel saltem organa
nor truly a slight one, exists in the body, or at least that the organs
 sensuum hujus (sc. corporis) alienari multum a solito et naturali
of the senses of it are altered much from the usual and natural
 statu.
state.

153. Vero voluptas, vel molestia, vel fastidium, quæ comitantur
But the pleasure, or uneasiness, or loathing, which accompany
 tot sensus, variant quam maxime, cum in variis hominibus,
so many sensations, vary the most possible, as well in different men,
 tum in iisdem (sc. hominibus) variis temporibus.
as in the same at various times.

154. Vis consuetudinis in voluptates aut molestias sensus
The influence of custom (habit) upon the pleasures or uneasiness of sensation
 est quoque insignis et fere incredibilis; autem exigua in
is also remarkable and almost incredible; but small (trifling) upon
 sensum ipsum, et nulla omnino in perceptionem qualitatis,
the sense itself, and none at all upon the perception of the quality,
 externæ rei quam sensus suggerit. Enim nemo sanus, (ment.),
of the external object which the sense suggests. For no one sound in mind,
 vel naturâ vel ullâ consuetudine potest percipere durum
either by nature or by any custom (habituation), can perceive hard
 pro molli, aut rubrum pro viridi, aut mel pro absinthio: quamvis,
for soft, or red for green, or honey for wormwood: although,
 vel singulari constitutione corporis, vel demum
either by the singular (peculiar) constitution of the body, or lastly
 consuetudine solâ, ista amarissima herba possit fieri gratior et
by custom alone, that very bitter herb may become more grateful and
 jucundior gustui Hymettio melle.
more pleasant to the taste (palate) than Hymettian honey.

155. Quamvis plerique sensus sint plus (ve) minus grati, tamen
Although most sensations are more or less grateful, nevertheless
 non (nobis) est negandum insigne discrimen intercedere inter
we must not deny that a remarkable difference goes (exists) between
 eos de hac re, et alios esse naturâ
them concerning this thing (in this respect), and that some are by nature (naturally)

ratio ulla existit, cur credamus eandem rem seu impressionem diversis hominibus sensum aut perceptionem dare, nisi in nonnullis rarissimis exemplis, in quibus verisimile est vitium aliquod, neque sane leve, in corpore subesse, vel hujus saltem sensuum organa a solito et naturali statu multum alienari.

153. Voluptas vero, vel molestia, vel fastidium, quæ tot sensus comitantur, variant quam maxime, cum in variis hominibus, tum in iisdem, variis temporibus.

154. Insignis quoque, et fere incredibilis, est vis consuetudinis in voluptates aut molestias

sensus; exigua autem in sensum ipsum, et nulla omnino in perceptionem qualitatis rei externæ quam sensus suggerit. Nemo enim sanus, vel natura vel ulla consuetudine, durum pro molli, aut rubrum pro viridi, aut mel pro absinthio, aut absinthium pro melle, percipere potest: quamvis vel singulari corporis constitutione, vel demum sola consuetudine, amarissima ista herba Hymettio melle gratior et jucundior gustui fieri possit.

155. Quamvis sensus plerique plus minus grati sint, tamen non est negandum, insigne eos inter hac de re discrimen intercedere, et

gratissimos fere omnibus hominibus, alios valde ingratos; demum, *very agreeable almost to all men, others very unpleasant; lastly,* nonnullos adeo indifferentes, ut dent neque voluptatem, neque *some so indifferent that they produce (as to give) neither pleasure, nor* ullam molestiam. Nulla ratio discriminum sensuum hujusmodi *any uneasiness. No explanation of the differences of sensations of this sort* est reddita hactenus. *has been given hitherto.*

156. Tamen, est quoddam novisse fere unumquodque genus *However, it is something to know that almost each kind* sensuum, esse vel gratum vel ingratum, naturâ ejûs (sc. generis) *of the sensations is either grateful or ungrateful, the nature of it* nil mutatâ, secundum vehementiam ipsiûs (sc. sensûs.) Enim *being no way changed, according to the vehemence of itself. For* nullus sensus existit adeo jucundus, quin intensus ultra modum, *no sensation exists so pleasant, but that stretched beyond bounds,* evadat ingratus, nonnunquam fere intolerabilis. Et omnino, *it may become ungrateful, sometimes almost intolerable. And altogether,* contra, (ii) qui naturâ, que solitâ vehementiâ offendunt *on the other hand, they which by nature, and in the usual vehemence offend* multum, facti leviores, sæpe fiunt tolerabiles, et interdum admodum *much, made slighter, often become tolerable, and sometimes very* jucundi. *pleasant.*

157. Ratio est fere par quod multi sensus, primo grati *The reason is almost similar that many sensations, at first pleasant* cessent delectare, si fuerint repetiti sæpius, quamvis fuerint *cease to delight, if they have been repeated too often, although they (shall) be* ejusdem naturæ et vehementiæ, quantum attinet impressionem ipsam; *of the same nature and intensity, as far as regards the impression itself;* et multi, primo ingrati, desinant displicere, et tandem placeant, *and many, at first unpleasant, cease to displease, and at length please,* quamvis neque naturâ neque vehementiâ impressionis, fuerint *although neither in nature (kind) nor in intensity of impression, shall they be* mutatæ vel minimum. Scilicet, sensus sæpe repetiti, facti *changed even in the least. That is to say, sensations often repeated, (having) become* familiares consuetudine solâ, percipiuntur segnius, et tandem negliguntur *familiar by custom alone, are perceived more slowly, and at length are neglected* penitus, nullâ attentione animi adhibitâ. *entirely, no attention of the mind being afforded.*

158. Hinc quoque ratio potest reddi cur novi sensus fere *Hence also the explanation can be given why new sensations commonly*

alios natura fere omnibus hominibus esse gratissimos, alios valde ingratos, nonnullos demum adeo indifferentes, ut neque voluptatem neque molestiam ullam dent. Hujusmodi sensuum discriminum ratio nulla hactenus reddita est.

156. Est quoddam tamen novisse, unumquodque fere sensuum genus, vel gratum esse, vel ingratum, naturâ ejus nil mutatâ, secundum ipsius vehementiam. Nullus eum existit sensus adeo jucundus, quin ultra modum intensus, ingratus evadat, nonnunquam fere intolerabilis. Et contra omnino, qui natura, solitaque vehementia, multum offendunt, le-

viores facti, tolerabiles sæpe fiunt, et interdum admodum jucundi.

157. Par fere ratio est quod multi sensus, primo grati, delectare cessent, si sæpius repetiti fuerint, quamvis semper ejusdem naturæ et vehementiæ fuerint, quantum ipsam impressionem attinet; et multi primo ingrati displicere desinant, et tandem placeant, quamvis neque natura neque vehementia impressionis vel minimum mutatæ fuerint. Scilicet, sola consuetudine familiares facti, sensus sæpe repetiti, segnius percipiuntur (140), et tandem negliguntur penitus, nulla animi attentione adhibita.

placeant magis; cur varietas (est) adeo jucunda; cur cupiamus
please more; why variety is so charming; why we desire
 validiores sensus, vel saltem impressiones in organa cujuslibet
more powerful sensations, or at least impressions upon the organs of any
 sensus, ut augeamus aut continuemus voluptatem:
sense, that we may increase or continue (to increase or continue) the pleasure;
 cur attendamus vix, ac ne quidem vix, ad tot voluptates,
why we attend scarcely, and not even scarcely, to so many pleasures,
 neque fere sciamus tales (voluptates) extitisse antequam amiserimus
nor generally do we know that such existed before that we have lost
 eas; cur pueris (sup. sunt hic pro "habent" ponitur) præ senibus
them; why boys have before old men
 tot voluptates que tam constantes et puræ,
(in preference to old men) so many pleasures and so constant and pure,
 que ideo tanta et tam continua hilaritas animi. Enim
and consequently so great and such continual cheerfulness of mind. For
 quantumcunque voluptatis (homo), subito donatus novâ facultate
whatsoever, of pleasure a person, suddenly gifted with a new faculty
 sentiendi, aut cæcus redditus denuo visui, haberet, tantum
of perceiving, or a blind person restored again to sight, would have, so much
 omnes olim habuimus, ab omnibus sensibus, quamvis longus usus
we all formerly have had, from all the senses, although long use
 et consuetudo jam pene deleverint istam voluptatem.
and custom (have) now almost destroyed that pleasure.

159. Plerique sensus, satis validi ut distinguantur
Many sensations, sufficiently powerful that they can be distinguished
 facile et accurate, quisque suo genere et modo,
(to be distinguished) easily and accurately, each one in its own kind and manner,
 fere placent maxime. Autem varia genera voluptatum existunt;
generally please most. But various kinds of pleasures exist;
 que igitur varii sensus possunt delectare animum variis modis.
and therefore various sensations can delight the mind in various ways.
 Neque profecto aut splendor solis, aut pulchra et vivida
Nor truly do either the splendour of the sun, or the beautiful and vivid
 meridiana facies totius Naturæ, sola delectant oculos hominum, neque
meridian face of all Nature, alone delight the eyes of men, nor
 concentus soli aures eorum scilicet (sup. sunt ii) qui longe
harmonies alone the ears of them that is to say there are who with a far
 diversâ, sed tamen haud exiguâ voluptate, spectant obscura
different, but nevertheless no small pleasure, view the obscure
 templa Numinis, et adeunt umbrosos lucos per lunam,
temples of the Deity, and go to (approach) the shady groves by moonlight,

158. Hinc quoque ratio reddi potest, cur novi sensus fere magis placeant; cur varietas adeo jucunda: cur validiores sensus, vel saltem impressiones in organa sensus cujuslibet, cupiamus, ut voluptatem vel augeamus vel continuemus; cur ad tot voluptates vix ac ne vix quidem attendamus, neque fere tales ante extitisse sciamus quam eas amiserimus; cur tot voluptates, tamque constantes et puræ, tantaque ideo et tam continua animi hilaritas, pueris præ senibus. Quantum enim cunque voluptatis, nova sentiendi facultate subito donatus, aut cæcus visui denuo redditus, haberet, tantum, omnes, ab omnibus sensibus olim ha-

buiamus, quamvis longus usus et consuetudo istam voluptatem jam pene deleverint.

159. Sensus plerique satis validi, ut facile et accurate distinguantur, suo quisque genere et modo, fere placent maxime. Varia autem existunt voluptatum genera; variique igitur sensus variis modis animum delectare possunt. Neque profecto aut splendor solis, aut pulchra et vivida totius Naturæ facies meridiana, sola hominum oculos, neque magni concentus soli aures eorum delectant; scilicet qui longe diversa, sed tamen haud exigua voluptate, obscura Numinis templa spectant, et umbrosos lucos per lunam adeunt, noctisque demum nigran-

que demum, lubentes contemplantur nigram formidinem noctis; et
and finally, willing contemplate the black fear (horror) of night; and
 auscultant zephyrum agitantem sylvas, aut susurrum apum,
listen to the west-wind agitating the woods, or the humming of the bees,
 aut murmur fluminis. Quin est et tempus, quo tenebræ,
or the murmur of a river. But there is also a time, in which darkness,
 silentiæ, que, demum, absentia omnis sensûs, sola (neuter plural) placent.
silence, and, finally, the absence of all sensation, alone please.

160. Igitur, voluptatibus sensuum sunt (pro habent) sui limites,
Therefore the pleasures of the senses have their own bounds,
 et quidem satis arcti; quippe quæ possint neque augeri
and indeed sufficiently narrow; as being which can neither be increased
 multum neque repeti nimis sæpe, neque produci, aut continuari
much nor be repeated too often, nor be produced, or be continued
 diu: quasi Natura ipsa hoc modo moneret, hominem esse natum
long: as if Nature herself in this way would admonish, that man was born
 non voluptatibus solis, saltem non voluptatibus hujusmodi; enim
not for pleasures alone, at least not for pleasures of this kind; for
 languor aut fastidium abrumpunt omnes nimis cultas; tandem
languor or loathing break off all (when) too much worshipped; at length
 insignis molestia aut dolor excipiunt nonnullas. Et profecto, ut
remarkable irksomeness or pain take off some. And truly, as
 voluptas transit tam facile in molestiam aut dolorem, sic, fere
pleasure passes so easily into trouble or pain, so almost
 pari ratione, subita cessatio doloris, saltem magni
for an equal (similar) reason, the sudden cessation of pain, at least of great (pain,)
 est aliquando incredibilis voluptas, qualis nimirum, si esset
is sometimes an incredible pleasure, such as doubtless, if there were
 facultas emendi minore (majore?) aut quovis alio pretio,
the faculty of purchasing (it) at a less, or at any other price,
 certe emptores non deessent. Voluptas et dolor (ut pulchra
certainly purchasers would not be wanting. Pleasure and pain (as the beautiful
 fabula Socrates docet,) fuerunt sorores, utcunque dissimiles que
fable of Socrates teaches,) were sisters, however unlike and
 expertæ diversam sortem; nimirum, altera optata et grata
that experienced a different lot; namely, the one wished-for and acceptable
 omnibus, altera pariter invida; quas tamen Jupiter ita sociavit et
to all, the other equally hated; whom however Jupiter so associated and
 conjunxit tam indissolubili vinculo, ut, quamvis naturâ contrarias,
linked in so indissoluble a chain, that, although by nature opposite,

formidinem libentes contemplantur; et zephyrum sylvas agitantem, aut apum susurrum, aut fluminis murmur, auscultant. Quin et tempus est, quo tenebræ, silentium, omnisque demum sensus absentia, sola placent.

160. Sui igitur sunt, et quidem satis arcti, limites voluptatibus sensuum; quippe que neque multum augeri, neque nimis sæpe repeti, neque diu produci aut continuari possint: quasi ipsa Natura hoc modo moneret, non solis voluptatibus, saltem non hujusmodi voluptatibus, hominem esse natum: omnes enim nimis cultas languor aut fastidium abrumpunt; nonnullas insignis molestia aut dolor tandem excipiunt. Et profecto, ut voluptas in molestiam

aut dolorem tam facile transit, sic, pari fere ratione, doloris, saltem magni, cessatio subita, incredibilis aliquando voluptas est, qualis nimirum, si minore aut alio quovis pretio emendi facultas esset, certe non deessent emptores. Voluptas et Dolor, ut pulchra Socratis fabula docet, sorores fuerunt, utcunque dissimiles, diversamque sortem expertæ; altera nimirum optata et grata omnibus, altera pariter invida; quas tamen Jupiter ita sociavit, et tam indissolubili vinculo conjunxit, ut quamvis natura contrarias, et diverse spectantes, quicunque alterutram amplectitur, alteram trahat simul.

et spectantes diverse quicumque amplectitur alteram,
and looking differently (different ways), whosoever embraces the one,
 trahat simul alteram (sororem.)
draws at the same time the other.

161. Autem de hac re magna differentia observatur inter varias
But upon this subject a great difference is observed between the various
 facultates sentiendi, quæ varias voluptates quas dant: quædam
faculties of perceiving, and the various pleasures which they give; some
 fatiscunt brevi, neque distinguunt bene res quas
wearry in a short time, neither do they distinguish well the things which
 debent, neque delectantur amplius rebus ipsis quas
they ought, nor are delighted longer with the things themselves which
 distinguunt satis, et quæ primo fuerant gratissimæ; aliæ
they do distinguish sufficiently, and which at first had been very agreeable; others
 valent diutius ad sua munera, et fruuntur magis diuturnâ
are able (adequate) longer for their functions, and enjoy a more lengthened
 voluptate. Sic, olfactus et gustus fere satiantur brevi;
pleasure. Thus, the smell and taste generally are satiated in a short time;
 auditus tardius; visus longe tardissimè omnium externorum
hearing more slowly; sight by far the most slowly of all the external
 sensuum: autem voluptates quæ derivantur a mente solâ seu
senses: but the pleasures which are derived from the mind alone or
 internis sensibus sunt maxime longævæ omnium. Demum, possumus
internal senses are the most lasting of all. Finally, we can
 producere haud parum omnes voluptates, variando eas,
prolong not a little (to a great extent) all pleasures, by varying them,
 quæ miscendo alias cum aliis, vel sæpe interponendo res minus
and by mixing some with others, or often by interposing things less
 gratas, iis quæ delectant magis, ita ut ne quid sit
agreeable with those which delight more, so that nothing (no one) be
 nimis.
overmuch (in excess.)

162. Et quædam aliæ res supersunt, plane diversæ a (rebus)
Also some other things remain, evidently different from those things
 jam memoratis quæ regunt multum nonnullas voluptates
now mentioned which govern much (much influence) some pleasures
 sensuum; nimirum, variæ conditiones vel universi corporis,
of the senses; that is to say, the various conditions either of the whole body,
 præsertim nervorum, vel quorundam organorum aut functionum
especially of the nerves, or of certain organs or of functions
 præ aliis, quibus functionibus, quædam organa sensûs,
in comparison with others, to which functions, certain organs of sense,

161. Magna autem hac de re inter varias sentiendi facultates, variasque quæ dant voluptates, differentia observatur. Quædam brevi fatiscunt, neque res quas debent, distinguunt bene, neque amplius delectantur rebus ipsis quas satis distinguunt, et quæ primo gratissimæ fuerant; aliæ diutius ad sua munera valent, et magis diuturnâ fruuntur voluptate. Sic olfactus et gustus fere brevi satiantur; auditus tardius; visus omnium externorum sensuum longe tardissime. Voluptates autem quæ a sola mente seu sensibus internis derivantur, sunt omnium maxime longævæ. Omnes de-

num voluptates, eas variando, aliasque cum aliis miscendo, vel sæpe minus gratas res iis quæ magis delectant interponendo, ita ut ne quid nimis sit, haud parum producere possumus.

162. Supersunt et aliæ quædam res, a jam memoratis plane diversæ, quæ nonnullas sensuum voluptates multum regunt; variæ nimirum conditiones vel universi corporis, præsertim nervorum, vel quorundam præ aliis organorum aut functionum, quibus functionibus, organa quædam sensus, fortasse et sensus ipsi, magna ex parte, inserviunt. Et hæc inter

et fortasse sensus ipsi, ex magna parte, inserviunt.
and perhaps the sensations themselves, in a great measure, subserve (are subservient.)
 Et hæc est (causa) inter alias causas, quod multæ voluptates, et
And this is (a cause) one amongst other causes, that many pleasures, and
 quæ coluntur maxime, nequeant esse immortales. Pura aqua
which are worshipped the most of all, cannot be immortal. Pure water
 est sitientl pro nectare; omnis cibus gratissimus (homini)
is to one thirsting as nectar; every kind of food very grateful to a man
 esurienti etiam odor cibi (est) jucundus: frigus placet æstuanti
hungering even the odour of food is pleasant: cold pleases one burning
 aut febricitanti, calor frigenti. Vero eædem res sunt non
or labouring of fever, heat a cold person. But the same things are not
 modo non gratæ iisdem hominibus aliis temporibus, sed sæpe
only not grateful to the same men at different times, but often
 valde ingrata, veluti cibus aut potio, utcunque delicata, statim post
very unpleasant, as food or drink, however delicate, immediately after
 pastum aut potum; vel odor cibi statim post prandium
feeding or drinking; or the odour of food immediately after a repast:
 neque profecto possunt aut perpetuæ epulæ, aut alterum
nor truly can either constant banquets, or another (a second)
 prandium statim a primo, delectare perditissimum
repast immediately after the first (the previous one), delight the most abandoned
 helluonem: neque Venus ipsa semper placet etiam strenuissimis
glutton: nor does Venus herself always please even the most strenuous (devoted)
 cultoribus.
worshippers.

163. Quin voluptas aut molestia possunt oriri ab aliis sensibus et,
But pleasure or uneasiness may arise from other sensations also,
 præter illos qui fiunt ab externâ impressione: voluptas
besides those which take place from external impression: pleasure
 percipitur ab actione musculorum, quatenus hæc (actio) fuerit fortis,
is perceived from the action of the muscles, so far as this shall be strong,
 facilis, alacris; vero contrarii sensus, ab actione musculorum, nempe,
easy, free; but the opposite feelings, from the action of the muscles, to wit,
 hebetudinis, lassitudinis, difficultatis, debilitatis, sunt semper molesti:
of dullness, of lassitude, of difficulty, of debility, are always troublesome
 demum, varii status animi, affectus (ejus), variæ exercitationes
lastly, various states of the mind, affections of it, various exercises
 memoriæ, imaginationis, iudicii, fere pari ratione,
of the memory, of the imagination, of the judgment, nearly for a like reason,
 reperuntur nunc grati, nunc molesti.
are found one time agreeable, at another troublesome.

alias causas est, quod multæ, et quæ maxime coluntur, voluptates, immortales esse nequeant. Sidenti pura aqua pro nectare est; esurienti omnis cibus gratissimus, etiam cibi odor jucundus: æstuanti aut febricitanti frigus, frigenti calor, placet. Iisdem vero hominibus, aliis temporibus, eædem res non modo non gratæ sunt, sed sæpe valde ingrata, veluti cibus aut potio, utcunque delicatus, statim post pastum aut potum; vel odor cibi statim post prandium: neque profecto aut epulæ perpetuæ, aut alterum prandium statim a primo, perditissimum possunt delectare helluonem:

neque Venus ipsa, strenuissimis etiam cultoribus, semper placet.

163. Quin et ab aliis sensibus præter illos qui ab impressione externa (133, 144) fiunt, voluptas aut molestia oriri possunt: ab actione musculorum, quatenus hæc fortis, facilis, alacris, fuerit, neque ad fatigationem continuata, voluptas percipitur; contrarii vero ab actione musculorum sensus, hebetudinis nempe, lassitudinis, difficultatis, debilitatis, semper molesti sunt: varii demum animi status, affectus, exercitationes variæ memoriæ, imaginationis, iudicii, pari fere ratione, nunc grati nunc molesti reperiuntur.

164. Ex omnibus his est æquum, ut videtur, concludere Naturam
From all these it is reasonable, as it seems, to conclude that Nature
 providisse tanta benignitate et liberalitate hominibus, que suppeditasse
has provided with so much kindness and liberality for men, and has supplied
 tot voluptates iis, ut non modo viverent, sed fruerentur
so many pleasures for them, that not only should they live, but enjoy
 vitâ quam dedit.
the life which she gave.

165. Neque sane voluptates sensuum carent suis eximils
Nor truly do the pleasures of the senses want their own excellent
 usibus. Illa generalis suavitas quæ fere comitatur omnes sensus,
uses. That general sweetness which mostly accompanies all the sensations,
 præsertim primâ ætate, invitat nos ad exercendas probe varias
especially at the first age (infancy), invites us to exercise well the various
 facultates sentiendi, et sic acuendas (facultates) que simul
faculties of perceiving, and thus to sharpen them, and at the same time
 acquirendam nobismet quotidie plurimam utilissimam scientiam.
to acquire to ourselves daily a great deal of very useful knowledge.

166. Fere pari ratione, homines, præsertim pueri invitantur
Almost for a like reason, men, especially boys (children), are invited
 ad exercenda modice et crebro sua organa motûs, insita vis
to exercise moderately and frequently their organs of motion, the innate power
 quorum promovetur sic, et facilis et promptus usus discitur.
of which is promoted thus, and an easy and ready use is learned.

167. Quin et invitamur, præmio egregiæ voluptatis, ad quasdam
Moreover, we are invited, by the reward of exquisite pleasure, to certain
 actiones et maximi momenti, nimirum, qualibus aut singuli
actions, and of the greatest moment, that is to say, by such as either individual
 homines conservantur, aut humanum genus propagatur.
men are preserved, or the human race is propagated.

168. Postremo inducimur illâ voluptate quæ oritur a modicâ
In fine, we are induced by that pleasure which arises from a moderate
 exercitatione mentis ad exercendas et excolendas nobilissimas facultates
exercise of the mind to exercise and to cultivate the noblest faculties
 ejus (mentis), quæ (facultates) neglectæ et otiosæ sunt exiguæ, probe
of it, which (being) neglected and idle are small, well
 cultæ, fiunt pene divinæ.
cultivated, become almost divine.

169. Demum, singuli sensus quibus instruimur, tum externi
Lastly, the individual senses with which we are furnished, as well external
 tum interni, sunt obnoxii variis vitis; scilicet, unusquisque,
as internal, are liable to various disorders; that is to say, each one,

164. Ex his omnibus, ut videtur, concludere, æquum est, tanta benignitate et liberalitate hominibus providisse Naturam, totque iis voluptates suppeditasse, ut non modo viverent, sed vita quam dedit fruerentur.

165. Neque sane suis et eximils usibus carent sensuum voluptates. Suavitas illa generalis quæ omnes fere sensus, præsertim primâ ætate comitatur, invitat nos ad varias sentiendi facultates probe exercendas, et sic acuendas, plurimamque simul et utilissimam scientiam (131, 132) nobismet quotidie acquirendam.

166. Pari fere ratione ad sua organa motus modice et crebro exercenda invitantur homines,

præsertim pueri, quorum sic vis insita promovetur, et facilis et promptus usus discitur.

167. Quin et ad quasdam et maximi momenti actiones, qualibus nimirum aut singuli homines conservantur, aut genus humanum propagatur, egregiæ voluptatis præmio invitamur.

168. Postremo, voluptate illa quæ a modica mentis exercitatione oritur, ad nobilissimas ejus facultates exercendas et excolendas inducimur; quæ neglectæ et otiosæ, exiguæ sunt, probe cultæ, pene divinæ fiunt.

169. Singuli demum quibus instruimur sensus, tum externi tum interni, variis obnoxii sunt vitis; unusquisque scilicet, præsertim ex-

præsertim externorum (sensuum) potest esse vel nimis acutus, vel nimis especially of the external ones, can be either too acute or too obtusus, vel abolitus, vel denique depravatus.—Fortasse multi molesti obtuse, or abolished, or lastly depraved. —Perhaps many troublesome sensus quoque possunt referri huc qui sive sint sensations also may be referred hither (to this head) which whether they be ipsi primarii morbi, sive tantum signa aliorum morborum, themselves primary diseases, or only the signs of other diseases, optimo jure vindicant sibi attentionem by the best right (most deservedly) claim to themselves the attention medic. of the physician.

CAP. V.

CHAP. V.

De tactu que vitii ejus; nec non de dolore, anxietate, et pruritu.
Of touch and the disorders of it; also of pain, anxiety, and itching.

170. Tactus est simplicissimus omnium externorum sensuum et maxime
Touch is the most simple of all the external senses and the most generalis; quippe qui sit communis toti nervoso generi; general; as being that which is common to the whole nervous system; sed acutior certis partibus, veluti cuti, et imprimis apicibus but more acute in certain parts, as the skin, and especially the tips digitorum. Hi (apices) dicuntur habere nervosas papillas, quæ, of the fingers. These are said to have nervous papillæ, which, sanguine influente, erigantur quodammodo in tactu daturæ the blood flowing in, are erected in some manner during touch to give accuratorem sensum; sed hæc opinia nititur conjecturâ derivatâ a fabricâ linguæ, quæ est delicatissimum organum, non from the structure of the tongue, which is a most delicate organ, not modo gustûs sed quoque tactûs, potius quam certis observationibus only of taste but also of touch, rather than upon certain observations rei ipsiûs. of the thing itself.

171. Tactus percipit varias qualitates corporum; duritiem, mollitiem,
Touch perceives the various qualities of bodies; the hardness, softness,

ternorum, potest esse vel nimis acutus, vel nimis obtusus, vel abolitus, vel denique depravatus. Huc fortasse referri quoque possunt multi sensus molesti, qui, sive ipsi primarii morbi, sive tantum aliorum morborum signa sint, medici attentionem optimo jure sibi vindicant (34.)

CAP. V.—De tactu ejusque vitii; nec non de dolore, anxietate et pruritu.

170. OMNIUM sensuum externorum tactus simplicissimus est, et maxime generalis;

quippe qui toti generi nervoso communis sit: sed certis partibus acutior, veluti cuti, et imprimis apicibus digitorum. Hi papillas nervosas habere dicuntur, quæ, influente sanguine, quodammodo in tactu erigantur, sensum accuratorem daturæ; sed potius conjectura a linguæ fabrica derivata, quæ non gustus modo, sed tactus quoque delicatissimum organum est, hæc opinio nititur, quam certis rei ipsius observationibus.

171. Varias corporum qualitates tactus percipit; duritiem, mollitiem, asperitatem, lævi-

asperitatem, lævitatem, calorem, frigus, molem, figuram, distantiam,
roughness, smoothness, heat, cold, bulk, figure, distance,
 pressuram, pondus; raro fallax aut depravatus; quia scilicet
pressure, weight; rarely fallacious or depraved; because indeed
 corpora, qualitates quorum sunt explorandæ, admoventur proxime
the bodies, the qualities of which are to be examined, are applied closely
 ad organum ipsum, nullo medio interposito, varietates
to the organ itself, no medium being interposed, the varieties
 cujus (medii) possint fallere vel corrumpere sensum.
of which can deceive or corrupt the sensation.

172. Quod pertinet ad vitia tactûs, observatus est
What belongs to (as regards) the disorders of touch, it has been observed
 nimis acutus in universon (sc. corpus) in rarissimis si ullis
too acute in universon (sc. corpus) in rarissimis si ullis
too acute in general (all over the body) in very few if any
 exemplis. Vero sæpe fit acutior justo singulari
examples. But it often becomes more acute than proper (natural) in a particular
 parti, vel à cuticulâ nimis tenui, aut molli, aut sublatâ,
part, either from the cuticle being too thin, or too soft, or removed,
 vel parte ipsâ inflammatâ, vel expositâ nimio calori.
or the part itself inflamed, or exposed to too great heat.

173. Fit nimis obtusus, aut aboletur plane in universo
It becomes too obtuse, or is abolished altogether in the whole
 corpore, vel in magnâ parte ejus (corporis) a variis vitis
body, or in great part of it from various disorders
 cerebri que nervorum, compressione, vulnere, defectu vitalis vis:
of the brain and nerves, compression, wound, loss of vital power:
 Hoc vocatur Anæsthesia, aliquando comes paralyseos
This is called Anæsthesia, sometimes the companion of paralysis (palsy),
 et nonnunquam observatum (sup. est) in altero latere sine paralyssi.
and sometimes it has been observed on the one side without palsy.
 dum alterum (sc. latus) factum esset paralyticum, sensu
whilst the other was made (had become) paralytic, sensation
 integro.
being perfect.

174. Deficit in singulari parte vel a vitio ejus nervi,
It fails in a particular part either from a disorder of its nerve,
 compressione, obstructione, vulnere, &c. vel parte ipsâ expositâ
by compression, obstruction, wound, &c. or the part itself having been exposed
 nimio frigori, vel demum, cuticulâ quæ tegit, vitiatâ,
to too great cold, or in fine, the cuticle which covers it, being vitiated,
 nimis crassâ, aut factâ durâ, contrectatione asperorum aut nimis
too thick, or become hard, by the handling of rough or too

tatem, calorem, frigus, molem, figuram, distantiam, pressuram, pondus; raro fallax vel depravatus; quia scilicet corpora, quorum qualitates sunt explorandæ, proxime ad ipsum organum admoventur, nullo interposito medio, cujus varietates sensum fallere vel corrumpere possint.

172. Quod ad vitia tactus pertinet, nimis acutus in universon rarissimis si ullis exemplis observatus est. Parti singulari vero acutior justo sæpe fit, vel a cuticulâ nimis tenui, aut molli, aut sublata, vel parte ipsâ inflammatâ, vel nimio calori exposita.

173. Nimis obtusus fit, aut plane aboletur in universo corpore, vel in magna ejus parte, a variis vitis cerebri nervorumque, compressione, vulnere, vis vitalis defectu: hoc Anæsthesia vocatur, paralyseos aliquando comes; et nonnunquam in altera latere observatum, sine paralyssi; dum alterum, sensu integro, paralyticum factum esset.

174. Deficit in parte singulari, vel a vitio ejus nervi, compressione, obstructione, vulnere, &c. vel parte ipsa nimio frigori exposita; vel demum, cuticulâ quæ tegit vitiata, nimis crassa, aut dura facta, asperorum aut nimis

calidorum corporum, quod accidit vitrariis et ferrariis fabris,
hot bodies, which happens to workers in glass and blacksmiths,
 vel a subjectâ cute elevatâ, sanguine, sero, pure,
or from the subjacent skin being elevated, blood, serum, pus,
 interposito; vel cute ipsâ maceratâ, laxatâ, factâ torpidâ,
being interposed; or the skin itself macerated, relaxed, rendered torpid,
 quod nonnunquam accidit hydropicis; vel, demum, toto organo
which sometimes happens to dropsical persons; or, lastly, the whole organ
 corrupto, gangrænâ, ustione, algore, contusione.
being corrupted, by gangrene, burning, cold, contusion.

175. Tactus depravatur rarissime, nisi forte inter delirium, quum
Touch is depraved very rarely, unless perhaps during delirium, when
 omnes functiones cerebri turbantur in mirum modum.
all the functions of the brain are disturbed in a wonderful manner.

176. Ut a reliquis sensibus, sic etiam a tactu, voluptas aut
As from the other sensations, so also from touch, pleasure or
 dolor possunt oriri. Solemus contemplari, cum voluptate,
pain can arise. We are accustomed to contemplate, with pleasure,
 lævorem, molliem, modicum calorem. Levis pruritus, quoque, seu titillatio,
smoothness, softness, moderate heat. Slight itching, also, or tickling,
 quæ est habenda pro voluptate, pertinet ad hunc sensum, quamvis
which is to be considered as a pleasure, belongs to this sense, although
 sæpe oriatur a internis causis.
often it may arise from internal causes.

177. Referimus dolorem ad hunc sensum, que fere cæteros
We refer pain to this sense, and for the most part the other
 molestos sensus, anxietatem, pruritus, &c. quamvis revera dolor
troublesome sensations, anxiety, itching, &c. although truly pain
 possit oriri ab omni vehementiore sensu.
may arise from every more vehement sensation.

178. Dolor est ingratus, vehemens, acer sensus, quem referimus
Pain is an unpleasant, vehement, sharp sensation, which we refer
 ad certam partem corporis; que id minus accurate, si interna
to a certain part of the body; and that, less accurately, if an internal
 pars dolet, sed magis accurate, si superficies corporis afficitur.
part is in pain, but more accurately, if the surface of the body is affected.
 Neque tamen causa doloris semper hæret in dolente
Nor nevertheless does the cause of pain always stick (exist) in the painful
 parte. Nascitur a magnâ vi illatâ sentienti parti, sive
part. It arises from great violence done to the sentient part, whether
 illa vis fuerit intus sive extrinsecus. Igitur, quicquid
that violence have been within or from without. Therefore, whatever

calidorum corporum contractatione, quod vitrariis, fabrisque ferrariis accidit, vel a subjecta cute elevata, interposito sanguine, sero, pure; vel ipsa cute macerata, laxata, torpida facta, quod hydropicis nonnunquam accidit; vel demum toto organo corrupto, gangrænâ, ustione, algore, contusione.

175. Rarissime depravatur tactus, nisi forte inter delirium, quum omnes cerebri functiones mirum in modum turbantur.

176. Ut a reliquis sensibus, sic etiam a tactu, voluptas aut dolor oriri possunt. Lævorem, molliem, calorem modicum cum voluptate contemplari solemus. Levis quoque pruritus,

seu titillatio, quæ pro voluptate habenda est, ad hunc sensum pertinet, quamvis sæpe a causis internis oriatur.

177. Dolorem ad hunc sensum referimus, cæterosque fere sensus molestos, anxietatem, pruritus, &c.; quamvis revera ab omni sensu vehementiore dolor oriri possit.

178. Dolor est sensus ingratus, vehemens, acer, quem ad certam corporis partem referimus; idque minus accurate, si pars interna dolet; sed magis accurate, si corporis superficies afficitur. Neque tamen causa doloris semper in parte dolente hæret. Nascitur a magna vi parti sentienti illata, sive intus sive

pungit, secat, lacerat, distendit, comprimit, contundit, percutit, nodit,
pricks, cuts, lacerates, distends, compresses, bruises, strikes, gnaws,
 urit, vel ullo modo vehementer stimulat aut irritat, potest
burns, or in any manner violently stimulates or irritates, may
 creare dolorem.
produce pain.

179. Hinc jungit se frequentissimum, molestissimum comitem,
Hence it joins itself a very frequent, very troublesome companion,
 tot morbis, sæpe intolerabiliorem morbo ipso. Modicus
to so many diseases, often more intolerable than the disease itself. Moderate
 dolor excitat affectam partem, et paulatim totum corpus; facit
pain excites the affected part, and gradually the whole body; causes
 majorem fluxum sanguinis et nervosæ vis ad partem, et sæpe
a greater flow of blood and of nervous power to the part, and often
 stimulat ad necessarios et salubres motus, fidelis, quamvis
stimulates to necessary and healthy motions, a faithful, although
 ingratus monitor: hinc numerandus nonnunquam inter præsidia
unpleasant monitor: hence to be accounted sometimes amongst the safeguards
 vitæ.
of life.

180. Autem vehementior dolor facit nimiam irritationem, inflamma-
But more violent pain causes too much irritation, inflamma-
 tionem, que consequentias ejûs, febrem, et omnia mala que
tion, and the consequences of it, fever, and all the evils which
 profluunt a nimio motu humorum; convellit totum
flow forth from too great motion of the humours; convulses the whole
 nervosum genus, et inducit pervigilium, convulsiones, delirium,
nervous system, and brings on watching, convulsions, delirium,
 debilitatem, defectionem animi.
debility, fainting.

181. Neque animus neque corpus potest ferre diu
Neither the mind nor the body can bear (endure) for a long time
 immanem dolorem; et profecto Natura posuit certos fines,
cruel (very severe) pain and truly Nature has placed certain limits,
 ultra quos non permiserit dolorem intendi, quin delirium,
beyond which she will not permit pain to be stretched, without that delirium,
 aut convulsio, aut defectio animi, vel demum mors ipsa, eripiat
or convulsion, or fainting, or lastly death itself, rescue
 miserum (scil. hominem) supplicio.
the wretched sufferer from punishment.

extrinsecus illa vis fuerit. Quicquid igitur
 pungit, secat, lacerat, distendit, comprimit,
 contundit, percutit, rodit, urit, vel ullo modo
 vehementer stimulat aut irritat, dolore creare
 potest.

179. Hinc tot morbis frequentissimum, mo-
 lestissimum comitem se jungit; sæpe ipso
 morbo intolerabiliorem. Modicus dolor partem
 affectam, et paulatim totum corpus, excitat,
 majorem sanguinis et vis nervosæ fluxum ad
 partem facit, et ad motus necessarios et salu-
 bres sæpe stimulat, fidelis quamvis ingratus
 monitor. Hinc inter præsidia vitæ nonnun-
 quam numerandus.

180. Vehementior autem dolor nimiam irrita-
 tionem facit, inflammationem, ejusque conse-
 quentias, febrem, et omnia mala que a nimio
 humorum motu profluunt; totum genus nervo-
 sum convellit, et pervigilium, convulsiones,
 delirium, debilitatem, animi defectionem in-
 ducit.

181. Immanem dolorem neque animus neque
 corpus diu ferre potest: et profecto certos fines
 Natura posuit, quos ultra dolorem intendi non
 permiserit, quin delirium, aut convulsio, aut
 animi defectio, vel demum ipsa mors miserum
 supplicio eripiat.

182. Diurnus dolor, quamvis mitior, sæpe inducit debilitatem,
Long continued pain, although milder, often brings on debility,
 torporem, paralyisin, et rigiditatem affectæ partis.
torpor, palsy, and stiffness of the affected part.

183. Tolerantia doloris pendet multum a vi animi
The endurance of pain depends much upon the strength of mind
 quam æger possidet: et prout ipse tulerit (eum), mala
which the sick possesses: and as he himself shall bear it, the evils
 quæ nascuntur à dolore erunt graviora vel leviora. Nam in hoc,
which arise from pain will be severer or slighter. For in this,
 uti in aliis exemplis, onus quod fertur bene fit leve.
as in other examples, the burthen which is borne well becomes light.

184. Dolor, si non fuerit nimis vehemens, neque febris aut
Pain, if it should not be too vehement, and neither fever or
 anxietas comitetur eum, (dolorem), videtur aliquando conferre ad
anxiety accompany it, seems sometimes to conduce to
 claritatem et acumen ingenii. Qui laboraverunt
clearness and sharpness of understanding. They who have laboured under
 podagrâ testantur se expertos fuisse hoc.
gout testify that they have experienced this.

185. A dolore quem sentiunt, homines ferunt aliquod iudicium de
From the pain which they feel, men form some judgment of
 modo quo causa ejus agit; veluti pungendo, lancinando,
the manner in which the cause of it acts; as by pricking, by lancinating,
 lacerando, urendo, &c. scilicet, fingunt sibi quandam
by lacerating, by burning, &c. that is, they imagine to themselves a certain
 convenientiam et similitudinem inter res quas viderint, vel
agreement and similarity between things which they have seen, or
 noverint alio modo, et res magis obscuras.
have known in another way, and things more obscure.

186. Alius molestus sensus est anxietas, plane diversa a
Another troublesome sensation is anxiety, altogether different from
 dolore, obtusior, referenda, minus accurate, ad singularem partem,
pain, more obtuse, to be referred, less accurately, to a particular part,
 et sæpe intolerabilior omni dolore. Distinguendum est (sup. nobis
and often more intolerable than any pain. We must distinguish
 probe inter hanc anxietatem, de quâ agitur
well between the anxiety, of which it is treated (we treat)

medico sensu, que eam de quâ loquimur communi sermone.
in a medical sense, and that of which we speak in common language.

Hæc nimirum est a mente, neque pendet a statu
The latter doubtless is from the mind, nor does it depend upon the state

182. Diurnus dolor, quamvis mitior, sæpe partis affectæ debilitatem, torporem, paralyisin et rigiditatem inducit.

183. Doloris tolerantia pendet multum a vi animi quam æger possidet: et, prout ipse tulerit, mala quæ a dolore nascuntur graviora vel leviora crunt. Nam in hoc, uti in aliis exemplis, leve fit quod bene fertur onus.

184. Dolor, si non nimis vehemens fuerit, neque cum febris aut anxietas comitetur, ad claritatem et acumen ingenii aliquando conferre videtur. Hoc qui podagra laboraverunt se expertos fuisse testantur.

185. A dolore quem sentiunt, homines judi-

cium aliquod ferunt de modo quo causa ejus agit: veluti pungendo, lancinando, lacerando, urendo, &c.; scilicet inter res quas viderint, vel alio modo noverint, et res magis obscuras, convenientiam et similitudinem quandam sibi fingunt.

186. Alius sensus molestus est anxietas, a dolore plane diversa, obtusior, minus accurate ad partem singularem referenda, et sæpe omni dolore intolerabilior. Probe distinguendum est hanc inter anxietatem de qua sensu medico agitur, eamque de qua communi sermone loquimur. Hæc nimirum a mente est, neque a statu corporis pendet; quippe quæ oriatur a

corporis; quippe quæ oriatur a metu cujusvis prævisi
of the body; as being that which arises from the fear of any foreseen
 periculi, vel magni impendentis mali. Autem illa est vere corporea,
danger, or of great impending evil. But the former is truly corporeal,
 non secus ac dolor ducens originem à certo
not otherwise than as (in like manner as) pain deriving its origin from a certain
 statu corporis. Vero nihil obstat, quo utraque minus adsit
state of the body. But nothing hinders, why both should not be present
 simul, vel altera sit causa alterius. Revera ingens
at the same time, or the one be the cause of the other. Truly great
 corporea anxietas incutiet metum et anxietatem animi firmissimo
corporeal anxiety will strike fear and anxiety of mind to the stoutest
 pectori; et hæc vicissim si fuerit gravis et diuturna,
breast; and this in turn if it should be severe and long continued,
 viribus corporis fractis, imprimis quæ efficiunt cur-
the strength of the body being broken, especially those which effect the circu-
 sum sanguinis poterit inducere alteram (anxietatem).
lation of the blood will (be able) to bring on the other.

187. Anxietas, medico sensu, oritur imprimis a quacunque
Anxiety, in a medical sense, arises in the first place from any
 causâ turbante vel impediante motum sanguinis per cor,
cause disturbing or obstructing the motion of the blood through the heart,
 que magna vasa prope cor que pulmonem. Hinc comitatur
and great vessels near the heart and lungs. Hence it accompanies
 multiplicia vitia cordis que vasorum ejus, amplificationem,
the manifold disorders of the heart and of the vessels of it, enlargement
 constrictionem, conversionem in os, polypum,
(hypertrophy), constriction, conversion into bone (ossification), polypus,
 palpitationem, syncopen, inflammationem, debilitatem, et ideo
palpitation, syncope, inflammation, debility, and consequently
 nonnullos affectus animi.
some affections of the mind.

188. Oritur quoque ab omni difficultate spirandi, qualiscunque
It arises also from every difficulty of breathing, whatever
 fuerit causa ejus; nimirum exhalatione mephitis e
have been the cause of it; that is the exhalation of mephitic air from
 pulmone, et ista salutari mutatione sanguinis quæ fit per
the lungs, and that salutary change of the blood which is caused by
 spiritum impeditâ; et sanguine ipso forsan transeunte minus
the air being obstructed; and the blood itself perhaps passing less
 libere per pulmonem. Anxietas hujusmodi sentitur profunde in pectore.
freely through the lung. Anxiety of this kind is felt deeply in the breast.

metu periculi cujusvis prævisi, vel magni mali impendentis. Illa autem vere corporea est non secus ac dolor, a certo corporis statu originem ducens. Nihil vero obstat, quo minus utraque simul adsit, vel altera alterius causa sit. Revera ingens anxietas corporea metum et animi anxietatem firmissimo pectori incutiet. Et hæc vicissim, si gravis fuerit et diuturna, fractis corporis viribus, imprimis quæ sanguinis cursum efficiunt, alteram inducere poterit.

187. Anxietas, medico sensu, oritur imprimis a causa quacunque sanguinis motum, per cor, vasaque magna prope cor, pulmonemque, tur-

bante vel impediante. Hinc vitia cordis ejusque vasorum multiplicia, amplificationem, constrictionem, conversionem in os, polypum, palpitationem, syncopen, inflammationem, debilitatem, et ideo nonnullos animi affectus, comitatur.

188. Oritur quoque ab omni spirandi difficultate, qualiscunque ejus causa fuerit; impedita nimirum exhalatione mephitis e pulmone, et mutatione ista salutari sanguinis quæ per spiritum fit: et sanguine forsan ipso minus libere per pulmonem transeunte. Hujusmodi anxietas profunde in pectore sentitur.

189. Dicitur quoque oriri a difficiliore transitu sanguinis
It is said also to arise from a more difficult passage of the blood
 per jecur, que cætera viscera abdominis.
through the liver, and the other viscera of the abdomen.

190. Quoddam genus anxietatis familiaris et molestissimæ hypochondriacis oritur a stomacho et intestinis gravatis multo onere crudi atque corrupti cibi que potus, vel distentis aëre extricato per minus sanam concoctionem. Ventriculus, delicatissimum organum, afficitur male, tali onere vel distentione: igitur (sup. est) nil mirum si dat ungratum sensum; quin et distentio ejus impedit liberum descensum transversi septi (diaphragm) et sic obest respiratiōni. Anxietas hujusmodi solet levari multum et subito aëre expulso, et dignoscitur facile hoc, et aliis signis pravæ digestionis. In his exemplis, anxietas solet referri ad ventriculum, sed parum accurate.
A certain kind of anxiety common and very troublesome to hypochondriacs arises from the stomach and intestines being oppressed with a great burthen of crude and corrupted food and drink, or distended with air disengaged during a not healthy (unhealthy) concoction. The stomach, a most delicate organ, is affected badly, by such a burthen or distention: therefore it is no way wonderful if it gives an unpleasant feeling; but also the distention of it hinders free the descent of the transverse septum (diaphragm) and thus opposes respiration. Anxiety of this kind is accustomed to be relieved much and suddenly by the air being expelled, and is distinguished easily by this, and other signs (symptoms) of depraved digestion. In these examples, the anxiety is accustomed to be referred to the stomach, but by no means accurately.

191. Anxietas, nunc gravior, nunc levior, quoque sæpe comitatur omnigenas febres: tum propter generalem debilitatem tum propter sanguinem pulsum a superficie corporis, que accumulatum in magnis vasis, veluti intermittente febre ingruente; tum quoque propter ventriculum male affectum, et gravatum onere crudi aut corrupti cibi, vel distentum et nauseantem multo imprimis calido medicato potu. Febre (being sick) with much especially warm medicated drink. The fever

189. Dicitur quoque oriri a difficiliore transitu sanguinis per jecur, cæteraque viscera abdominis.

190. Genus quoddam anxietatis hypochondriacis familiaris, et molestissimæ, oritur a stomacho et intestinis, vel multo crudi atque corrupti cibi potusque onere gravatis, vel aëre per concoctionem minus sanam extricato distentis. Tali onere, vel distentione, ventriculus, organum delicatissimum, male afficitur. Nil mirum igitur si sensum ingratum dat; quin et ejus distentio liberum septi transversi descensum impedit, et sic respiratiōni obest. Hujusmodi

anxietas, expulso aëre, multum et subito levari solet, et hoc, et aliis pravæ concoctionis signis, facile dignoscitur. In his exemplis, anxietas ad ventriculum, sed parum accurate, referri solet.

191. Febres quoque omnigenas anxietas sæpe comitatur, nunc gravior nunc levior: tum propter generalem debilitatem, tum propter sanguinem a superficie corporis pulsum, inque magnis vasis accumulatum, veluti ingruente febre intermittente: tum quoque propter ventriculum male affectum, et onere cibi crudi aut corrupti gravatum, vel multo potu, imprimis

ingravescente æger angitur magis que magis, insigniter, ut
becoming severe the sick is distressed more and more, remarkably so, as
 medici testantur, mox ante crisin, vel nocte quæ
physicians testify, immediately before a crisis, or on the night which
 præcedit eam, veluti ante eruptionem super cutem, vel profluvium
precedes it, as before an eruption on the skin, or a profluvium
 sanguinis, vel sudorem, vel fluxum alvi, quales aliquando solvunt
of blood, or sweat, or flux of the belly, such as sometimes resolve
 febres. Æger quoque angitur a repulsâ eruptione, vel salutari
fevers. The sick also is distressed from a repelled eruption, or salutary
 translatione.

translation (metastasis).

192. Quin anxietas comitatur pariter et febres et plerosque morbos
But anxiety accompanies alike both fevers and most diseases
 quum, vitâ jam deficiente, mors instat, cuius (sc. mortis) est
when, life already failing, death is at hand, of which it is
 prænnuncia et signum. Fit nimirum quum vitales vires,
a forerunner and sign. It happens doubtless when the vital powers,
 factæ impares propriis muneribus, nequeunt absolvere circuitum
become unequal to their proper functions, cannot perform the circulation
 sanguinis. Autem qualis hæcce anxietas sit, cætera signa
of the blood. But what kind this anxiety may be, the other signs
 appropinquantis mortis docent satis que super.
of approaching death teach sufficiently and over (more than sufficiently).

193. Porro, anxietas potest oriri inter somnum, ab iisdem
Moreover, anxiety may arise during sleep, from the same
 causis: hinc dira somnia, quæ sæpe rumpunt somnum subito
causes: hence direful dreams, which often break the sleep suddenly
 et cum terrore.
and with terror.

194. Pruritus, scilicet inquietans sensus, cum cupiditate scalpendi,
Itching, that is a disquieting sensation, with a desire of scratching,
 est sæpe molestissimus, quamvis sit magis affinis voluptati quam dolori.
is often very troublesome, although it is more akin to pleasure than to pain.

195. Ut dolor fit à gravi irritatione, tam mechanicâ
As pain is made (arises) from severe irritation, as well mechanical
 quam chemicâ, sic pruritus (sup. fit) a leviori. Titillatio, seu
as chemical, so itching arises from a slighter. Tickling, or
 frictio, veluti lanei indusii homini minus assueto (ei), et
friction, as of a flannel shirt to a man not accustomed to it, and
 prædito delicatiore cute, excitat prurimum; et multa acria
endowed with a more delicate skin, excites itching; and many acrid things

calido, medicato, distentum et nauseantem. Ingravescente febre, æger magis magisque angitur, insigniter, ut testantur medici, mox ante crisin, vel nocte quæ eam præcedit, veluti ante eruptionem super cutem, vel sanguinis profluvium, vel sudorem, vel alvi fluxum, quales febres aliquando solvunt. Angitur quoque æger a repulsâ eruptione, vel translatione salutari.

192. Quin et febres, et plerosque morbos pariter anxietas comitatur, quum, vita jam deficiente, mors instat, cuius prænnuncia est et signum. Fit, nimirum quum vires vitales, propriis muneribus impares factæ, circuitum

sanguinis absolvere nequeunt. Qualis autem sit hæcce anxietas, cætera appropinquantis mortis signa satis superque docent.

193. Porro, inter somnum ab iisdem causis anxietas oriri potest. Hinc dira somnia, quæ somnum sæpe subito et cum terrore rumpunt.

194. Pruritus, sensus scilicet inquietans, cum scalpendi cupiditate, sæpe molestissimus est, quamvis voluptati magis quam dolori affinis sit.

195. Ut dolor a gravi irritatione, tam mechanicâ quam chemicâ, sic pruritus a leviori fit. Titillatio, seu frictio, veluti indusii lanei minus assueto homini, et delicatiore prædito, prurimum excitat; et multa acria ex animalibus

derivata ex animalibus, aut herbis, aut fossilibus rebus. Sic primus
derived from animals, or vegetables, or fossile things. Thus the first
 sensus a *Cantharidibus* admotis cuti est pruritus, quamvis idem
sensation from Cantharides applied to the skin is itching, although the same
 auctus fiat dolor.
increased may become pain.

196. Quædam acria delata in cutem, veluti in febris, quas
Certain acrid things conveyed (forced) to the skin, as in fevers, which
 eruptio super cutem comitatur, aut regio morbo
an eruption upon the skin accompanies, or in the royal disease (jaundice),
 aut, demum, varii morbi ipsius (sc. cutis), scabies, lepra, edunt
or, lastly, the various diseases of itself, , itch, lepra, produce
 eundem effectum.
the same effect.

197. Pediculi, vermes, imprimis *ascarides*, irritantes vel cutem vel intestina,
Lice, worms, especially ascarides, irritating either the skin or intestines,
 excitant molestum pruritus.
excite a troublesome itching.

198. Quædam species interni pruritus impellit homines ad multas et
A certain kind of internal itching drives men to many and
 necessarias actiones, tam sani quam morborum corporis;
necessary actions, as well of the healthy as of the diseased body;
 excretionem urinæ et alvi, tussim, sternutationem, et similia.
the excretion of the urine and fæces, cough, sneezing, and the like.

CAP. VI.

CHAP. VI.

De gustu; que usibus, et varietatibus, et vitiis ejûs.
 Of taste; and the uses, and varieties, and disorders of it.

199. Lingua est princeps organum hujûs: que ea (sc. lingua), quo
The tongue is the principal organ of this: and it, the
 propior apici, habet eo acutiorem sensum, quo propior
nearer the apex, has the more acute feeling (sensitivity), the nearer
 gutturi eo obtusorem: quamvis revera nonnulla acria,
the throat the more obtuse: although truly some acrid things (acrids),

bus, aut herbis, aut fossilibus rebus derivata. Sic primus sensus a *cantharidibus* cuti admotis, pruritus est, quamvis idem auctus dolor fiat.

196. Acria quædam in cutem delata, veluti in febris, quas eruptio super cutem comitatur, aut morbo regio, aut demum varii ipsius morbi, scabies, lepra, eundem effectum edunt.

197. Pediculi, vermes, *ascarides* imprimis, vel cutem vel intestina irritantes, molestum pruritus excitant.

198. Species quædam pruritus interni, homi-

nes ad multas et necessarias tam sani quam morborum corporis, actiones impellit; urinæ et alvi excretionem, tussim, sternutationem, et similia.

CAP. VI.—*De gustu, ejusque usibus, varietatibus et vitiis.*

199. Hujus organum princeps est lingua: eaque quo propior apici, eo acutiorem, quo propior gutturi, eo obtusorem sensum, habet: quamvis revera acria nonnulla, circa apicem vix

vix gustata circa apicem, excitent acerrimum sensum prope
scarcely tasted about the apex, may excite a very sharp sensation near
 radicem linguæ, vel in guttere ipso.
the root of the tongue, or in the throat itself.

200. Lingua instruitur insignibus et pulcherrimis nervosis
The tongue is furnished with remarkable and very beautiful nervous
 papillis, quæ videntur esse proxima sedes gustus. Hæ
papillæ, which seem to be the proximate (immediate) seat of taste. These
 (sc. papillæ) elevantur et eriguntur inter gustandum, quo habeant
are elevated and are erected during tasting, that they may have
 acutiorem sensum.
(to have) a more acute sensibility.

201. Possumus gustare nihil, nisi quod sit solubile in salivâ, quæ
We can taste nothing, unless what is soluble in the saliva, which
 est fere aqua, ut, admotum linguæ fluidâ formâ, pervadat
is mostly water, that, applied to the tongue in the fluid form, it may pervade
 involucra ejus, que afficiat nervosam pulpam. Hinc insolubiles terræ
the coverings of it, and affect the nervous pulp. Hence insoluble earths
 sunt nulliûs saporis.
are of no taste.

202. Neque est sat, ut gustemus id, corpus
Nor is it sufficient, that we may taste (in order to taste) it, that a body
 esse solubile: oportet (sup. ut) habeat nonnihil salis, vel
be soluble: it behoves that it have (it must have) something of salt, or
 saltem acrimoniæ, in se, quod stimulet nervosam substantiam.
at least of acrimony, in it, which can stimulate the nervous substance.

Igitur quicquid est minus salsum aut acre quam saliva ipsa, habet
Therefore whatever is less salt or acrid than the saliva itself, has
 nullum saporem.
no taste.

203. Varia genera saporum distinguuntur facile, et ideo nacta
The various kinds of tastes are distinguished easily, and therefore have
 sunt sibi met peculiaria nomina etiam in communi sermone: veluti
got for themselves peculiar names, even in common language: as
 acidus sapor, dulcis, amarus, salsus, acer, aromaticus, putridus; vero hic
an acid taste, sweet, bitter, salt, sharp, aromatic, putrid; but this last
 quoque jungitur cum odore. Sunt varii gradus omnium
is also joined with odour. There are various degrees of all (of every kind of)
 saporum, que omnes (sc. sapes) possunt conjungi varie inter
tastes, and all can be combined variously among
 se.
themselves (together).

gustata, prope radicem linguæ, vel in ipso guttore, acerrimum sensum excitent.

200. Lingua insignibus et pulcherrimis papillis nervosis instruitur, quæ proxima gustus sedes videntur esse. Hæ inter gustandum elevantur, et eriguntur, quo acutiorem sensum habeant.

201. Nihil gustare possumus, nisi quod in saliva, quæ fere aqua est, solubile sit, ut fluida forma lingue admotum involucra ejus pervadat, pulpamque nervosam afficiat. Hinc terræ insolubiles nullius saporis sunt.

202. Neque sat est solubile esse corpus, ut id

gustemus. Oportet salis, vel saltem acrimoniæ nonnihil in se habeat, quod nervosam substantiam stimulet. Quicquid igitur quam saliva minus salsum aut acre est, nullum habet saporem.

203. Saporum varia genera facile distinguuntur, et ideo nomina peculiaria etiam in communi sermone sibi met nacta sunt: veluti sapor acidus, dulcis, amarus, salsus, acer, aromaticus, putridus; hic vero cum odore quoque jungitur. Omnium saporum varii sunt gradus, omnesque varie inter se conjungi possunt.

204. Alii sapes sunt suavissimi et gratissimi; alii ingrati, que
Some tastes are very sweet and very agreeable; some disagreeable, and
 vix tolerandi. Tamen, mira diversitas hominum
scarcely to be borne (endured). Nevertheless, a wonderful difference of men (in men)
 (est) de hac re: ita ut quod est (pro affert positum) maximæ
exists in this respect: so that what brings (affords) the greatest
 voluptati aliis (hominibus) alii respuant non sine nausæ et horrore.
pleasure to some, others spit back not without nausea and horror.

205. Quin homines solent fastidire brevi et
But men are accustomed to loath in a short time even
 suavissimos sapes, qui primo dederant magnam voluptatem;
the sweetest tastes, which at first had given (afforded) great pleasure;
 dum consuetudine discunt amare et appetere pessimos
whilst by custom (habituation) they learn to love and to desire the worst
 et ingratisimos: quales sunt (sapes) nicotianæ, tabaci, ferulæ,
and the most unpleasant: such as are those of nicotiana, tobacco, of ferula,
 assafetidæ, et simillum.
assafetida, and of the like.

206. Præcipuus usus gustûs videtur esse invitare ad bonum et
The chief use of taste seems to be to invite to good and
 salubrem cibum, divertere a noxio aut minus idoneo (cibo). Plerique
wholesome food, to divert from noxious or less suitable. Most
 et optimi cibi sunt grati gustui; vero qui (cibi) sunt mali
and the best foods are pleasant to the taste; but what are of bad
 saporis incorrupto gustui ii (sc. cibi) fere nocent.
taste (flavour) to an uncorrupted taste (palate) they commonly hurt.

Instinctu hujusmodi, raro fallace, quem olfactus quoque juvat,
By an instinct of this kind, seldom deceptive, which the smell also assists,
 bruta animalia perducuntur ad idoneum cibum, et arcentur a noxio.
brute animals are led to suitable food, and are warded off from noxious.

207. Vero hic instinctus, non secus ac reliqui
But this instinct, not otherwise than as the remaining (the other),
 (sc. instinctus), datur minus perfectus homini quam belluis; quippe qui
instincts, is given less perfect to man than to brutes; as being one who
 (sc. homo) minus eget tali auxilio, præditus aliis facultatibus;
does not want (require) such aid, being gifted with other faculties;
 vero instinctus ipse qui datur sæpe corrumpitur parum naturali
but the instinct itself which is given often is corrupted by a not natural
 genere vitæ.
(unnatural) kind of life.

208. Porro, alma Parens rerum statuit ut actio adeo
Moreover, the kind Parent of nature resolved that an action so

204. Sapes alii suavissimi et gratissimi sunt; alii ingrati, vixque tolerandi. Mira tamen de hac re hominum diversitas: ita ut quod aliis maxime voluptati est, alii non sine nausæ et horrore respuant.

205. Qui et suavissimos sapes, qui magnam primo voluptatem dederant, homines breve fastidire solent: dum pessimos et ingratisimos, quales sunt *Nicotiana tabaci, Ferula assafetida*, et simillum, consuetudine amare discunt et appetere.

206. Usus gustus præcipuus videtur esse, ad cibum bonum et salubrem invitare, a noxia aut

minus idoneo divertere. Plerique et optimi cibi gustui grati sunt. Qui vero gustui incorrupto mali saporis sunt, ii fere nocent. Hujusmodi instinctu, raro fallace, quem olfactus quoque juvat, bruta animalia ad idoneum cibum perducuntur, et a noxio arcentur.

207. Hic vero instinctus, non secus ac reliqui, minus perfectus homini quam belluis datur; quippe qui tali auxilio minus eget, aliis facultatibus præditus. Ipse vero qui datur instinctus, vitæ genere parum naturali sæpe corrumpitur.

208. Statuit porro alma rerum Parens, ut

necessaria ad alendam vitam, et suâ naturâ quodammodo voluntaria,
necessary to support life, and in its nature in some degree voluntary,

non careret aliquâ voluptate. Allicimur grato sapore
should not want some pleasure. We are allured by the agreeable taste

cibi, tanquam præmio, ad sumendum et conficiendum cibum.
of food, as it were by a reward, to take and to chew food.

Revera ista voluptas pendet multum a statu ventriculi, et
Truly that pleasure depends much upon the state of the stomach, and

a necessitate sumendi novi cibi: enim vilissimus et fere insulsus
upon the necessity of taking new food: for the vilest and almost unsavoury

cibus est gratissimus homini esurienti; vero crearet fastidium
food is very agreeable to a man hungering; but would cause loathing

saturi. Porro, inter mandendum, saliva affluit copiosior,
to one sated. Moreover, during chewing, the saliva flows forth more copious,

quo gustus evadat accuratior, et sapor cibi
in order that the taste may become more accurate, and the flavour of the food

gratior. Saliva fluit esurienti, ad conspectum etiam,
more agreeable. The saliva flows to the hungry man, at the sight also,

vel etiam ad imaginem aut recordationem grati cibi quem appetit.
or even at the idea or recollection of the pleasant food which he desires.

209. Gustus observatur raro nimis acutus, nisi a vitio cuticulæ
Taste is observed seldom too acute, except from disease of the cuticle

quæ tegit linguam. Hæc, (cuticula), si fuerit sublata, aut vulnerata,
which covers the tongue. This, if it should be raised, or wounded,

aut obsessa ulceribus, aphthæ, que similibus malis, tum gustu
or beset with ulcers, aphthæ, and similar disorders, then taste

facto nimis acri, sapes percipiuntur non sine dolore; vel
being made too sharp (acute), tastes are perceived not without pain: or

aliquando nullus sapor distinguitur, dolor solus sentitur.
sometimes no taste is distinguished, pain alone is felt.

210. Deficit, non secus ac tactus, a variis vitis cerebri
It fails, not otherwise than as touch, from various disorders of the brain

ipsius que nervorum. Vero exempla hujusmodi sunt rara. Datur
itself and of the nerves. But examples of this sort are rare. It is given

admodum obtusus nonnullis hominibus. Hi (homines) solent quoque
very obtuse to some men. They are accustomed also

habere parum olfactus. Deficit sæpissime propter defectum
to have little (no) smell. It fails very often on account of a deficiency

salivæ: nam sicca lingua nequit gustare. Hinc est obtusus in multis
of saliva: for a dry tongue cannot taste. Hence it is obtuse in many

morbis, imprimis febribus, gravedine, &c. tum ob
diseases, especially fevers, stuffing in the head, &c. as well on account of

actio ad vitam alendam adeo necessaria, et sua natura quodammodo voluntaria, voluptate aliqua non careret. Grato cibi sapore, tanquam præmio, ad cibum sumendum et conficiendum allicimur. Revera ista voluptas pendet multum a statu ventriculi, et a necessitate novi cibi sumendi. Vilissimus enim cibus, et fere insulsus, homini esurienti gratissimus est, saturi vero fastidium crearet. Porro, inter mandendum saliva copiosior affluit, quo accuratior evadat gustus, et cibi sapor gratior. Fluit etiam saliva esurienti ad conspectum, vel etiam ad imaginem aut recordationem grati cibi, quem appetit.

209. Gustus raro nimis acutus observatur, nisi a vitio cuticulæ, quæ linguam tegit. Hæc, si sublata fuerit, aut vulnerata, aut ulceribus, aphthæ, similibusque malis, obsessa, tum gustu nimis acri facta, sapes non sine dolore percipiuntur; vel aliquando sapor nullus distinguitur, solus dolor sentitur.

210. Deficit non secus, ac tactus, a variis cerebri ipsius nervorumque vitis. Hujusmodi vero exempla rara sunt. Nonnullis hominibus admodum obtusus datur. Hi quoque parum olfactus habere solent. Deficit sæpissime propter defectum salivæ: nam sicca lingua gustare nequit. Hinc in multis morbis obtusus

defectum salivæ, tum quoque ob (sup. defectum) appetitûs,
a deficiency of saliva, as also on account of loss of appetite,
 qui (appetitus) juvat adeo in sano homine; vel propter
which assists so much in the healthy man; or on account of
 linguam ipsam obductam tenace et fœdo muco.
the tongue itself covered (coated) with a tenacious and foul mucus.

211. Gustus sæpe depravatur; scilicet, vel gustamus, nihil omnino
Taste often is depraved; that is, either we taste, nothing at all
 admoto linguæ; vel, si quid fuerit admotum ei (sc. linguæ),
being applied to the tongue; or, if anything should be applied to it,

percipimus saporem alienum a vero et solito (sc. sapore.) Hoc
we perceive a taste different from the true and usual one. This

fit plerumque a vitio salivæ, quæ ipsa gustatur
happens for the most part from disorder of the saliva, which itself is tasted.

Hoc modo dulcis, salsus, acer, amarus, putridus, rancidus sapor,
In this manner, a sweet, salt, sharp, bitter, putrid, rancid taste,

potest percipi, prout saliva fuerit corrupta, vel a statu
may be perceived, as the saliva shall be corrupted, either from the state

generalis massæ humorum, vel organorum quæ secernunt ipsam
of the general mass of the humours, or of the organs which secrete it,

(sc. salivam), vel oris ipsius, vel ventriculi, unde vapor et
or of the mouth itself, or of the stomach, whence vapour and

ructus surgunt ad os, præsertim si (sc. ventriculus) habet se male.
belchings rise to the mouth, especially if it has itself badly.

212. Verum gustus vitiatu ab aliis causis præter vitia
But taste is disordered from other causes besides the defects

salivæ, veluti conditione nervosarum papillarum, cuius vero
of the saliva, as from the condition of the nervous papillæ, of which truly

parum hactenus est notum; nam nonnunquam gustus plane alienatur,
little hitherto is known; for sometimes taste evidently is corrupted,

quamvis saliva ipsa sit nullius saporis aliis hominibus.
although the saliva itself is of no taste to other men.

213. Medici solent attendere multum ad conditionem linguæ
Physicians are accustomed to attend much to the condition of the tongue

in omnibus morbis, præsertim febribus; nec immerito. Nam ex
in all diseases, especially fevers; nor undeservedly. For from

eâ (sc. lingua) possunt judicare de statu ventriculi, de siti, vel
it they can judge of the state of the stomach, of thirst, or

potius de necessitate sumendi potûs, cum æger, propter
rather of the necessity of taking drink, when the sick, on account of

delirium, stuporem, &c., neque sentit sitim, neque potest conqueri de
delirium, stupor, &c., neither feels thirst, nor can complain of

est, febribus imprimis, gravedine, &c. tum ob salivæ, tum quoque ob appetitus defectum, qui in sano homine adeo juvat; vel propter linguam ipsam tenace et fœdo muco obductam.

211. Depravatur sæpe gustus. Scilicet, vel gustamus nihil omnino linguæ admoto; vel, si quid ei admotum fuerit, saporem percipimus a vero et solito alienum. Hoc fit plerumque a vitio salivæ quæ ipsa gustatur. Hoc modo sapor dulcis, salsus, acer, amarus, putridus, rancidus, percipi potest, prout saliva vel a statu generalis massæ humorum, vel organorum quæ ipsam secernunt, vel oris ipsius, vel ventriculi, unde vapor et ructus, præsertim si

male se habet, ad os surgunt, corrupta fuerit.

212. Verum, præter salivæ vitia, ab aliis causis gustus vitiatu, veluti papillarum nervosarum conditione; cuius vero parum hactenus notum est. Nam gustus nonnunquam plane alienatur, quamvis saliva ipsa aliis hominibus nullius saporis sit.

213. Ad linguæ conditionem medici in omnibus morbis, præsertim febribus, multum solent attendere; nec immerito. Nam ex ea judicare possunt de statu ventriculi, de siti, vel potius de necessitate potus sumendi, cum æger, propter delirium, stuporem, &c. neque sitim sentit, neque de ea potest conqueri; et demum

eâ (sc. siti;) et, demum, medici conantur deducere aliquid
 it; and, lastly, physicians endeavour to deduce (to form) some
 iudicium ab inspectâ linguâ, de naturâ et augmento vel remissione
judgment from the inspected tongue, of the nature and increase or remission
 febris.
of fever.

CAP. VII.

CHAP. VII.

De olfactu; que usibus, varietatibus, et vitiis ejus; necnon de naturâ
 Of smell, and the uses, varieties, and disorders of it; also of the nature
odorum, que effectibus eorum in humano corpore.
 of odours, and the effects of them in the human body.

214. Sedes hujûs sensûs est in illâ mollissimâ delicatissimâ membrana,
The seat of this sense, is in that very soft delicate membrane,
 refertâ nervorum et vasorum, vehentium sanguinem, quæ (sc. membrana)
full of nerves and of vessels, carrying blood, which
 obducitur internis naribus, que varils sinibus et antris,
is spread over the internal nostrils, and the various sinuses and antrums,
 quibus est (pro habent) iter ex iis. Sensus (sup. est) acutior
which have a passage from them. The sensation is more acute
 circa medium septum que spongiosa ossa, quibus membrana datur
about the middle septum and spongy bones, to which the membrane is given
 crassior et mollior, quam in profundioribus antris ubi membrana
thicker and softer, than in the deeper antrums where the membrane
 est tenuior, minus nervosa, et minus referta vasis; quamvis hæ
is thinner, less nervous, and less supplied with vessels: although these
 partes quoque, ut videtur, non omnino careant olfactu.
parts also, as it appears, do not altogether want smell.

215. Ut gustu judicamus de solubilibus partibus corporum, sic olfactu
As by taste we judge of the soluble parts of bodies, so by smell
 (sup. judicamus) de volatilibus partibus, quæ (sc. partes), subtilissimæ, volitant
we judge of the volatile parts, which very subtile, float
 per aëra Ut aliquis olfaciat accurate, inhalat
through the air. That any one may smell (in order to smell) accurately, he inhales

de natura, et augmento, vel remissione febris,
 ab inspecta lingua, medici iudicium aliquod
 deducere conantur.

CAP. VII.—*De olfactu; ejusque usibus, varietatibus et vitiis: nec non de natura odorum, eorumque effectibus in corpore humano.*

214. Hujus sensus sedes est in membrana illa mollissima, delicatissima, nervorum et vasorum sanguinem vehentium referta, quæ naribus internis, variisque sinibus et antris, quibus iter

ex iis est, obducitur. Acutior sensus circa medium septum, ossaque spongiosa, quibus membrana crassior et mollior datur, quam in antris profundioribus, ubi membrana tenuior, minus nervosa, et vasis minus referta est; quamvis hæ quoque, ut videtur, partes olfactu non omnino careant.

215. Ut gustu de partibus corporum solubilibus, sic olfactu de partibus volatilibus, quæ subtilissimæ per aëra volitant, judicamus. Ut accurate olfaciat aliquis, apertis quantum pos-

aëra, fortiter, naribus apertis, quantum possit, que ore
the air, strongly, with the nostrils opened, as much as he can, and the mouth
 clauso, quo plures volatiles particulae admoveantur, que majore vi,
shut, that more volatile particles may be applied, and with greater force,
 organo olfactûs.
to the organ of smelling.

216. Organum olfactûs quoque, non secus ac organum gustûs,
The organ of smell also, not otherwise than as the organ of taste,
 servatur madidum, quo habeat acutiorem sensum, partim proprio
is kept moist, that it may have a more acute sensibility, partly by its own
 mucos, partim lachrymis quæ distillant assidue ex oculis.
mucus, partly by the tears which drop down constantly from the eyes.

217. Ut gustus præponitur custos itineri cibi, sic olfactus
As taste is put over as a guard to the passage of the food, so smell
 (sup. præp. &c.) ostio viarum quas aër debet subire
is placed over the mouth of the passages which the air ought to go through,
 moniturus ne quid noxii admittatur in corpus viâ quæ
to advise that no thing noxious be admitted into the body by a passage which
 semper patet. Porro, ut gustus, hic sensus quoque invitat ad
always lies open. Moreover, like as taste, this sense also invites to
 salutarem cibum, deterret a noxio, aut corrupto, imprimis putrido
salutary food, frightens from noxious, or corrupted, especially putrid
 vel rancido (sc. cibo.)
or rancid food.

218. Quin et, quidam odores pollent insigni vi in nervoso
Moreover, certain odours act with remarkable power upon the nervous
 genere, et nonnunquam edunt mirandos effectus. Alii grate excitant
system, and sometimes produce wonderful effects. Some gratefully excite
 et statim recreant fere deficientem animo; alii faciunt lingui
and immediately recover the almost fainting; others cause a person
 animo, et aliquando, ut fertur, plane extinguunt hominem. Huc
to faint, and sometimes, as it is said, evidently kill the man. Hither
 pertinent quoque quæ vocantur antipathiæ, ridiculae profecto,
(to this head) belong also what are called antipathies, ridiculous truly,
 sed sæpe debellandæ nullâ vi animi.
but often to be driven off by no force of mind (by no resolution.)

219. Olfactus interdum fit nimis acutus, tum propter quædam
Smell sometimes becomes too acute, as well on account of certain
 vitia organi ipsiûs, quod observatur rarius, tum quoque
defects of the organ itself, which is observed more rarely, as also
 propter universum nervosum genus sentiens nimis
on account of the whole nervous system feeling too much (too sensibly) as

sit naribus, clausoque ore, aëra fortiter inhalat. quo plures particulae volatiles, majoreque vi, olfactus organo admoveantur.

216. Organum quoque olfactus, non secus ac organum gustus, quo acutiorem sensum habeat, madidum servatur: partim proprio mucos, partim lachrymis quæ ex oculis assidue distillant.

217. Ut gustus cibi itineri, sic olfactus ostio viarum, quas aër subire debet, custos præponitur, moniturus ne quid noxii, viâ quæ semper patet, in corpus admittatur. Porro, ut gustus, hic quoque sensus ad cibum salutarem invitat,

a noxio aut corrupto, putrido imprimis vel rancido, deterret.

218. Quin et odores quidam insigni vi in genere nervoso pollent, et mirandos nonnunquam effectus edunt. Alii grate excitant, et animo fere deficientem statim recreant; alii animo lingui faciunt, et aliquando, ut fertur, hominem plane extinguunt. Huc quoque pertinent quæ vocantur antipathiæ, ridiculae profecto, sed sæpe nulla vi animi debellandæ.

219. Olfactus interdum nimis acutus fit, tum propter vitia quædam organi ipsiûs, quod rarius observatur, tum quoque propter universum

observatur aliquando in quibusdam febribus, in phrenitide, in *hysteriâ*.
is observed sometimes in certain fevers, in phrenitis, in hysteria.

220. Obtunditur sæpius aut a vitiis cerebri que nervorum,
It is blunted more often either from disorders of the brain and of the nerves,
 veluti à vi illatâ capiti, vel provenientes à internâ
as from violence done to the head, or proceeding from an internal
 causâ; aut à vitio organi ipsiûs, aridi, propter solitos
cause; or from disorder of the organ itself, dry, on account of the accustomed
 humores suppressos, vel versos alio, vel obruti
humours being suppressed, or turned (directed) elsewhere, or overwhelmed
 (sc. organi) nimîâ copiâ mucî que lachrymarum: exemplum
with too great plenty of mucus and tears; an example
 utriûsque est in gravidine, ubi initio
of both is (exists) in stuffing of the head, where (in which) at the beginning
 morbi nares arescunt, vero postea vel inundantur multo
of the disease the nostrils grow dry, but afterwards either are inundated with much
 humore, vel obstuuntur spissiore muco. Sed in his, que bene
humour, or are obstructed with a thicker mucus. But in these, and a good
 multis aliis exemplis, membrana ipsa nasi afficitur inflammatione,
many other examples, the membrane itself of the nose is affected with inflammation
 relaxatione, nimîâ tensione, quâ potest non fieri quin nervi,
relaxation, too great tension, by which it cannot happen but that the nerves,
 qui efficiunt magnam partem ejûs (sc. membranæ,) vitentur.
which form (constitute) a great part (portion) of it, are diseased.
 Porro, quicquid impedit liberum introitum aëris in nares,
Moreover, whatever impedes the free ingress of the air into the nostrils,
 aut transitum ipsiûs (sc. aëris) per eas (sc. nares), potest non non obesse
or the passage of it through them cannot not hurt
 olfactui.
(must hurt) smelling.

221. Olfactus nonnumquam depravatur, et odores percipiuntur, ubi
Smell sometimes is depraved, and odours are perceived, where
 nihil odorati fuit, vel odores rerum percipiuntur alieni a
nothing (of) odorous has been, or odours of things are perceived different from
 veris et solitis (odoribus.) Odoratæ particulæ, post longam moram
the true and usual ones. The odorous particles, after a long delay
 in antris, demum erumpentes, et denuo afficientes organum,
in the antrums, at last breaking forth, and again affecting the organ,
 nonnumquam efficiunt depravationem hujûsmodi, etiam in sanissimo
sometimes produce depravation of this kind, even in the most healthy
 homine. Multa vitia narium quoque, que partium quibus
man. Many diseases of the nostrils also, and of the parts by which

genus nervosum nimis sentiens; ut in febribus quibusdam, in phrenitide, in *hysteriâ*, aliquando observatur.

220. Obtunditur sæpius, aut a vitiis cerebri nervorumque, veluti a vi capiti illata, vel a causa interna, provenientes; aut a vitio ipsius organi, aridi, propter solitos humores suppressos, vel alio versos, vel nimia mucî lachrymarumque copia obruti. Utriusque exemplum est in gravidine, ubi initio morbi nares arescunt, postea vero vel multo humore inundantur, vel spissiore muco obstuuntur. Sed in his aliisque bene multis exemplis, membrana nasi ipsa afficitur, inflammatione, relaxatione,

tensione nimia, qua fieri non potest quin nervi, qui magnam ejus partem efficiunt, vitentur. Porro, quicquid liberum aëris in nares introitum, aut ipsius per eas transitum impedit, olfactui non obesse non potest.

221. Depravatur nonnumquam olfactus, et odores percipiuntur, ubi nihil odorati fuit, vel odores rerum percipiuntur a veris et solitis alieni. Particulæ odoratæ, post longam in antris moram, demum erumpentes, et organum denuo afficientes, hujusmodi depravationem, in sanissimo etiam homine, nonnumquam efficiunt. Multa quoque vitia narium, partiumque quibus ad eas iter patet, ulcera, caries, cancer, corrup-

iter ad eas patet, ulcera, caries, cancer, quævis corruptio
the passage to them lies open, ulcers, caries, cancer, any corruption
 oris, dentium, gutturis, pulmonis, etiam prava concoctio
of the mouth, of the teeth, of the throat, of the lungs, also depraved concoction
 in ventriculo, exhalando fœtidum vaporem, possunt corrumpere olfactum.
in the stomach, by exhaling a fœtid vapour, may corrupt smell.
 Fortasse interdum depravatur a vitiis cerebri que nervorum,
Perhaps sometimes it is depraved from disorders of the brain and of the nerves,
 ratio quorum est magis obscura.
the reason of which is more obscure.

CAP. VIII.

CHAP. VIII.

De auditu; sonis; et vitiis auditûs.
 Of hearing; sounds; and the disorders of hearing.

222. Hic sensus excitatur tremoribus aëris quos sonantia
This sense is excited by the tremors of the air which the sounding
 corpora faciunt. Externa cartilaginosa auris, et uterque meatus auris,
bodies cause. The external cartilaginous ear, and both meatus of the ear,
 colligunt hos (sc. tremores), deferunt ad tympanum, et simul
collect these, carry them to the tympanum, and at the same time
 intendunt, quo feriant membranam tympani majore
increase their intensity, that they may strike the membrana tympani with greater
 vi. Hæc membrana, ipsa commota et tremens, commovet malleum
force. This membrane, itself moved and trembling, moves the malleus
 annexum sibi, et facit ferire incudem junctam sibi, propriis
annexed to it, and causes it to strike the incus joined to it, the proper
 musculis mallei juvantibus simul. Vero incus impertit
muscles of the malleus assisting at the same time. But the incus imparts
 suum motum orbiculari ossi et stapedi, qui iterum trahitur,
its own motion to the orbicular bone and stapes, which again is drawn,
 tum hōc motū, tum quoque actione sui muscoli, ita ut
as well by this motion, as also by the action of its own muscle, so that
 posterior pars baseos ejûs impellatur in ovalem fenestram que
the posterior part of the base of it is driven into the oval window and
 vestibulum ipsum. Porro, tremores membranæ tympani
the vestibule itself. Moreover, the tremors of the membrana tympani

tio quævis oris, dentium, gutturis, pulmonis, prava etiam in ventriculo concoctio, vaporem fœtidum exhalando, olfactum corrumpere possunt. Depravatur interdum fortasse a vitiis cerebri nervorumque, quorum ratio magis obscura est.

CAP. VIII.—*De auditu, sonis, et vitiis auditûs.*

222. Hic sensus excitatur tremoribus aëris, quos corpora sonantia faciunt. Hos auris externa, cartilaginosa, et meatus auris uterque,

colligunt, ad tympanum deferunt, et simul intendunt, quo majore vi membranam tympani feriant. Hæc membrana, ipsa commota et tremens, malleum sibi annexum commovet, et junctam sibi incudem ferire facit; juvantibus simul propriis mallei musculis. Incus vero suum motum ossi orbiculari et stapedi impertit, qui iterum, tum hoc motu, tum quoque actione sui muscoli, ita trahitur, ut pars posterior ejus baseos in fenestram ovalem, ipsumque vestibulum, impellatur. Porro, tremores membranæ

communicantur simul cum aëre delato per
are communicated at the same time with the air carried (transmitted) through
 Eustachianam tubam in tympanum; qui aër demum ferit
the Eustachian tube to the tympanum; which air at last strikes
 membranam rotundæ fenestræ, quâ pervenitur (impus. ponitur) in
the membrane of the round window, by which it is come (there is a passage) into
 labyrinthum seu intimam aurem. Igitur tremores perveniunt
the labyrinth or innermost ear. Therefore the tremors come

duplici modo, ut videtur, ad labyrinthum, qui totus (sc. labyrinth.)
in a twofold manner, as it appears, to the labyrinth, which entire (the entire of
 obductus mollissimâ et admodum sentiente nervosâ membranâ,
which) covered with a very soft and very sentient nervous membrane,
 et plenus pellucidâ subrubrâ aquulâ, aptissimâ ad suscipiendos
and full of a pellucid reddish little water, very fit to receive
 et propagandos omnes tremores, est ultimum organum auditûs.
and propagate all tremors, is the chief (immediate) organ of hearing.

223. Neque sane est quicquam notum certâ fide
Nor truly is any thing known with certain confidence (with certainty)
 de actionibus singularum partium internæ auris, præterquam
of the actions of the individual parts of the internal ear, except
 ossicula ipsa esse aptissima ad suscipiendos et reddendos
that the little bones themselves are very fit to receive and to return
 vel propagandos tremores, et ideo (ossicula) conferre ad auditum:
or propagate tremors, and that thus they contribute to hearing:
 ita ut soni perveniant, per dentes, et maxillam, et petrosum os,
so that sounds can come, through the teeth, and maxilla, and petrous bone,
 ad ultimam nervosam partem organi, et sic homo, fere surdus,
to the ultimate nervous part of the organ, and thus a man, almost deaf,
 neque audiens per aëra, fruatur quodammodo musicâ.
nor hearing through the air, may enjoy in some degree music.

Potius confitendum est (sup. nobis) multum obscuri subesse
We must rather confess that much of obscurity exists
 hic, et actionem et usus multarum partium quæ sunt in aure
here, and that the action and uses of many parts which are in the ear
 adhuc parum intelligi.
are as yet little understood.

224. Soni sunt fortes vel debiles, graves vel acuti. Magnitudo vel
Sounds are loud or low, grave or acute. The magnitude or
 claritas soni pendet a vi seu magnitudine tremorum quos
loudness of sound depends upon the force or magnitude of the tremors which
 sonans corpus impertit aëri; gravitas a numero tremorum
the sounding body imparts to the air; graveness upon the number of tremors

tympani, cum aëre per tubam Eustachianam in tympanum delato, simul communicantur; qui demum aër fenestræ rotundæ membranam ferit, qua in labyrinthum, seu aurem intimam, pervenitur. Duplice igitur, ut videtur, modo, tremores ad labyrinthum perveniunt, qui totus mollissima et admodum sentiente nervosa membrana obductus, et aquula pellucida, subrubra, ad omnes tremores suscipiendos et propagandos aptissima plenus, ultimum auditus organum est.

223. Neque sane quicquam certa fide de singularum auris internæ partium actionibus no-

tum est, præterquam ossicula ipsa ad tremores suscipiendos et reddendos vel propagandos aptissima esse, et ideo ad auditum conferre: ita ut per dentes et maxillam, et petrosum os, soni ad ultimam nervosam organi partem perveniant, et sic homo fere surdus, neque per aëra audiens, musica quodammodo fruatur. Potius confitendum est, multum hic subesse obscuri, et actionem et usus multarum partium, quæ in aure sunt, parum adhuc intelligi.

224. Soni sunt fortes vel debiles, graves vel acuti. Soni magnitudo vel claritas pendet a vi seu magnitudine tremorum, quos corpus so-

qui absolvuntur dato tempore. Tamen, sunt certi
which are performed in a given time. Nevertheless, there are certain
 fines, citra et ultra quos est vel nullus sonus vel acerrimus,
limits, this side and beyond which there is either no sound or a very shrill one,
 et ingratisimus auri, que vix tolerabilis.
and very unpleasant to the ear, and scarcely tolerable.

225. Porro, vis soni intenditur repercussu
Moreover, the strength of sound is increased by the repercussion (reverberation)
 multorum corporum, quæ suscipiunt et reddunt tremores a
of the many bodies, which receive and return the vibrations from
 tremente aëre: itaque reflexi soni, quotquot concordant cum
the vibrating air: therefore the reflected sounds, as many as agree with
 primario (sono) feriunt aures unà cum eo, que faciunt eum
the primary strike the ears together with it, and make it
 fortiolem: hinc vox (sup. est) debilior sub pleno Jove quam in
stronger: hence the voice is weaker in the open air than in
 cubiculo. Quod si, reflexi soni perveniunt ad aures post certo
a chamber. But if, reflected sounds come to the ears after a certain
 intervallo, audiuntur distincti a primario, et sic echo fit.
interval, they are heard distinct from the primary, and thus echo is caused.

226. Varietas sonorum est immensa, quippe, quorum vel levisimæ
The variety of sounds is immense, as being things of which even the slightest
 mutationes et conjunctiones percipiuntur ab acutâ et doctâ aure.
changes and combinations can be perceived by the acute and taught ear.

Vis eorum (sonorum) quoque in animum hominis, et ideo in
The power of them also upon the mind of man, and therefore upon
 corpus, est insignis. Inspirant varios affectus animi, imprimis
the body, is remarkable. They inspire various affections of the mind, especially
 tristes et lætos; que multi hominem hauriunt puras et suavissimas
the sad and joyful; and many men drink pure and very sweet
 voluptates ex hoc inexhausto fonte. Vero auris, quæ vocatur
pleasures from this unexhausted fountain. But the ear, which is called
 musica, non datur omnibus: ratio cuius rei hactenus
musical, is not given to all: the explanation of which thing hitherto
 latet. Pendet nullo modo ab acutiore vel obtusiore auditu.
lies hid. It depends in no way upon a more acute or more obtuse hearing.

Semi-surdi sunt nonnunquam satis periti et amantissimi musicæ,
Half-deaf persons are sometimes sufficiently skilled and very fond of music,
 quâ (musica) audientes bene sæpe fruuntur parum; et vir, auditu
which those hearing well often enjoy little; and a man, the hearing
 manente integro, amisit subito, et sine nota causâ,
remaining perfect, has lost suddenly, and without a known (obvious) cause,

nans aëri impertit; gravitas a numero tremorum qui dato tempore absolvuntur. Sunt tamen certi fines, quos citra et ultra, vel nullus sonus est, vel acerrimus, et auri ingratisimus, vixque tolerabilis.

225. Porro, vis soni intenditur repercussu multorum corporum, quæ tremores a tremente aëre suscipiunt et reddunt. Soni itaque reflexi, quotquot eum primario concordant, una cum eo aures feriunt, eumque fortiolem faciunt: hinc vox sub pleno Jove debilior quam in cubiculo. Quod si, certo post intervallo, reflexi soni ad aures perveniunt, a primario distincti audiuntur, et sic echo fit.

226. Sonorum immensa varietas est: quippe quorum vel levisimæ mutationes et conjunctiones, ab acuta et docta aure, percipiuntur. Insignis quoque eorum vis est in animum hominis, et ideo in corpus. Varios animi affectus, tristes imprimis et lætos, inspirant; multique hominem ex hoc inexhausto fonte puras et suavissimas voluptates hauriunt. Auris vero, quæ vocatur musica, non omnibus datur; cuius rei ratio hactenus latet. Nullo modo pendet ab acutiore vel obtusiore auditu. Semi-surdi nonnunquam musicæ satis periti sunt et amantissimi, quæ bene audientes parum sæpe fruuntur: et vir, auditu integro manente, au-

suam musicam aurem, quam habebat eximiam. Neque est ulla ratio
his musical. ear, which he had excellent. Nor is there any reason
 cur imputemus talem defectum inæquali auditui per binas aures.
why we should impute such a defect to an unequal hearing by both ears.

Facultas ipsa est donum Naturæ, acquirenda nullo studio: vero
The faculty itself is a gift of Nature, to be acquired by no study: but
 acuitur et roboratur in mirum modum cultû, et
it is sharpened, and is strengthened in a wonderful manner by cultivation, and
 usû non secus ac reliquæ facultates hominis.
by use not otherwise than as the other faculties of man.

227. Auditus fere omnium sensuum vitatur sæpissime, quod profecto
Hearing nearly of all the senses is disordered oftenest, which truly
 nil mirum; scilicet, quia habet delicatissimum organum, et
(is) no way wonderful; that is, because it has a very delicate organ, and
 compositum ex plurimis et valde minutis partibus.
composed (made up) of very many and very minute parts.

228. Auditus sæpe fit acutior justo, vel a nimis
Hearing often becomes more acute than proper, either from a too
 irritabili generali habitû corporis, qualem hystericæ aut puerperæ fœminæ
irritable general habit of body, such as hysterical or puerperal women
 sæpe habent; vel a cerebro ipso sentiente nimis, quod
often have; or from the brain itself feeling too much (being too sensitive), which
 observatur haud raro in febris; tum quoque in phrenitide, et
is observed not unfrequently in fevers; as also in phrenitis, and
 aliquando, licet rarius, in verâ insanîâ; vel ab aure ipsâ
sometimes, though more rarely, in true insanity; or from the ear itself
 habente se male, et affectâ inflammatione, dolore, nimîâ
having itself badly, and being affected with inflammation, pain, too great
 tensione.
tension.

229. Hic sensus obtunditur vel plane aboletur; ita ut æger
This sense is blunted or completely abolished; so that the sick
 vel audiat graviter, vel fiat omnino surdus, fere similibus
either hears heavily, or becomes totally deaf, almost from similar
 causis, et diversis tantum gradû seu magnitudine; et, imprimis,
causes, and differing only in degree or extent; and, in the first place,
 a defectû externæ auriculæ, aut vel altero vel utroque meatu
from defect of the external little ear, or either one or both meatus
 obstructo muco, cerumine, pure, externis rebus; que
being obstructed with mucus, ear-wax, pus, external things; and
 concretionem ejûs, qualis observata est post suppurationem,
by the growing together of it, such as has been observed after suppuration,

rem suam musicam, quam eximiam habebat, subito et sine nota causa amisit. Neque ratio ulla est cur defectum talem inæquali per binas aures auditui imputemus. Facultas ipsa Naturæ donum est, nullo studio acquirenda: cultu vero et usu, non secus ac reliquæ hominis facultates, mirum in modum acuitur et roboratur.

227. Auditus fere omnium sensuum sæpissime vitatur; quod profecto nil mirum; scilicet, quia organum habet delicatissimum, et ex plurimis et valde minutis partibus compositum.

228. Sæpe acutior justo fit auditus, vel a generali corporis habitu nimis irritabili, qualem

fœminæ hystericæ aut puerperæ sæpe habent; vel a cerebro ipso nimis sentiente, quod in febris haud raro observatur; tum quoque in phrenitide, et aliquando, licet rarius, in vera insanîâ; vel ab aure ipsa male se habente, et inflammatione, dolore, tensione nimia, affecta.

229. Obtunditur vel plane aboletur hic sensus, ita ut æger vel graviter audiat, vel omnino surdus fiat, similibus fere causis et gradû tantum seu magnitudine diversis; et imprimis a defectu auriculæ externæ, aut meatu vel altero vel utroque, muco, cerumine, pure, rebus, externis, obstructo; ejusque concretionem, qualis post suppurationem, nonnunquam post variolam,

nonnunquam post variolam, vel propter membranam
sometimes after variola (small-pox), or on account of the membrana
 tympani factam rigidam, aut relaxatam, aut erosam, aut ruptam;
tympani (having) become stiff, or relaxed, or eroded, or broken;
 vel tympanum ipsum vel Eustachianam tubam obstructam aliquo
or the tympanum itself or the Eustachian tube obstructed in some
 modo; vel propter aliquem ossiculorum, aut membranarum
manner; or on account of some one of the little bones, or of the membranes
 aut musculorum labyrinthi ipsius affectum concretionem, spasmum,
or of the muscles of the labyrinth itself affected by a growing together, by spasm,
 paralyti, torpore; et, denique, propter varia vitia cerebri ve
paralysis, torpor; and, lastly, on account of various disorders of the brain or
 nervorum, fabricam organi ipsius omnino salvam. Hinc
of the nerves, the mechanism of the organ itself being wholly sound. Hence
 surditas (sup. est) sæpe morbus nervosi generis, invadens subito
deafness is often a disease of the nervous system, attacking suddenly
 et decedens sponte. Hinc quoque (sup. est) familiaris senibus,
and going off spontaneously. Hence also it is common to old men,
 quibus omnes solidæ partes rigent, omnes nervosæ (partes) sentiunt
in whom all the solid parts grow stiff, all the nervous ones feel
 minus.

less.

230. Laborantes febre, imprimis illo genere febris quod
Persons labouring under fever, especially that kind of fever which
 (genus) insignis debilitas et stupor solent comitari, sæpe
remarkable debility and stupor are accustomed to accompany, often
 fiunt surdi; quod forsitan aliquando accedens cum aliis signis
become deaf; which perhaps sometimes coming on with the other symptoms
 cerebri valde oppressi, que virium ægri exhaustarum,
of the brain being very much oppressed, and of the strength of the sick being exhausted,
 erit malum signum. Vero, plerumque, est optimi ominis, quamvis
will be a bad sign. But, for the most part, it is of the best omen, although
 etiam aliquis sopor comitetur. Ratio hujus rei (sup. est)
even some drowsiness should accompany it. The cause of this thing is
 satis obscura, neque alia fortasse quam quod talis surditas
sufficiently obscure, nor other perhaps than that such deafness
 pendeat a statu cerebri, morbidum certe, sed suam naturam vix
depends upon a state of the brain, morbid truly, but in its nature scarcely
 periculoso; cum auditus, acutior justo, fit propter
dangcrous; whereas hearing, more acute than proper, takes place on account of

observata est; vel propter membranam tympani rigidam factam, aut relaxatam, aut erosam, aut ruptam; vel tympanum ipsum vel tubam Eustachianam aliquo modo obstructam; vel propter ossiculorum, aut membranarum, aut musculorum aliquem labyrinthi ipsius, concretionem, spasmum, paralyti, torpore, affectum; et denique propter varia cerebri nervorum vitia, salva omnino ipsius organi fabrica. Hinc sæpe morbus nervosi generis surditas, subito invadens et sponte decedens. Hinc quoque senibus familiaris, quibus omnes partes solidæ rigent, omnes nervosæ minus sentiunt.

230. Febre laborantes, illo imprimis febris genere, quod debilitas insignis et stupor comitari solent, sæpe surdi fiunt: quod forsitan aliquando, cum aliis signis cerebri valde oppressi, viriumque ægri exhaustarum accedens, malum signum erit. Plerumque vero optimi ominis est, quamvis etiam sopor aliquis comitetur. Hujus rei ratio satis obscura; neque alia fortasse, quam quod talis surditas pendeat a statu cerebri morbidum certe, sed sua natura vix periculoso; cum acutior justo auditus fit propter aliquid inflammationis cerebro obrepentis, quæ semper valde periculosa est.

aliquid inflammationis obrepentis cerebro, quæ est semper valde
some degree of inflammation creeping in to the brain, which is always very
 periculosa.
dangerous.

231. Auditus sæpe depravatur potissimum hac ratione, ut soni,
Hearing often is depraved chiefly in this manner, that sounds,
 veluti tympani, campanæ, lapsûs aquarum, audiantur, cum nullus
as of a drum, of a bell, of the falling of waters, are heard, when no.
 tremor est in aëre, neque sanus homo audit quidquam.
vibration is in the air, nor does a healthy man hear any thing.
 Hoc malum vocatur tinnitus aurium, cujus varia genera observata
This disorder is called ringing of the ears, of which different kinds have been
 sunt. Plerumque leve et fugax malum, vero nonnunquam
observed. For the most part a slight and transient disorder, but sometimes
 pertinax, diuturnum, molestissimum, vexat diu que noctu.
obstinate, long continued, very troublesome, torments by day and by night.

232. Aures sæpe tinniunt à levissimâ causâ, obstruente pro parte
The ears often ring from a very slight cause, obstructing in part
 meatum ipsum vel Eustachianam tubam, ita ut imperfectus interruptus
the meatus itself or Eustachian tube, so that an imperfect interrupted
 aditus concedatur aëri, quo fit ut hic (aër) feriat membranam
entrance is afforded to the air, by which it happens that this strikes the membrana
 tympani, vel fortasse interiores parte, inæqualiter et nimio impetu:
tympani, or perhaps the interior parts, unequally and with too much impetus:
 hinc bombi, species tinnitûs, audiuntur inter hianthum, etiam a
hence hummings, a species of ringing, are heard during the day, even by
 sanissimo homine.
the healthiest man.

233. Frequentior et molestior tinnitus comitatur multos morbos,
A more frequent and more troublesome ringing accompanies many diseases,
 tum febres tum affectiones nervosi generis, partim ab aucto
as well fevers as affections of the nervous system, partly from increased
 impetû sanguinis versus caput, que sensû nervosi generis
impetus of blood towards the head, and the sensibility of the nervous system
 aucto simul, ita ut ictus arteriarum
being increased at the same time, so that the strokes (pulsations) of the arteries
 ipsarum audiantur; partim ab aucto sensu et mobilitate
themselves are heard; partly from increased sensibility and mobility
 nervorum et musculorum labyrinthi auris; quo fit ut
of the nerves and of the muscles of the labyrinth of the ear; by which it happens that
 partes quæ debant quiescere donec essent excitatæ
parts which ought to remain quiet until they had been excited

231. Depravatur sæpe auditus hac potissimum
 ratione, ut soni, veluti tympani, campanæ,
 lapsus, aquarum, audiantur, cum nullus in aëre
 tremor est, neque sanus homo quidquam audit.
 Hoc malum tinnitus aurium vocatur, cujus
 varia genera observata sunt. Leve plerumque
 et fugax malum: nonnunquam vero pertinax,
 diuturnum, molestissimum, diu noctuque vexat.
 232. Tinnunt sæpe aures a levissima causa,
 meatum ipsum vel tubam Eustachianam pro
 parte obstruente, ita ut imperfectus, interruptus
 aëri aditus concedatur; quo fit ut hic mem-

branam tympani, vel fortasse partes interiores,
 inæqualiter, et impetu nimio, feriat. Hinc
 bombi, tinnitûs species, etiam a sanissimo ho-
 mine, inter hianthum audiuntur.

233. Frequentior et molestior tinnitus multos morbos, tum febres, tum nervosi generis
 affectiones, comitatur: partim ab aucto san-
 guinis caput versus impetu, auctoque simul
 nervosi generis sensu, ita ut ipsarum arteriarum
 ictus audiantur; partim ab aucto nervorum et
 musculorum auris labyrinthi sensu et mobili-
 tate; quo fit, ut partes quæ debant quiescere

tremoribus aëris, concipiant motus suâ sponte, que
 by the vibrations of the air, take on motions of their own accord, and
 impertiantur eosdem (motus) aliis partibus, jam nimis sentientibus.
 impart the same to other parts, already too sentient.

234. Tinnitus oritur quoque a vehemente affectû animi: interdum
 Ringing arises also from a violent affection of the mind: sometimes
 nascitur a ventriculo habente se male: interdum
 it arises from the stomach having itself badly: sometimes
 a rheumatico malo afficiente caput et aures, vel à gravedine,
 from a rheumatic disorder affecting the head and ears, or from stuffing in
 quæ solet afficere tubam (sc. Eustachianam): vero
 the head, which is accustomed to affect the tube: but
 nonnunquam tinnitus solus invadit, profecto non exiguum malum.
 sometimes ringing alone seizes, truly a no slight disorder:

235. Tamen, variæ causæ, tum hujus tum aliorum
 Nevertheless, the various causes, as well of this as of the other
 vitiorum auditûs sæpe dignoscuntur difficillime, non magis propter
 disorders of hearing often are distinguished very difficultly, not more on account of
 abditum situm organi quam propter parum accuratam
 the hidden situation of the organ than on account of the little accurate
 notitiam quam habemus actionum variorum partium ejûs. Vero
 knowledge which we have of the actions of the various parts of it. But
 ex utrâque causâ fit ut multiplices affectiones auditûs
 from both cause it happens that the manifold affections of the hearing
 sanentur neque certè neque facilè.
 are caused neither certainly nor easily.

CAP. IX.

CHAP. IX.

De visu, que varietatibus et vitiis ejûs.
 Of vision, and the varieties and disorders of it.

236. Radii, dimanantes vel reflexi ab omni puncto lucentis
 The rays, flowing or reflected from every point of a shining
 vel illuminati corporis, quod contemplamur, incidunt in corneam,
 or illuminated body, which we look at, fall upon the cornea,
 membranam oculi: (ii, sc. radii) qui sunt valde obliqui reflexi, vel
 a membrane of the eye: those which are very oblique reflected, or

donec aëris tremoribus excitatæ essent, sua sponte motus concipiant, eosdemque aliis partibus, jam nimis sentientibus, impertiantur.

234. Oritur quoque tinnitus a vehemente animi affectu: interdum a ventriculo male se habente nascitur: interdum a malo rheumatico caput et aures afficiente, vel a gravedine quæ tubam afficere solet: nonnunquam vero tinnitus solus invadit, malum profecto non exiguum.

235. Variæ tamen causæ, tum hujus tum aliorum auditûs vitiorum, sæpe difficillime dignos-

cuntur, non magis propter abditum organi situm, quam propter notitiam variarum ejus partium actionum, quam parum accuratam habemus. Ex utraque vero causa fit, ut multiplices auditus affectiones neque certe neque facile sanentur.

CAP. IX.—De visu, ejusque varietatibus et vitiis.
 236. Radii, ab omni puncto corporis lucentis vel illuminati quod contemplamur dimanantes, vel reflexi, in corneam oculi membranam incidunt: qui valde obliqui sunt, reflexi, vel in ucca

suffocati in uveâ, vel pigmento nigro quod oblini*t ciliares*
extinguished in the uvea, or the pigmentum nigrum which lines the ciliary
processus, nunquam perveniunt ad interiores partes oculi: vero radii
processes, never come to the interior parts of the eye: but the rays
 qui incidunt rectius in corneam transmissi per illam
which fall more directly upon the cornea transmitted through that
 pellucidam membranam et aquosum humorem qui jacet proxime
pellucid membrane and the aqueous humour which lies next it
 perveniunt, jam haud parum refracti, ad crystallinam lentem.
come, already not a little refracted, to the crystalline lens.

Vi hujus lentis et vitrei humoris, qui est proximus,
By the power of this lens and of the vitreous humour, which is next it,
 refringuntur adhuc magis, et demum colliguntur in punctum, seu
they are refracted still more, and at length are collected into a point, or
focum, ut vocatur, depicturi super retinam pulcherrimam, distinctam,
focus, as it is called, to depict upon the retina a very beautiful, distinct,
 quamvis inversam, imaginem corporis unde profluxerant.
although inverted, image of the body whence (from which) they had flowed.

237. Vero hæc delicatissima nervosa membrana est ultimum organum
But this very delicate nervous membrane is the immediate organ
 visûs; et ex inversâ imagine corporis depictâ super
of vision; and from the inverted image of the body painted upon
 eam (sc. retinam) homo sanus (sup. secundum) cerebrum que opticum
it a man healthy as to the brain and the optic
 nervum, videt corpus ipsum erectum, distinctum, que expressum
nerve, sees the body itself erect, distinct, and expressed
 propriis coloribus.
in its proper colours.

238. Varii humores oculi dantur à Naturâ moliente
The various humours of the eye are given by Nature contriving
 nihil frustra, quamvis unus sufficisset ad refringendos radios,
nothing in vain, although one would have sufficed to refract the rays,
 et colligendos in focum, que exprimentam imaginem in
and to collect them into a focus, and to express the image upon
 retinam, potissimum, ut videtur, hoc consilio, ut præca-
the retina, chiefly, as it appears, with this design, that it might
 veretur ab alieno colore, quem una et simplex
be guarded from (to prevent) a foreign colour, which a single and simple
 lens solet dare, propter radios lucis refractos
lens is accustomed to produce, on account of the rays of light (being) refracted
 inæqualiter; et sic homo posset judicare de veris coloribus
unequally; and thus man might judge of the true colours

vel pigmento nigro, quod *processus ciliares* oblini-
 nit, suffocatis ad interiores oculi partes nun-
 quam perveniunt: qui vero rectius in *corneam*
 incidunt radii, per pellucidam illam membra-
 nam, et qui proxime jacet humorem aquosum
 transmissi, ad *lentem crystallinam* jam haud
 parum refracti perveniunt. Vi hujus *lentis*, et
 vitrei humoris, qui proximus est, magis adhuc
 refringuntur, et in punctum, seu *focum*, ut vo-
 catur, demum colliguntur, pulcherrimam, dis-
 tinctam, quamvis inversam, corporis unde
 profluxerant imaginem super *retinam* depicturi.
 237. Hæc vero delicatissima nervosa mem-
 brana, ultimum visus organum est; et ex ima-

gine corporis inversa super eam depicta, homo,
 cerebrum nervumque opticum sanus, corpus
 ipsum, erectum, distinctum, propriisque colo-
 ribus expressum, videt.

238. Varii dantur oculi humores a Natura
 nihil frustra moliente, quamvis unus ad radios
 refringendos, et in *focum* colligendos, imagi-
 nemque in *retinam* exprimentam sufficisset,
 hoc potissimum, ut videtur, consilio, ut ab
 alieno colore, quem una et simplex *lens* dare
 solet, propter radios lucis inæqualiter refractos
 præcaveretur: et sic homo, qua oportebat ac-
 curatione, de veris corporum coloribus judicare

corporum accuratione quâ oportebat. Enim con-
of bodies with the accuracy which it behoved (was necessary). For it is well
 stat, certissimis experimentis, lentem compositam certa
established, by most certain experiments, that a lens constructed in a certain
 ratione carere hoc non levi incommodo simplicioris (sc. lentis).
manner wants this no slight disadvantage of a more simple one.

Varia densitas singulorum humorum variis partibus
The various density of the individual humours in the various parts
 oculi videtur conferre haud parum ad eundem finem:
of the eye seems to contribute not a little to the same end (object):
 quâ fortasse variâ refringente vi, diversa facilitas
by which perhaps various refracting power, the different facility
 radiorum ipsorum ad refringendum compensatur.
of the rays themselves to be refracted is compensated.

239. Neque profecto est minima utilitas vitrei
Nor truly is it the least utility (least important use) of the vitreous
 humoris, qui omnium efficit longe maximam partem humorum oculi,
humour, which of all forms by far the greatest portion of the humours of the eye,
 implere globum oculi, que distendere probe retinam, ita ut
to fill up the globe of the eye, and to distend properly the retina, so that
 repræsentet fere concavam spheram, quo plura
it may represent (as to represent) almost a concave sphere, that the several
 puncta ejus accipiant distinctas et accuratas imagines visibilium
points of it may receive distinct and accurate images of visible
 rerum: nam si fundus oculi fuisset planior vel fere cujuslibet
objects: for if the bottom of the eye had been flatter or almost of any
 aliâ figurâ quam rotundæ, tantum unum punctum retinæ, puta
other figure than round, only one point of the retina, to wit
 centrum ejus, propter inæqualem distantiam variarum partium
the centre of it, on account of the unequal distance of the various parts
 ejus (sc. retinæ) a centro oculi, habuisset distinctum visum.
of it from the centre of the eye, would have had distinct vision.
 Vero radii qui incidissent in alia puncta, vel
But the rays which would have (had) fallen upon the other points, either
 nondum satis refracti, vel postquam essent semel collecti
not yet sufficiently refracted, or after they were once collected
 in focum, dimanantes iterum, corrumpissent visum multum,
into a focus, diverging again, would have (had) corrupted vision much,
 confusâ imagine depictâ super retinam.
a confused image being painted upon the retina.

240. Oculus est rotundus, ut radii transeuntes per eum
The eye is round, that the rays passing through it

posset. Certissimis enim experimentis constat
lentem, certa ratione compositam, hoc non levi
 simplicioris incommodo carere. Ad eundem
finem haud parum conferre videtur, varia sin-
 gulorum oculi humorum variis partibus densi-
tas: qua fortasse varia vi refringente, diversa
 ipsorum radiorum ad refringendum facilitas
compensatur.

239. Neque profecto minima humoris vitrei,
 qui omnium oculi humorum longe maximam
 partem efficit, utilitas est, globum oculi im-
 plere, retinamque probe distendere, ita ut fere
 spheram concavam repræsentet, quo plura ejus

puncta imagines rerum visibilium distinctas
 et accuratas accipiant: nam si planior fuisset
 oculi fundus, vel cujuslibet fere alius figurâ
 quam rotundæ, propter inæqualem variarum
 ejus partium a centro oculi distantiam, unum
 tantum retinæ punctum, puta centrum ejus,
 distinctum visum habuisset. Qui vero in alia
 puncta incidissent radii, vel nondum satis re-
 fracti, vel postquam in focum semel collecti
 essent, dimanantes iterum, imagine confusa
 super retinam depicta, visum multum corrup-
 pissent.

240. Rotundus est oculus, ut radii per eum

colligantur in justum focum, priusquam incidant in retinam.
may be collected into a proper focus, before that they can fall upon the retina.

Ratio est par convexæ prominentis corneæ, quæ fere
The explanation is similar of the convex prominent cornea, which commonly
 tanto magis prominēt, quanto oculus est datus planior
is so much the more prominent, as the eye has been given flatter
 animali. Quin et rotunditas oculi confert haud parum ad
to the animal. Moreover the roundness of the eye contributes not a little to
 liberrimum et rapidissimum motum ejūs.
the very free and very rapid motion of it.

241. Mira conspiratio seu consensus observatur inter binos
A wonderful agreement or consent is observed between the two
 oculos, que inter varias partes oculi. Alter oculus, suâ
eyes, and between the various parts of the eye. The one eye, of its own
 sponte, sequitur motum alteriūs, hæc ratione, ut axes
accord, follows the motion of the other, for this reason, that the axes
 utriūsque sint semper paralleli, et dirigantur, non nisi conatū
of both may be always parallel, and be directed, only by the effort
 hominis, illo quidem levi, et facto per instinctum et quasi
of the man, that indeed slight, and made by instinct and as it were
 sponte, in idem punctum corporis quod contemplatur; quo
spontaneously, to the same point of the body which it looks at; by which
 fit, ut imago ejūs exprimat prope centrum utriūsque retinæ;
it happens, that an image of it is expressed near the centre of both retina,
 nam ibi loci visus est fere semper perfectissimus.
for in that part vision is almost always most perfect.

242. Pupilla patula in tenebris, luce admissa vel
The pupil open (dilated) in the dark, the light being admitted or
 factâ vividior, contrahitur statim; et hoc est plane tri-
made more vivid, is contracted immediately; and this is evidently to be at-
 tribuendum consensui inter retinam et muscolum, qui regit
tributed to the consent between the retina and the muscle, which regulates
 pupillam, que vel arctat vel amplificat eam (sc. pu-
the pupil, and either straitens or enlarges (contracts or dilates) it,
 pillam) neque omnino irritationi musculi ipsiūs. Nam isto musculo
and not at all to irritation of the muscle itself. For that muscle
 prorsus sano, si est nullus visus, nulla contractio
being perfectly healthy, if there is no vision, no contraction
 pupillæ fit. Quin et musculi pupillarum utriūsque oculi
of the pupil takes place. Moreover the muscles of the pupils of both eyes

ranseunt in justum focum prius colligantur
 uam in retinam incidant. Par ratio est
 orneæ convexæ, prominentis quæ fere tanto
 angis prominēt, quanto planior oculus ani-
 mali datus est. Quin et rotunditas oculi ad
 liberrimum et rapidissimum ejus motum haud
 arum confert.

241. Mira conspiratio vel consensus inter
 binos oculos, interque varias oculi partes, ob-
 servatur. Alter oculus motum alterius sua
 sponte sequitur, hæc ratione, ut axes utriusque
 semper paralleli sint; et non nisi hominis
 conatu, levi quidem illo, et per instinctum

et quasi sponte facto, in idem punctum cor-
 poris, quod contemplatur, dirigantur; quo fit,
 ut imago ejus prope centrum utriusque retinæ
 exprimat; nam ibi loci fere semper perfec-
 tissimus est visus.

242. Pupilla in tenebris patula, admissa vel
 vividior facta luce, statim contrahitur: et
 hoc consensui inter retinam et muscolum qui
 pupillam regit, eamque vel arctat vel ampli-
 ficat, plane tribuendum est, neque omnino irri-
 tationi ipsius musculi. Nam sano prorsus
 musculo isto, si nullus visus est, nulla fit
 pupillæ contractio. Quin et musculi pupil-

conspirant, ita ut luce admissâ ad alterum oculum, pupillæ
agree, so that the light being admitted to one eye, the pupils
utriusque contrahantur simul.
of both are contracted at the same time.

243. Pupilla contrahitur quoque, si intuemur quid accurate
The pupil is contracted also, if we look at any thing accurately
proprius oculo quam soliti limites distincti visûs, hoc
nearer to the eye than the usual limits of distinct vision, with this
consilio, ut videtur, ut superflui et maxime obliqui radii, et
design, as it appears, that the superfluous and most oblique rays, and
quos (radios) refringentes vires oculi vix potuissent colligere
which the refracting powers of the eye scarcely had been able to collect
in justum focus, excludantur. Ratio
(could have collected) into a proper focus, may be excluded. The reason
videtur esse par, quod infantibus et junioribus sit (pro habeat)
seems to be similar, that infants and young people have
pupilla admodum patula, senibus fere contractior,
the pupil very open (dilated), old men generally more contracted,
quibus (senibus) oculi solent fieri planiores. Nondum
in whom the eyes are accustomed to become flatter. It is not yet
constat pro certo, num oculus accomodet semet aliis
determined for certain, whether the eye can accommodate itself by other
modis quoque, ad varias distantias rerum quas contemplatur.
methods also, to the different distances of the objects which it views.
Vero nonnulli putarunt hunc esse usum ciliarium processuum;
But some have thought that this was the use of ciliary processes;
nempe ut dimoveant lentem à solitâ sede,
namely that they might remove (to remove) the lens from its usual seat (position),
et trahant longius à retinâ, quo radii refringantur magis,
and draw it further from the retina, that the rays may be refracted more,
priusquam incident in eam (retinam). Autem est certissimum, oculum,
before that they fall upon it. But it is very certain, that the eye,
vel his viribus tum musculi qui regit pupillam, tum
either by the powers as well of the muscle which regulates the pupil, as
ciliarium processuum, vel aliis minus cognitis, mutari quodammodo,
of the ciliary processes, or by others less known, is changed in some degree,
et intra certos limites, accommodari ad varias distantias
and within certain bounds, is accommodated to the various distances
rerum quas contemplatur.
of the objects which it looks at.

244. Disputatum est diu que multum inter physiologos,
It has been disputed a long time and a great deal between physiologists,

larum utriusque oculi conspirant; ita ut, admissa ad alterum oculum luce, utriusque simul pupillæ contrahantur.

243. Contrahitur quoque pupilla, siquid oculo proprius quam soliti limites distincti visus accurate intuemur; hoc, ut videtur, consilio, ut radii superflui et maxime obliqui, et quos vires oculi refringentes in justum focus vix potuissent colligere, excludantur. Par videtur esse ratio, quod pupilla infantibus et junioribus admodum patula, senibus fere contractior sit, quibus oculi planiores fieri solent. Nondum pro certo constat, num aliis quoque modis,

oculus ad varias rerum quas contemplatur distantias, semet accomodet: hunc vero nonnulli putarunt esse usum processuum ciliarium; nempe ut lentem a solita sede dimoveant, et longius a retina trahant, quo magis refringantur radii, priusquam in eam incident. Certissimum autem est, oculum, vel his viribus tum musculi qui pupillam regit, tum processuum ciliarium, vel aliis minus cognitis, quodammodo mutari, et ad varias rerum quas contemplatur distantias, intra certos limites, accommodari.

244. Diu multumque disputatum est inter

mathematicos, metaphysicos, quo pacto fiat, ut ab
 mathematicians, metaphysicians, by what means it happens, that from
 inversâ imagine depictâ super retinam, videamus rem
 an inverted image painted upon the retina, we should see the object
 ipsam erectam: et cur à duplici imagine, nimirum unâ expressâ
 itself erect: and why from a double image, namely one expressed
 in utroque oculo, una res tantum spectetur.
 in each eye, a single object only should be seen.

245. Res ipsæ parum utiles vetant medicum descendere.
 The things themselves no way useful forbid the physician to descend
 in hanc arenam, ubi tot viri magni nominis
 into this arena (dispute), where so many men of great name (reputation)
 exercuerunt semet non sine laude. Tamen juvat scire,
 have exercised themselves not without praise. Nevertheless it is useful to know,
 esse ventum (impers.) tandem ad hoc, simplicem legem esse
 that it is come at length to this, that the simple law has been
 latam a Natura de hac re, scilicet, ut omne visibile
 laid down by Nature concerning this thing, namely, that every visible thing
 spectetur secundum directionem rectæ lineæ transeuntis
 should be seen according to (in) the direction of a right line passing
 per centrum oculi, a puncto retinæ super quod
 through the centre of the eye, from the point of the retina upon which
 (sc. punctum) ejus imago fuerit depictâ. Experimenta neque argumenta
 its image was painted. Experiments nor arguments
 nondum prolata sunt, quæ ostendant dictam directionem esse
 have not yet been set forth, which shew that the said direction is
 veram mathematicâ accuratione: sed neque ullus error, vel
 true with mathematical accuracy: but neither any error, even
 levissimus, detectus est in hac re. Igitur oportet concludamus,
 the slightest, has been detected in this matter. Therefore we must conclude,
 ex experimentis jam institutis, directionem quâ visibile
 from the experiments already instituted, that the direction in which a visible
 punctum spectatur esse vel hanc vel quam proximam huic.
 point is seen is either this or the nearest possible to this (direction).
 Igitur homo sic constitutus, nimirum lege lata videndi
 Therefore man thus constituted, namely by a law laid down of seeing
 hujusmodi, si imago fuisset erecta, vidisset rem ipsam
 of this kind, if the image should be erect, would see the object itself
 inversam; et pari ratione quæ depinguntur inversæ, videt
 inverted; and for a similar reason what are painted inverted, he sees
 easdem erectas.
 the same erect.

physiologos, mathematicos, metaphysicos, quo pacto
 fiat, ut, ab inversa super retinam depicta ima-
 gine, rem ipsam erectam videamus: et cur a
 duplici imagiue, una nimirum in utroque
 oculo expressa, una tantum res spectetur.

245. Res ipsæ parum utiles vetant medicum
 in hanc arenam descendere, ubi tot magni uo-
 minis viri uon siue laude semet exercuerunt.
 Scire tamen juvat, ad hoc taudem ventum esse,
 simplicem de hac re latam esse a Natura le-
 gem, scilicet, ut omne visibile spectetur secun-
 dum directionem rectæ lineæ a puncto retinæ,
 super quod depicta fuerit ejus imago, per cen-

trum oculi traueuntis. Nondum prolata sunt
 experimenta neque argumenta, quæ ostendant
 dictam directionem, mathematica accuratione,
 esse veram: sed neque error ullus, vel levis-
 simus, in hac re detectus est. Oportet igitur
 ex jam iustitutis experimentis concludamus,
 directionem, qua punctum visibile spectatur,
 esse vel hanc, vel huic quam proximam. Homo
 igitur sic constitutus, hujusmodi nimirum
 videndi lege lata, si imago erecta fuisset,
 rem ipsam inversam vidisset; et pari ra-
 tione, quæ inversæ depinguntur, ensdem erec-
 tas videt.

246. Nec est verum, quod videretur primo intuitu simplicius
 Nor is it true, what might seem at first sight more simple
 et clarius, rem spectari secundum verum situm et
 and more clear, that an object is seen according to the true situation and
 directionem quem habet; vel secundum directionem radiorum
 direction which it has; or according to (in) the direction of the rays
 lucis incidentium aut in corneam, aut in retinam: enim
 of light falling either upon the cornea, or upon the retina: for
 facili experimento omne corpus potest spectari, non suo
 by an easy experiment every body may be seen, not in its own
 loco, vel pluribus locis eodem tempore; et radii lucis
 place, or in several places at the same time; and the rays of light
 dimanantes à quovis puncto, vel quum primum incidunt in
 emanating from any point, either when first they fall upon
 oculum, vel postquam, refracti a variis humoribus, perveniunt
 the eye, or after that, refracted by the various humours, they come
 ad fundum oculi, habent tot diversas directiones, ut si
 to the bottom of the eye, have so many different directions, that if
 visus penderet inde omne visibile spectatum variis
 vision depended thence (upon that) every visible (object) seen in different
 directionibus eodem tempore, videretur multiplex et confusum.
 directions at the same time, would seem multiplied and confused.

247. Quæstio de simplice visu a duplici imagine primo
 The question concerning simple vision from a double image at first
 proposita parum accurate, redacta est postea ad majorem
 propounded little accurately, was reduced afterwards to greater
 accuratorem: neque profecto est verum, visum esse semper simplicem
 accuracy: nor indeed is it true, that vision is always single
 in sanissimo homine. Est simplex vel duplex, prout oculi
 in the most healthy man. It is single or double, according as the eyes
 fuerint conversi variâ ratione in rem quam spectamus.
 shall be turned in a different manner upon the object which we look at.
 Si axes binorum oculorum fuerint directi in idem punctum,
 If the axes of both eyes should be directed to the same point,
 duplex imago ejus puncti, nimirum una (imago) expressa in
 the double image of that point, namely one expressed in
 centro utriusque retinæ, efficit simplicem visum. Porro, quotquot
 the centre of both retina, causes single vision. Moreover, whatever
 res sunt sitæ pari distantia ab oculo ad utrumque
 objects are situated at an equal distance from the eye on either
 latus talis puncti, spectantur simul simplices: scilicet, imagines
 side of such point, are seen at the same time single: that is, the images

246. Nec verum est, quod primo intuitu simplicius et clarius videretur, rem spectari secundum verum quem habet situm et directionem; vel secundum directionem radiorum lucis, aut in corneam aut in retinam incidentium; facili enim experimento spectari potest corpus omne, loco non suo vel pluribus locis eodem tempore; et radii lucis a puncto quovis dimanantes, vel quum primum in oculum incidunt, vel postquam, a variis humoribus refracti, ad fundum oculi perveniunt, tot diversas directiones habent, ut si visus inde penderet, omne visibile, variis eodem tempore direc-

tionibus spectatum, multiplex et confusum videretur.

247. Quæstio de simplice visu a duplici imagine, parum accurate primo proposita, postea ad majorem accuratorem redacta est: neque profecto verum est, visum in homine sanissimo semper esse simplicem. Simplex vel duplex est, prout oculi varia ratione in rem quam spectamus conversi fuerint. Si axes binorum oculorum in idem punctum directi fuerint, duplex imago ejus puncti, una nimirum in centro utriusque retinæ expressa, simplicem visum efficit. Porro, res quotquot pari ab oculo dis-

quarum depictæ super utramque retinam, habent similem situm
of which painted upon each retina, have a similar situation
 comparatum cum centro ejûs (retinæ). Igitur centra binarum
compared with the centre of it. Therefore the centres of the two
 retinarum, et puncta in iis quæ (puncta) habent similem situm,
retinæ, and the points in them which have a similar position,
 quod (attinet) ad centrum, nempe, supra vel infra, vel
as (relates) to the centre, namely, above or below, or
 dextrorsum vel sinistrorsum dicuntur consentire, vel dare simplicem
on the right or on the left are said to consent, or to produce simple
 visum. Vero res positæ propius vel remotiûs ab oculo, quam
vision. But objects placed nearer or more remotely from the eye, than
 punctum in quod axes oculorum conveniunt, possunt spectari
the point in which the axes of the eyes meet, can be seen
 simul cum illo (puncto), que visus earum (rerum) est
at the same time with it, and the vision of them is
 duplex. Ostenditur facile imagines earum rerum occupare partes
double. It is shewn easily that the images of those objects occupy parts
 utriûsque retinæ quæ (partes) ponuntur dissimiliter quod ad centrum:
of each retina which are situated dissimilarly as to the centre:
 nempe (imagines) depingi in dextra parte (centri) alteriûs oculi,
that is are painted on the right side of the one eye,
 in sinistra alteriûs. Igitur partes retinarum, positæ
on the left of the other. Therefore the parts of the retina, situated
 dissimiliter quod ad centra, non consentiunt, hoc est efficiunt
dissimilarly as to the centre, do not consent, that is they cause
 duplicem visum ejûsdem rei, imago cujus fuerit depicta
a double vision of that same object, the image of which was painted
 super utramque (retinam).
upon both.

248. Quædam varietates seu leviora vitia hujûs sensûs, quæ vix
Certain varieties or slighter defects of this sense, which scarcely
 habentur morbosa, observantur sæpe. Dicuntur Myopes, qui
are considered diseased, are observed often. They are called Myopes, who
 habent brevem visum, scilicet, qui vident nil clare et accurate,
have short sight, that is, who see nothing clearly and accurately,
 nisi admoveatur proxime ad oculum. Hoc fit propter
except it be moved very close to the eye. This takes place on account of
 radios lucis refractos nimis, collectos in focum nimis
the rays of light being refracted too much, being collected into a focus too
 cito, et dimanantes iterum a foco priusquam perveniant ad
soon, and diverging again from the focus before that they arrive at

tantia ad utrumque latus talis puncti sitæ sunt, simplices simul spectantur: quarum scilicet imagines super retinam utramque depictæ, similem cum centro ejus comparatum situm habent. Centra igitur binarum retinarum, et puncta in iis quæ similem quod ad centrum situm habent, supra, nempe, vel infra, vel dextrorsum, vel sinistrorsum, consentire dicuntur, vel simplicem visum dare. Res vero propius vel remotiûs ab oculo positæ, quam punctum in quod axes oculorum conveniunt, simul cum illo spectari possunt, earumque duplex visus est. Facile ostenditur imagines earum rerum partes retinæ utriusque occupare, quæ dissimi-

liter quod ad centrum ponuntur: nempe, in dextra parte alterius oculi, in sinistra alterius, depingi. Partes igitur retinarum, dissimiliter quod ad centra positæ, non consentiunt; hoc est, duplicem ejusdem rei, cujus super utramque imago depicta fuerit, visum efficiunt.

248. Varietates quædam, seu vitia leviora, hujus sensus, quæ vix morbosa habentur, sæpe observantur. Myopes dicuntur, qui visum brevem habent, scilicet, qui nil clare et accurate vident, nisi proxime ad oculum admoveatur. Hoc fit propter radios lucis nimis refractos, in focum nimis cito collectos, et iterum a foco dimanantes, priusquam ad retinam perveniant;

retinam ; quo fit ut depingant indistinctam imaginem
the retina ; by which it happens that they paint an indistinct image
 super eam. Frequentissima causa hujus vitii est, nimia convexitas
upon it. The most frequent cause of this defect is, a too great convexity
 totiùs oculi, vel cujusdam humoris ejus, veluti corneæ
of the whole eye, or of some one humour of it, as of the cornea
 prominentis nimis, &c. quæ refringit nimis
being prominent too much (too prominent), &c. which refracts too much
 radios lucis transeuntes per oculum. Incommodum, familiare
the rays of light passing through the eye. This inconvenience, common
 junioribus, sublevatur aliquando, ut fertur, dum senescunt :
to younger persons, is relieved sometimes, as it is said, whilst they are growing old
 (as they grow old) : quod tamen est minime perpetuum. Quum
levius vitium hujusmodi observatur primo, potest vinci
a slighter defect of this kind is observed at first, it may be conquered
 quodammodo, consuetudine contemplandi remotas res, que cohibendi
in some degree, by the practice of looking at remote objects, and of restraining
 oculos a valde minutis et vicinis rebus, non secus ac
the eyes from very minute and close objects, not otherwise than as
 idem vitium (potest) acquiri contrario usu : nimirum
the same defect may be acquired by the opposite practice : doubtless
 quia oculus quodammodo accommodat sese ad distantias rerum
because the eye in some manner accommodates itself to the distances of the objects
 quas contemplatur. Concavum vitrum, quod facit radios dimanare
which it looks at. A concave glass, which causes the rays to diverge
 plus priùsquam incidant in oculum, est simplicissimum et certissimum
more before that they fall upon the eye, is the most simple and certain
 auxilium *Myopibus.*
remedy for Myopes.

249. Vocantur *Presbyopes*, qui habent longum visum, confusum
They are called Presbyopes, who have long sight, confused
 vicinarum rerum, distinctum satis remotiorum. Hoc vitium
of close objects, distinct enough of more remote things. This defect
 ac alterum agnoscit contrarias causas; imprimis (agnoscit) nimis
and the other acknowledges contrary causes; in the first place a too
 planum oculum, quo spatium non datur refringendis radiis:
flat eye, by which space (room) is not afforded for refracting the rays :
 hinc malum, familiare senibus, etiam iis (senibus) qui viderant
hence this disorder, common to old men, even those who had seen

quo fit ut indistinctam super eam imaginem depingant. Causa hujus vitii frequentissima est, nimia totiùs oculi vel humoris ejus cujusdam convexitas, veluti corneæ nimis prominentis, &c. quæ radios lucis per oculum transeuntes nimis refringit. Incommodum, junioribus familiare, dum senescunt, aliquando, ut fertur, sublevatur: quod tamen minime perpetuum est. Quum primo levius hujusmodi vitium observatur, consuetudine res remotas contemplandi, oculosque a valde minutis et vicinis rebus cohibendi quodammodo vinci, non secus ac contrario usu idem vitium acquiri, potest:

nimirum, quia oculus quodammodo ad rerum, quas contemplatur, distantias sese accommodat (243). Vitrum concavum, quod radios plus facit dimanare priusquam in oculum incidant, simplicissimum est, et certissimum *Myopibus* auxilium.

249. *Presbyopes* vocantur, qui visum longum habent, vicinarum rerum confusum, remotiorum satis distinctum. Contrarias hoc vitium ac alterum agnoscit causas; oculum imprimis nimis planum, quo spatium refringendis radiis non datur; hinc senibus, etiam iis qui florentibus annis bene viderant, malum familiare, ra-

bene florentibus annis, solet sublevari usu
well in their flourishing years (age), is accustomed to be relieved by the use
 convexi vitri, ratione haud obscurâ.
of a convex glass, for a reason not obscure (for an obvious).

250. Dicuntur Hemeralopes, qui vident tantum interdiu, scilicet,
They are called Hemeralopes, who see only by day, that is to say,
 vividâ luce; vero crepusculo, aut nocte, vel per lunam, vel
in a strong light; but by twilight, or at night, or by the moon, or
 per lucernas, sunt pene vel penitus cæci. Vitium hujusmodi, in
by candles, are almost or entirely blind. A defect of this sort, in
 quibusdam exemplis visum est oriri à nimis contractâ et rigidâ
some examples has seemed to arise from a too contracted and stiff
 pupillâ, neque admittente sat debilioris lucis in oculum; autem
pupil, and not admitting enough of the weaker light into the eye; but
 in aliis (exemplis) a deficiente sensû retinæ ipsiûs; et
in others from deficient sensibility of the retina itself; and
 aliis causis adhuc magis obscuris, veluti cum prehenderit multos
from other causes still more obscure, as when it has seized many
 homines eodem tempore et loco, quod interdum observatum est.
persons at the same time and place, which sometimes has been observed.

251. Dicuntur Nyctalopes, qui vident noctu melius quam interdiu,
They are called Nyctalopes, who see by night better than by day,
 hoc est, valde debili luce, quam vividiore; genus vitii
that is, in a very weak light, than a stronger; a kind of defect
 rarum hominibus, imputandum nimis sentienti retinæ, nimis patulæ
unfrequent to men, to be imputed to a too sentient retina, to a too open
 pupillæ, minus valenti ad debitam contractionem. Etiam sanissimi
pupil, not adequate to the due contraction. Even the most healthy
 (homines) patiuntur incommodum hujusmodi, sed leve et fugax,
suffer an inconvenience of this sort, but slight and transient,
 qui postquam versati sunt diu in tenebris, subito
who after that they have been engaged a long time in the dark, suddenly
 prodeunt denuo ad lucem.
go forth again to the light.

252. Interna superficies totiûs oculi sublinitur nigro
The internal surface of the entire eye is coated with the black
 pigmento, quod (pigmentum) pertinet ad choroideam tunicam et
pigment, which belongs to the choroid coat and
 ciliaria ligamenta; fortasse hoc consilio, ut oculus fiat
the ciliary ligaments; perhaps with this design, that the eye may become
 perfectissima camera obscura, et imago depicta super retinam
a most perfect camera obscura, and the image painted upon the retina

ione haud obscura, usu vitri convexi sublevari solet.

250. *Hemeralopes* dicuntur, qui interdiu tantum, scilicet in vivida luce, vident; crepusculo vero, aut nocte, vel per lunam, vel per lucernas, pene vel penitus cæci sunt. Hujusmodi vitium, in quibusdam exemplis, oriri visum est a pupilla nimis contracta et rigida, neque satis debilioris in oculum admittente; in aliis autem, a deficiente ipsius retinæ sensu; et in aliis magis adhuc obscuris causis, veluti cum multos homines eodem tempore et loco prehenderit, quod interdum observatum est.

251. *Nyctalopes* dicuntur, qui noctu quam interdiu, hoc est, luce valde debili, quam vividiore, melius vident: rarum hominibus vitii genus, retinæ nimis sentienti, pupillæ nimis patulæ, ad debitam contractionem minus valenti, imputandum. Hujusmodi incommodum, sed leve et fugax, sanissimis etiam patiuntur, qui postquam diu in tenebris versati sunt, denuo ad lucem subito prodeunt.

252. Sublinitur totius oculi interna superficies pigmento nigro, quod ad choroideam tunicam et ligamenta ciliaria pertinet; hoc fortasse consilio, ut oculus perfectissima camera ob-

evadat accuratior, corrupta nullis reflexis radiis. Tamen, *may become more accurate, being corrupted by no reflected rays. Nevertheless,*
 constat esse quosdam miseros, vulgo dictos albos *it is established that there are certain miserable beings, commonly called white*
Æthiopes, quibus rubra choroidea data est non secus ac
Æthiopians, to whom a red choroid has been given not otherwise than
 albis cuniculis. Vero homines instructi tali choroideâ vident *to white rabbits. But persons furnished with such a choroid see*
 parum vel nihil interdiu. *little or not at all by day.*

253. Vero animalia quæ quærunt prædam sub nocte, genus *But animals which seek their prey by night, the tribe of the*
 felis, bubo, et similia, habent coloratam splendenter choroideam, *cat, the owl, and the like, have a coloured shining choroid,*
 quæ reflectit bene radios lucis. Hoc modo habent, ut quidam *which reflects well the rays of light. By this means they have, as some*
 putant, visum parum distinctum sed qui sufficiat ad *think, a vision little distinct (indistinct) but which suffices to*
 captandam prædam etiam in tenebris, quod tamen est nondum *take their prey even in the dark, which nevertheless has not yet*
 bene explicatum. His animalibus pupilla datur mobilissima, *been well explained. To these animals the pupil is given very mobile,*
 dilatans sese a tenuissimâ que vix visibili rimâ in magnum *dilatating itself from the smallest and scarcely visible chink into a large*
 circulum, secundum lumen quod est, et retina, ut videtur *circle, according to the light which exists, and the retina, as it seems*
 valde sentiens. Quædam ex his animalibus, instar albi Æthiopsis, *very sensitive. Some of these animals, like the white Æthiopian,*
 vident minus sole fulgente. An est (pro habet) omnibus par *see not so well the sun shining. Whether have all a like*
 vitium? Non videtur. An corrigitur arctissimâ contractione *defect? Does not appear. Or is it corrected by the very close contraction*
 pupillæ, quâ (sc. contractione) parum lucis admittitur in oculum? *of the pupil, by which little light is admitted into the eye?*
 An est credibile choroideam ipsam reflectere plus ve minus *Or is it credible that the choroid itself reflects more or less (of)*
 lucis, prout sit opus tali auxilio, et illam *light, as there may be need of such assistance, and that that*
 facultatem reflectendi lucem pendere iterum a influxu sanguinis *faculty of reflecting light depends again upon an influx of blood*
 in membranam plenam vasculorum, quem (sc. influxum) animal *into a membrane full of vessels, which (sc. influxum) animal*
 the animal

secura fiat, et imago super retinam depicta accuratior evadat, nullis radiis reflexis corrupta. Constat tamen miseros esse quosdam, albos Æthiopes vulgo dictos, quibus choroidea rubra, non secus ac cuniculis albis, data est. Homines vero tali choroideâ instructi interdiu parum vel nihil vident.

253. Animalia vero, quæ sub nocte prædam quærunt, genus felis, bubo, et similia, choroideam habent coloratam, splendenter, quæ radios lucis bene reflectit. Hoc modo, ut quidam putant, visum parum distinctum, sed qui ad prædam captandam sufficiat, etiam in tenebris habent; quod tamen nondum bene explicatum

est. His quoque animalibus pupilla datur mobilissima, a tenuissima vixque visibili rima, in magnum circulum, secuudum lumen quod est, sese dilatans, et retina, ut videtur, valde sentiens. Quædam ex his animalibus, albi Æthiopsis instar, fulgente sole minus vident. An omnibus par vitium est? Non videtur. Au arctissima pupillæ contractione corrigitur, quæ parum lucis in oculum admittitur? An credibile est plus minusve reflectere lucis choroideam ipsam, prout tali auxilio opus sit, et facultatem illam lucem reflectendi pendere iterum a sanguinis in membranam vasculorum plenam influxu, quem animal quodammodo regat?

quodammodo regat? Validior motus sanguinis, et ideo
in some measure can govern? A stronger motion of the blood, and consequently
 varii affectus animi, facit oculos omnium animalium, et
various affections of the mind, causes the eyes of all animals, and
 hominis ipsius, splendescere: deficiens (motus) hebetat; demum
of man himself, to shine: deficient renders them dull; finally
 cessans penitus, prorsus extinguit splendorem eorum.
ceasing entirely, wholly extinguishes the splendour of them.

254. Visus est obnoxius multis et gravibus vitiis. Interdum
Vision is liable to many and severe disorders. Sometimes
 acuitur ultra modum, ita ut æger vel vident nihil
it is sharpened beyond bounds, so that the sick either can see nothing
 distincte, vel non sine magno dolore, pari ratione ac alii
distinctly, or not without great pain, for the like reason as the other
 sensus, à nimis sentiente generali habitu corporis, à singulari
senses, from a too sensitive general habit of body, from a particular
 statu cerebri, familiari phreniticis, vel etiam aliis febrici-
state of brain, common to phrenitis, or even other persons suffering
 tantibus, veluti inflammatione cerebri vel membranarum ejus;
from fever, as in inflammation of the brain or of the membranes of it;
 vero sæpius finis impatientes lucis a conditione oculi
but more often we become impatient of light from the condition of the eye
 ipsius. Inflammatio tunicæ adnatæ, et anterioris partis
itself. Inflammation of the tunica adnata, and of the anterior part
 scleroticæ, solet serpere ad posteriores partes oculi; et
of the sclerotic, is accustomed to creep to the posterior parts of the eye; and
 ideo ad choroideam et retinam ipsam, hinc impatientia
consequently to the choroid and the retina itself, hence intolerance
 lucis, dolor, que magna irritatio, nonnunquam inducens vel
of light, pain, and great irritation, sometimes bringing on or
 augens delirium.
increasing delirium.

255. Visus sæpe obtunditur vel plane aboletur ætate ipsâ, cum
Vision often is blunted or wholly abolished by age itself, as well
 ob oculum factum planiorem, aquoso humore non bene
on account of the eye become flatter, the aqueous humour not being well
 suppleto, et corneâ et lente vel vitreo humore marcescentibus;
supplied, and the cornea and lens or vitreous humour wasting;
 tum quoque propter corneam factam siccam et obscuram, quod
as also on account of the cornea become dry and obscure, which
 est imputandum motui sanguinis languenti, et plurimis
is to be imputed to the motion of the blood languishing, and to many (of the)

Validior sanguinis motus, et ideo varii animi affectus, oculos omnium animalium, et hominis ipsius, splendescere facit: deficiens hebetat; penitus demum cessans eorum splendorem prorsus extinguit.

254. Multis et gravibus vitiis obnoxius est visus. Acuitur interdum ultra modum, ita ut æger vel nihil distincte vident, vel non sine magno dolore, pari ratione ac alii sensus, a generali corporis habitu nimis sentiente, a generali cerebri statu, phreniticis, vel etiam aliis febricitantibus, familiari, veluti inflammatione cerebri vel ejus membranarum; sæpius

vero a conditione ipsius oculi, lucis impatientes finis. Inflammatio tunicæ adnatæ, et partis anterioris scleroticæ, ad posteriores partes oculi serpere solet; et ideo ad choroideam, et retinam ipsam; hinc lucis impatientia, dolor, magna que irritatio, delirium nonnunquam inducens vel augens.

255. Obtunditur sæpe visus, vel plane aboletur, ipsa ætate, cum ob oculum planiorem factum, aquoso humore non bene suppleto, et corneâ, et lente, vel vitreo humore marcescentibus: tum quoque propter corneam siccam et obscuram factam, quod languenti sanguinis mo-

minoribus vasis obstructis, conclusis, excæcatis; tum propter
 minuter vessels being obstructed, closed, obliterated: as well on account of
 lentem flavescentem, factam instar electri, et retinam ipsam
 the lens becoming yellow, rendered like amber, and the retina itself
 minus sentientem: nam senectus minuit omnem sensum.
 less sensitive: for old age diminishes every kind of sensibility.

256. Interdum visus aboletur prorsus, cerebro, optico nervo, vel
 Sometimes vision is abolished entirely, by the brain, optic nerve, or
 retina, læsis variis modis, fabricâ oculi ipsius
 retina, being injured in various ways, the structure of the eye itself

salva. Vitium hujusmodi vocatur amaurosis, vel gutta serena:
 being sound. A disorder of this kind is called amaurosis, or gutta serena:
 facile distinguendum (sc. vitium) dilatata et immota pupilla,
 easily to be distinguished by the dilated and immoveable pupil,

humoribus manentibus pellucidis; fere tribuendum compressioni,
 the humours remaining pellucid; mostly to be attributed to compression,

congestion sanguinis, stupori nervi. Si pars tantum retinae
 congestion of blood, stupor of the nerve. If a part only of the retina

torpet, nigrae maculae conspiciuntur in rebus quas spectamus,
 is torpid, black spots are seen in the things which we look at,

et muscae volitantes ante oculos, frequens signum in febribus, sed
 and muscae volitantes before the eyes, a frequent sign in fevers, but

pessimum, et vix non lethale.
 the very worst, and scarcely not deadly (all but mortal).

257. Visus porro haud raro aboletur quavis partium,
 Vision moreover not unfrequently is abolished by any of the parts,

per quas radii debent transire et refringi, facta
 through which the rays ought to pass and to be refracted, having become

obscura aut opaca; veluti si cornea obsessa maculis evaserit
 obscure or opaque; as if the cornea beset with spots shall have become

impervia luci; vel aquosus humor fuerit corruptus sanguine,
 impervious to light; or the aqueous humour should be corrupted with blood,

sero, pure; vel si lens, quod saepe accidit, et dicitur cataracta,
 serum, pus; or if the lens, which often happens, and is called cataract,

adepta fuscum colorem, vel vitreus humor corruptus
 having acquired a brownish colour, or the vitreous humour corrupted

simili modo, vel denique omnes humores oculi soluti,
 in a similar manner, or finally all the humours of the eye dissolved,

confusi, mixti inflammatione, suppuratione, vel non transmittant
 confused, mixed by inflammation, by suppuration, either do not transmit

lucem, vel sinant transire parcius et inaequaliter:
 the light, or permit it to pass through more sparingly and unequally:

tui imputandum est, et plurimis vasis minoribus obstructis, conclusis, excæcatis; tum propter lentem flavescentem, instar electri factam, et ipsam retinam minus sentientem. Nam omnem sensum senectus minuit.

256. Interdum visus prorsus aboletur, cerebro, nervo optico, vel retina, variis modis læsis, salva ipsius oculi fabrica. Hujusmodi vitium amaurosis, vel gutta serena vocatur: dilatata et immota pupilla, humoribus pellucidis manentibus, facile distinguendum; compressioni, congestioni sanguinis, stupori nervi fere tribuendum. Si pars tantum retinae torpet, maculae nigrae in rebus quas spectamus conspici-

untur, et muscae ante oculos volitantes, signum in febribus frequens, sed pessimum, et vix non lethale.

257. Visus porro haud raro aboletur partium quavis, per quas radii transire et refringi debent, obscura aut opaca facta; veluti si cornea maculis obsessa luci impervia evaserit; vel humor aquosus sanguine, sero, pure, corruptus fuerit: vel si lens, quod saepe accidit, et cataracta dicitur, fuscum colorem adepta, vel humor vitreus simili modo corruptus, vel omnes denique oculi humores inflammatione, suppuratione, soluti, confusi, mixti, lucem vel non transmittant, vel parcius et inaequaliter tran-

quo fit ut vel nulla, vel obscura, distorta, imperfecta,
whence it happens that either none, or an obscure, distorted, imperfect,
 et male colorata imago depingatur super retinam.
and badly coloured image is depicted upon the retina.

258. Externa impedimenta visûs quod ad oculum, scilicet,
The external impediments of (to) vision as regards the eye, that is,
 vitia palpebrarum, que vicinarum partium, tumentium,
the disorders of the palpebræ, and of the neighbouring parts, swelling,
 concrenentium, inflammatarum, egent nullâ explicatione; neque profecto
growing together, inflamed, require no explanation; nor truly
 est vitium sensûs ipsiûs, si quis non viderit, nullâ
is it a disorder of the sense itself, if a person should not see, no
 luce admissâ ad oculum.
light being admitted to the eye.

259. Visus aliquando depravatur, et res spectantur non
Vision sometimes is depraved, and objects are seen not
 suo colore, vel etiam, quod rarius accidit, alienis
in their own colour, or even, which more rarely happens, in a strange
 figurâ et situ. Hoc fit si humores fuerint tincti
form and position. This takes place if the humours should be tinged
 insolito colore, ut fertur accidere in regio morbo,
with an unusual colour, as is said to happen in the royal disease (jaundice),
 quod tamen est valde dubium, vel a sanguine elapso ex
which however is very doubtful, or from the blood having escaped from
 propriis vasis, et mixto cum aquoso humore. Mira
its proper vessels, and being mixed with the aqueous humour. A wonderful
 depravatio, vel constans et perpetuus defectus visûs, observatus est
depravation, or constant and perpetual defect of vision, has been observed
 non semel in hominibus alioquin sanissimis, et
not once (more than once) in men otherwise the most healthy, and
 videntibus bene; nempe, ut nequeant distinguere certos colores;
seeing well; namely, that they cannot distinguish certain colours;
 viridem, causâ exempli, a rubro (colore). Alia
green, for the sake of example (for example), from red. Another
 depravatio est, quum, nullâ luce admissâ ad oculum, conspicimus
depravation is, when, no light being admitted to the eye, we see
 flammeas aureas scintillas, guttulas, varios colores. Plerumque
fiery golden sparks, little drops, various colours. For the most part
 leve et fugax genus mali, familiare præditis valde
this slight and transient kind of evil, common to those endowed with a very
 sentiente et mobili constitutione corporis, oritur, ut videtur,
sentient and mobile constitution of body, arises, as it seems,

ire sinant. Quo fit ut vel nulla, vel obscura, distorta, imperfecta, et male colorata imago super retinam depingatur.

258. Impedimenta visus, quod ad oculum, externa, vitia scilicet palpebrarum partiumque vicinarum, tumentium, concrenentium, inflammatarum, nulla explicatione egent: neque profecto ipsius sensus vitium est, si quis non viderit, nulla luce ad oculum admissa.

259. Depravatur visus aliquando, et res colore non suo, vel etiam, quod rarius accidit, gura et situ alienis, spectantur. Hoc fit si humores insolito colore tincti fuerint, ut in

morbo regio fertur accidere, quod tamen valde dubium est, vel a sanguine ex propriis vasis elapso et cum aquoso humore mixto. Mira depravatio, vel defectus visus constans et perpetuus, in hominibus alioquin sanissimis, et bene videntibus, non semel observatus est; nempe, ut certos colores, viridem, exempli causa, a rubro, distinguere nequeant. Alia depravatio est, quum, nulla ad oculum admissa luce, scintillas, guttulas flammeas, aureas, colores varios conspicimus. Leve plerumque et fugax mali genus, constitutione corporis valde sentiente et mobili præditis familiare, a levi,

a levi impulsu in retinam imprimis (ab impulsu)
 from a slight impulse upon the retina in the first place
 arteriarum micantium vehementius solito, aut inordinate: ab
 of the arteries beating more violently than usual, or inordinately: from
 digito ipso premente oculum, palpebris clausis, flammeus
 the finger itself pressing the eye, the palpebræ being shut, a fiery
 circulus conspicitur. Fortasse ratio est par scintillæ quam
 circle is seen. Perhaps the reason is similar of the spark which
 laborantes comitali morbo aliquando vident, crescentem in
 those suffering from falling sickness sometimes see, increasing into
 immensum et splendidum jubar, mox antequam corruant
 an immense and splendid sunbeam, soon (immediately) before they fall down
 convulsi. Homines, reduces ad vitam postquam fuissent
 convulsed. Persons, brought back to life after that they had been
 strangulati, aut mersi sub aquis, testantur se vidisse
 strangled, or sunk under the waters, testify that they saw
 simile jubar. Nimirum respiratione cohibitâ, venæ
 a similar beam. Doubtless respiration being restrained (suppressed), the veins
 capitis, turgentes sanguine, feriunt et comprimunt totum cerebrum,
 of the head, swelling with blood, strike and compress the entire brain,
 que nervosas partes quæ sunt in capite. Porro
 and the nervous parts which are in (within) the head. Moreover
 scintillæ istiusmodi observantur, haud secundo omine, ab iis
 sparks of this kind are observed, with no favourable omen, by those
 laborantibus febre, quibus phrenitis aut ferox delirium imminet:
 labouring under fevers, whom phrenitis or fierce delirium overhang
 tum quoque ab iis quibus graviora mala capitis
 (threaten): as also by those upon whom the severer disorders of the head
 paralysis, apoplexia, epilepsia, instant. An perceptio
 paralysis (palsy), apoplexy, epilepsy, impend. Whether is the perception
 lucis, ubi est nulla lux, recte tribuitur nervosis fibris
 of light, where there is no light, rightly attributed to the nervous fibres
 ipsis retinæ, concipientibus motum sponte?
 themselves of the retina, conceiving (taking on) motion of their own accord?

260. Distinctus sed falsus visus, nimirum, rerum visibilium quæ
 Distinct but false vision, namely, of objects visible which
 sunt non, quod genus vitii, utcunque mirum et difficile
 are (exist) not, which kind of disorder, however wonderful and difficult
 explanatu videatur, est non valde rarum, debet imputari
 to explain it may seem, is not very rare, ought to be imputed

ut videtur, impulsu in retinam oritur, arteriarum imprimis vehementius solito aut inordinate micantium: ab ipso digito oculum premente, clausis palpebris, circulus flammeus conspicitur. Par fortasse ratio est scintillæ, quam vident aliquando morbo comitali laborantes, in immensum et splendidum jubar crescentem mox antequam convulsi corruant. Simile jubar se vidisse testantur homines, ad vitam reduces postquam strangulati, aut sub aquis mersi fuissent. Cohibita nimirum respiratione, venæ capitis sanguine turgentes, totum cerebrum, partesque nervosas quæ in ca-

pite sunt, feriunt, et comprimunt. Observantur porro istiusmodi scintillæ, haud secundo omine, ab iis quibus febre laborantibus phrenitis aut ferox delirium imminet; tum quoque ab iis quibus graviora capitis mala, paralysis, apoplexia, epilepsia, instant. An ipsis fibris nervosis retinæ, motum sponte concipientibus, perceptio lucis, ubi nulla lux est, recte tribuitur?

260. Visus distinctus, sed falsus, rerum visibilium nimirum quæ non sunt, quod genus vitii, utcunque mirum et explanatu difficile videtur, non valde rarum est, læso cerebro,

cerebro læso, insanæ, delirio, non oculo laboranti
to the brain being injured, to insanity, delirium, not to the eye suffering
 ullo modo.
in any manner.

261. Frequens vitium visûs est distortio oculorum, quæ apud
A frequent defect of vision is distortion of the eyes, which among
 medicos vocatur strabismus. Strabo est (is) qui habet axes
physicians is called squinting. A squinter is he who has the axes
 oculorum obliquos præter solitum, neque directos ad idem
of the eyes oblique beyond what is usual, nor directed to the same
 punctum: hinc imperfectus, incertus visus, aliquando duplex, que
point: hence imperfect, uncertain vision, sometimes double, and
 ideo confusus, et sæpe ingens deformitas. Plerumque
consequently confused, and often a great deformity. For the most part
 congenitum malum, haud raro corrigitur conatibus quos
a congenital disorder, not unfrequently it is corrected by the efforts which
 infans, nondum conscius sui vitii, facit ad reddendum visum
the infant, not yet conscious of its defect, makes to render vision
 jucundiores et accuratiores. Idem (vitium) discitur facillime
more pleasant and accurate. The same is learned very easily
 imitatione, quæ multum regit omnes homines, imprimis infantes,
by imitation, which much governs all men, especially infants,
 etiam inscios: haud dediscitur ita facile.
although ignorant of it: it is not unlearned so easily.

262. Est verisimile causam tanti vitii sæpissime inesse
It is probable that the cause of so great a defect very often exists in
 musculis oculorum, qui male conformati vel corrupti paralyti,
the muscles of the eyes, which badly formed or destroyed by paralysis,
 rigiditate, contractione, nequeant regere oculos ordinate et æqualiter.
stiffness, contraction, cannot govern the eyes regularly and equally.

263. Hoc vitium inducitur nonnunquam epilepsiâ, in quâ vehementis-
This disorder is brought on sometimes by epilepsy, in which very violent
 simæ convulsiones omnium musculorum, et imprimis oculorum, fiunt;
convulsions of all the muscles, and especially of the eyes, take place;
 unde fortasse eorum distortionem et lacerationes, aut alia immedicabilia
whence perhaps their distortions and lacerations, or other irremediable
 mala.
diseases.

264. Nonnunquam comitatur quosdam morbos capitis, præsertim
Sometimes it accompanies certain diseases of the head, especially
 hydropem. Distortio oculorum inducta est aliquando à magnâ
dropsy. Distortion of the eyes has been brought on sometimes by great

naaniæ, delirio, non oculo ullo modo laboranti, imputari debet.

261. Frequens visus vitium est oculorum distortio, quæ strabismus apud medicos vocatur. Strabo est, qui axes oculorum præter solitum obliquos habet, neque ad idem punctum directos. Hinc visus imperfectus, incertus, aliquando duplex, ideoque confusus, et sæpe ingens deformitas. Malum plerumque congenitum, haud raro conatibus, quos infans nondum conscius sui vitii, facit ad visum jucundiores et accuratiores reddendum, corrigitur. Idem, imitatione, quæ omnes homines, imprimis infantes,

etiam inscios, multum regit, facillime discitur. Haud ita facile dediscitur.

262. Causam tanti vitii musculis oculorum sæpissime inesse verisimile est, qui male conformati, vel paralyti, rigiditate, contractione, corrupti, oculos ordinate et æqualiter regere nequeant.

263. Inducitur nonnunquam hoc vitium epilepsiâ, in qua vehementissimæ omnium musculorum, et oculorum imprimis, convulsiones fiunt. Unde fortasse eorum distortionem et lacerationes, aut alia mala immedicabilia.

264. Morbos quosdam capitis, hydropem, præ-

vi illatâ capiti; aliquando, sed rarissime, accedit subito,
violence done to the head; sometimes, but very seldom, it comes on suddenly,
 sine notâ causâ.
without a known cause.

265. Est vel alterius vel utriusque oculi: distortio quorum (oculorum) potest esse major (vel) minor quaquaversum.
It is either of one or of both eyes: the distortion of which may be greater or less every way.

266. Sunt (ii) qui persuaserunt sibi malum oriri nonnunquam a vitio retinarum; veluti si solita puncta earum (retinarum), scilicet, centra, et posita (sc. puncta) similiter quod ad centra, non consentiunt: enim ibi erit contorsio, (ut) duplex visus ne fiat. Hæc quoque videtur esse ratio quod eadem (contorsio) augeatur in horrendum modum, cum strabo admovet rem prope oculum, ut contempletur. Vel si centrum alterius aut utriusque retinæ sentiret parum vel nihil, ut homo videret foret necesse ut contorqueret oculos: sic, verbi gratia, si opticus nervus non adisset oculum obliquè, sed occupasset centrum retinæ, omnes vel fuisset strabones, vel habuissemus duplicem visum.
There are they who have persuaded themselves that the disorder arises sometimes from disease of the retina; as if the usual points of them (retina), that is, the centres, and the points situated similarly as regards the centres, do not consent: for then (in that case) there will be contorsion, that double vision may not take place. This also seems to be the reason that the same is increased in a horrible manner, when the squinter applies an object near the eye, that he may view it. Or if the centre of one or of both retina should perceive little or not at all, that the man might see it would be necessary that he should twist the eyes: thus, for example, if the optic nerve had not entered the eye obliquely, but had occupied the centre of the retina, we all either should have (had) been squinters, or should have had double vision.

267. Placuit medicis referre quendam molestissimum sensum, quem vocamus vertiginem ad visum, quamvis, revera, pertineat æque ad tactum, vel potius ad conscientiam; enim malum fugatur neque in tenebris neque palpebris clausis.
It has pleased physicians to refer a certain very troublesome sensation, which we call vertigo (giddiness) to vision, although, in truth, it may belong equally to touch, or rather to consciousness; for the disorder can be banished neither by darkness nor by the eyelids being shut.

268. Malum vocatur vertigo, siquando credimus (nos) videre
The disorder is called vertigo, if at any time we believe that we see

sertim, nonnunquam comitatur. A magna vi capiti illata aliquando inducta est oculorum distortio; aliquando, sed rarissime, sine nota causa subito accedit.

265. Est vel alterius vel utriusque oculi: quorum, distortio, major, minor, quaquaversum esse potest.

266. Sunt qui sibi persuaserunt malum nonnunquam oriri a vitio retinarum; veluti si solita earum puncta, centra scilicet, et similiter quod ad centra posita non consentiunt: contorsio enim ibi erit, ne visus duplex fiat. Hæc quoque videtur esse ratio quod eadem horrendum in modum augeatur, cum strabo rem prope

oculum admovet, ut contempletur. Vel si centrum alterius aut utriusque retinæ parum vel nihil sentiret, ut videret homo, necesse foret ut oculos contorqueret: sic, verbi gratia, si nervus opticus non oblique oculum adisset, sed centrum retinæ occupasset, omnes vel strabones fuisset, vel duplicem habuissemus visum.

267. Sensum quendam molestissimum, quem vertiginem vocamus, medicis placuit ad visum referre, quamvis revera ad tactum, vel potius ad conscientiam, æque pertineat; neque enim in tenebris, neque clausis palpebris, malum fugatur.

aut sentire nosmetipsos et vicinas res, quamvis revera
 or perceive ourselves and the neighbouring things, although in reality
 immotas, titubare, circumferri, tremere, vel moveri ullo
 immoveable, to stagger, to be carried round, to tremble, or to be moved in any
 modo. Si vertigo est gravior, neque potest æger videre, præ
 way. If the vertigo is severer, neither can the sick see, by reason of
 caligine, velut, obductâ oculis, neque incedere aut stare
 of the mist, as it were, spread over his eyes, nor walk or stand
 firmiter, quippe cui vires quæ regunt artus deficient:
 firmly, as being one to whom the strength which govern the limbs fail:
 nausea solet comitari vertiginem, que altera inducere
 nausea is accustomed to accompany vertigo, and the one to bring on
 alteram.
 the other.

269. Vertigo observatur comes et signum et prænuincia multorum
Vertigo is observed the companion and sign and forerunner of many
 et quorundam gravium morborum: apoplexiæ, epilepsiæ, hysteriæ, profluvii
 and certain severe diseases: of apoplexy, epilepsy, hysteria, a profluvium
 sanguinis è naribus vel aliis partibus, suppressorum mensium, magnæ
 of blood from the nostrils or other parts, of suppressed menses, of great
 plenitudinis corporis, februm, tum (sup. earum) quas debilitas, tum
 fullness of body, of fevers, as well of those which debility, as
 (earum) quas auctus impetus sanguinis versus caput,
 of those which an increased impetus of blood towards the head,
 comitatur. Vis quoque illata capiti; raro vis quæ
 accompanies. Violence also done to the head; seldom the violence which
 infertur oculis ipsis, nisi quatenus afficiat totum
 is done to the eyes themselves, except inasmuch as it may affect the whole
 caput, inducit vertiginem. Ingens et subita jactura sanguinis que
 head, brings on vertigo. A great and sudden loss of blood and
 aliorum humorum, debilitas, syncope, varii morbi intestinorum,
 of other humours, debility, syncope, various diseases of the intestines,
 imprimis ventriculi, multa venena admissa in corpus, præsertim
 especially of the stomach, many poisons admitted into the body, especially
 narcotica, opium et similia, et vinum et omnis meracior potus,
 the narcotics, opium and the like, and wine and all stronger drink,
 solent inducere vertiginem: hinc (est) signum omnigenæ
 are accustomed to bring on vertigo: hence (it is) a sign of every kind
 ebrietatis. Varii motus quoque creant vertiginem hominibus
 of drunkenness. Various motions also cause vertigo to men
 inassuetis: veluti rotatio capitis vel universi corporis,
 unaccustomed to them: as the rotation of the head or of the whole body,

268. Vertigo vocatur malum, siquando nosmetipsos et res vicinas, quamvis revera immotas, titubare, circumferri, tremere, vel ullo modo moveri, videre aut sentire credimus. Si gravior est vertigo, neque videre potest æger, præ caligine velut oculis obducta, neque firmiter incedere aut stare, quippe cui vires quæ artus regunt deficient. Vertiginem nausea solet comitari, alteraque alteram inducere.

269. Multorum et gravium quorundam morborum comes, et signum, et prænuincia observatur vertigo; apoplexiæ, epilepsiæ, hysteriæ, sanguinis profluvii et naribus vel aliis partibus, mensium suppressorum, maguæ corporis pleni-

tudinis, februm, tum quas debilitas, tum quas auctus caput versus sanguinis impetus, comitatur. Vis quoque capiti illata, raro quæ ipsis oculis infertur vis, nisi quatenus totum caput afficiat, vertiginem inducit. Ingens et subita sanguinis aliorumque humorum jactura, debilitas, syncope, varii morbi intestinorum, ventriculi imprimis, venena multa in corpus admissa, narcotica præsertim, opium, et similia, et vinum, et omnis potus meracior, vertiginem inducere solent. Hinc ebrietatis omnigenæ signum. Varii quoque motus inassuetis hominibus vertiginem creant: veluti rotatio capitis vel universi corporis, jactatio maritima, præsertim

maritima jactatio, præsertim si navis fuerit parva et mare turgidum, *sea tossing, especially if the ship should be small and the sea rough,* et similia. In his et similibus exemplis, insoliti et inordinati *and the like. In these and similar examples, unusual and irregular* motus sanguinis excitantur, et communicantur cum nervosis partibus *motions of blood are excited, and are communicated with the nervous parts* quæ sunt in capite; vel hæ male affectæ per consensum *which are in the head; or these badly affected through consent (sympathy)* cum aliis partibus, dant confusum sensum, quasi rotationis. *with other parts, give a confused sensation, as if of rotation.*

270. Quin vertigo oritur aliquando et ex animo affecto certâ *But vertigo arises sometimes also from the mind being affected in a certain* ratione, veluti conspectu rapidæ rotationis vel prærupti lapsus *manner, as from the sight of rapid rotation or a broken fall* aquarum, vel horrendi præcipitii, vel etiam sine ullo visu, ab intensâ *of waters, or horrible precipice, or even without any sight, from intense* et veloce cogitatione. *and rapid thinking.*

271. Vertigo, plerumque comes et signum aliorum morborum, *Vertigo, mostly the attendant and sign of other diseases,* nonnunquam, tamen, princeps vel solus morbus, rediens per intervalla, *sometimes, however, the chief or only disease, returning at intervals,* paulatim ingravescens, impedit et labefacit functiones pariter animi *gradually becoming severe, hinders and enfeebles the functions alike of mind* atque corporis: neque potuit firmissimum et vividissimum ingenium *and of body: nor could the very strong and very vivid mind* Swiftii resistere tanto malo. *of Swift resist so great a disorder.*

si navis parva, et mare turgidum, fuerint, et similia. In his et similibus exemplis, insoliti et inordinati motus sanguinis excitantur, et cum partibus nervosis quæ in capite sunt communicantur; vel hæ per consensum cum aliis partibus male affectæ, sensum confusum, quasi rotationis, dant.

270. Quin et ex animo, certa ratione affecto, veluti conspectu rotationis rapidæ, vel prærupti aquarum lapsus, vel præcipitii horrendi, vel

etiam sine ullo visu a cogitatione intensa et veloce, vertigo aliquando oritur.

271. Aliorum morborum plerumque comes et signum, nonnunquam tamen princeps vel solus vertigo morbus, per intervalla rediens, paulatim ingravescens, functiones animi pariter atque corporis impedit et labefacit: neque firmissimum et vividissimum Swiftii ingenium tanto malo potuit resistere.

CAP. X.

CHAP. X.

De sensibus qui dicuntur interni, memoriâ, imaginatione, iudicio, que
 Of the sensus which are called internal, memory, imagination, judgment, and
varietatibus et vitiis eorum.
 the varieties and disorders of them.

272. Præter sensus, seu facultates, jam descriptos, homo possidet
Besides the senses, or faculties, already described, man possesses
 et alios; qui vocantur interni, ideo, quod fungantur suis
also others; which are called internal, for this cause, that they perform their
 muneribus sine impulsu vel externâ ope; et organa quæ
functions without impulse or external aid; and the organs which
 inserviunt maxime iis (sc. muneribus) interna, abdita, inaccessa externis
serve most to them internal, hidden, inaccessible to external
 rebus agant propriis viribus.
things act by their own proper powers.

273. Perceptio excitata externâ re, fugax et peritura
The perception excited by an external object, transient and perishable
 suâ naturâ, desinit brevi: quod, si eadem res fuerit
in its nature, ceases in a short time: but, if the same object should be
 admota denuo organo, non modo renovat perceptionem, sed homo
applied again to the organ, it not only renews the perception, but the man
 simul reminiscitur pristini sensû quem habuit:
(individual) at the same time remembers the former sensation which he had:
 scilicet, novit se habuisse eundem (sc. sensum) antea.
that is, he knows that he had (experienced) the same before.

274. Hæc, prima et simplicissima species memoriæ, contingit primæ
This, the first and most simple kind of memory, belongs to the first
 ætati, quippe quam infans semestris ostendat, dum agnoscit
age, as being that which the infant six months old shews, whilst it knows
 parentes aut nutricem, declinat ignotos homines. Hæc facultas vocatur
its parents or nurse, shuns unknown persons. This faculty is called
 recordatio, causâ distinctionis, et videtur esse principium et
recollection, for the sake of distinction, and seems to be the beginning and
 fundamentum perfectioris memoriæ.
foundation of more perfect memory.

275. Quin et nihî omnino admoto ad organa externorum
Moreover, nothing at all being applied to the organs of the external

CAP. X.—*De sensibus qui dicuntur interni, memoria, imaginatione, iudicio: eorumque varietatibus et vitiis.*

272. Præter jam descriptos sensus, seu facultates, homo et alios possidet; qui ideo interni vocantur, quod siue impulsu, vel ope externa, suis fungantur muneribus; et organa quæ iis maxime inserviunt, interna, abdita, externis rebus inaccessa, propriis viribus agant.

273. Perceptio re externa excitata, sua natura fugax et peritura, brevi desinit: quod si eadem res organo denuo admota fuerit, non

modo perceptionem renovat, sed homo simul pristini quem habuit sensus reminiscitur: novit, scilicet, se eundem antea habuisse.

274. Hæc prima et simplicissima memoriæ species primæ ætati contingit, quippe quam infans semestris ostendat, dum parentes aut nutricem agnoscit, ignotos homines declinat. Hæc facultas recordatio vocatur, distinctionis causa, et principium et fundamentum perfectioris memoriæ videtur esse.

275. Quin et nihil omnino ad organa sensuum externorum admoto, nulla que juvante

sensuum, que nullâ externâ causâ juvante, et internis causis sæpe
senses, and no external cause assisting, and the internal causes often
 parum perspectis, sensus percepti diu ante obliiti,
little understood, sensations perceived a long time before (long since) forgotten
 sopiti, renovantur, reviviscunt homini invito, nec opinanti.
lulled, are renewed, revive to the man against his will, nor imagining it.

Invita recordatio hujusmodi accedit adhuc propriùs ad perfectam
Involuntary recollection of this sort approaches still nearer to perfect
 memoriam.
memory.

276. Illa facultas dicitur vera et optima memoria quâ (sc. facultate)
That faculty is called the true and best memory by which

revocamus, detinemus, contemplamur, dimittimus, ad nostrum arbitrium,
we recall, we detain, we contemplate, we dismiss, at our will,

varias præteritas cogitationes, veluti sensus, perceptiones, &c.
various by-gone (passed) thoughts, as sensations, perceptions, &c.,

eodem ordine quo fuerant receptæ.
in the same order in which they had been received.

277. Hæc (sc. facultas) est nulla, prima ætate: accedit atque augetur
This is none, at the first age: it comes on and is increased

paulatim. Fit promptissima, validissima, tenacissima, puerili
by degrees. It becomes most ready, strongest, most tenacious, at puerile
 ætate; viget juvenili et virili (sc. ætate); senili

solet fatiscere nonnihil; summa senectute dilabitur, et tandem
it is accustomed to fail somewhat; in extreme old age it decays, and at length

aboletur; et fere hac ratione, ut, adhuc tenacissima
is abolished; and commonly for this reason, that, as yet very tenacious

veterum (sc. rerum) quas reconderat florente ætate, dimittat
of the old things which it had stored up in flourishing age, it dismisses

novas res facile; vero annis ingravescentibus omnes res, novæ atque
new things easily; but the years weighing on all things, new and

antiquæ pariter, delentur penitus è memoriâ.
old alike, are blotted entirely from the memory.

278. Datur promptior et tenacior aliis hominibus
It is given more ready and more tenacious (retentive) to some men,

debilior aliis: augetur incredibiliter cultu et usu, modo
weaker to others; it is increased incredibly by cultivation and use, provided

hi fuerint non nimii. Est plus minus vîvida aut prompta
these have been not too great. It is more (or) less vivid or ready

variis hominibus, que iisdem (hominibus) variis temporibus:
in various men, and in the same (men) at different times:

externa causa, et internis sæpe causis parum
 perspectis, sensus diu ante percepti, obliiti, sopi-
 titi, homini invito nec opinanti renovantur,
 reviviscunt. Hujusmodi recordatio invita prop-
 rius adhuc ad perfectam memoriam accedit.

276. Vera et optima memoria dicitur facultas
 illa, qua varias cogitationes præteritas, veluti
 sensus, perceptiones, &c. eodem quo fuerant
 recepte ordine, ad arbitrium nostrum revo-
 camus, detinemus, coutemplamur, dimittimus.

277. Hæc, prima ætate, nulla est: paulatim
 accedit atque augetur. Puerili ætate, promp-

tissima, validissima, tenacissima fit; juvenili
 et virili viget; seculi uouinihil fatiscere solet;
 summa senectute dilabitur, et tandem aboletur;
 et fere hac ratione, ut novas res dimittat facile,
 veterum, quas florente ætate reconderat, ad-
 huc tenacissima; ingravescentibus vero annis,
 omnes res, novæ pariter atque antiquæ, e me-
 moria penitus delentur.

278. Aliis hominibus promptior et tenacior,
 aliis debilior datur: cultu et usu, modo hi non
 nimii fueriut, incredibiliter augetur. Variis
 hominibus, iisdemque variis temporibus, plus

ita ut fungatur suo officio vel admodum lentè vel fere
so that it performs its duty either very slowly or almost
 incredibili velocitate. Multum hic pendet a secunda aut adversâ
with incredible velocity. Much here depends upon the good or bad
 valetudine quâ homo utitur; à statu animi, vel commoti
health which the man enjoys; upon the state of the mind, either disturbed
 gravi affectu, vel fruentis placidâ quiete, et attentis accurate
by a severe affection, or enjoying calm quiet, and attending accurately
 ad suas cogitationes. Tum ratio corporis est quoque habenda,
to its thoughts. Then the habit of body is also to be considered,
 magis ve minus sentientis aut mobilis; motus sanguinis
(whether) more or less sentient or mobile; the motion of the blood
 quoque facit multum hic, incitator aut languescens: veluti
also does much here, (whether) more hastened or languid: as
 ab exercitatione, febre, dolore, torpore, sopore, &c. Memoria solet
from exercise, fever, pain, torpor, sopor, &c. Memory is accus-
 esse rapidior pueris, junioribus, et præter solitum vividis;
tomed to be more rapid in boys, young men, and in the unusually lively:
 et hæc est (sc. causa), inter alias causas, cur hi polleant minus
and this is one, among other causes, why these excel less
 firmo aut certo iudicio.
in a sound or certain judgment.

279. Memoria viget inter somnum, saltem leviolem; sed parum
Memory is active during sleep, at least lighter; but no way
 accurata, neque paret voluntati, neque profert res suo
accurate, neither does it obey the will, nor puts forth things in their
 ordine, ut solet sano et vigilant! homini.
order, as is accustomed in a healthy and waking man.

280. Memoria potissimum retinet plerasque novas res, sæpe repetitas,
Memory powerfully retains most new things, often repeated,
 ingratas, vel quæ afficiant mentem ullo modo magis solito (sc. modo).
unpleasant, or which can affect the mind in any manner more than the usual.

Ordo rerum juvat præ omnibus, quæ solemus
Arrangement of things (subjects) assists before all things, and we are accustomed
 uti eo (sc. ordine) tanquam præsentissimo auxilio ad revocandam
to use it as if the most immediate aid to recall
 quamlibet rem in memoriam. Memoria est fons et origo
any thing into the memory. Memory is the fountain and origin
 omnigenæ scientiæ et iudicii, et igitur ordo
of every kind of knowledge and of judgment, and therefore arrangement
 fere maxima pars, nimirum sine quo (sc. ordine) foret
commonly the great est part, doubtless without which there would be

minus vidua aut prompta est: ita ut vel lente admodum vel incredibili fere velocitate suo fungatur officio. Multum hic pendet a secunda aut adversa qua homo utitur valetudine; a statu animi, vel gravi affectu commoti, vel placida quiete fruentis, et ad suas cogitationes accurate attentis. Tum quoque corporis ratio habenda est, magis minusve sentientis aut mobilis; sanguinis motus quoque multum hic facit, incitator, aut languescens: veluti ab exercitatione, febre, dolore, torpore, sopore, &c. Pueris, junioribus, et præter solitum vividis, rapidior solet esse memoria; et hæc

inter alias causas est, cur hi iudicio minus firmo aut certo polleant.

279. Viget inter somnum, saltem leviolem, memoria; sed parum accurata, neque voluntati paret, neque res suo ordine, ut sano et vigilant! homini solet, profert.

280. Plerasque res novas, sæpe repetitas, jucundas, ingratas, vel quæ mentem ullo modo magis solito afficiant, memoria potissimum retinet. Juvat, præ omnibus, ordo rerum, eoque tanquam auxilio præsentissimo uti solemus, ad rem quamlibet in memoriam revocandam. Scientiæ omnigenæ, et iudicii, memoria fons

aut nulla memoria aut foret vaga et prorsus inutilis, qualis
either no memory or it would be vague and altogether useless, such as
 contingit somniantibus et delirantibus.
happens to persons dreaming and raving.

281. Memoria minuitur aut turbatur, aut deletur prorsus,
Memory is diminished or disturbed, or is destroyed altogether,
 variis morbis, imprimis (iis) qui afficiunt cerebrum, apoplexia,
by various diseases, especially those which affect the brain, apoplexy,
 paralyti, epilepsia, tumoribus intra caput, externa vi illatâ
palsy epilepsy, by tumours within the head, by external violence done
 eidem (sc. capiti), febris, imprimis quibus impetus sanguinis versus
to the same, by fevers, especially in which the force of the blood towards
 caput est auctus, aut cerebrum valde affectum, quâcunque ratione.
the head is increased, or the brain very much affected, in whatever manner.

282. Memoria rarissime depravatur, ita ut repræsentet res menti
Memory very rarely is depraved, so that it represents things to the mind
 non suo ordine: quod, si tale vitium acciderit, est
not in their own order: but, if such a disorder should happen, it is
 referendum ad læsam imaginationem vel delirium.
to be referred to injured imagination or delirium.

283. Imaginatio est facultas quâ homo ad suum arbitrium conjungit,
Imagination is a faculty by which man at his pleasure combines,
 dividit, et disponit novo ordine, varias res quas reconderat
separates, and disposes in a new order, the different things which he had laid up
 memoria; veluti si, mixtis et compositis formis viri
in the memory; as if, having mixed and compounded the forms of a man
 et equi, mulieris et piscis, finxerit sibi Centaurum
and of a horse, of a woman and of a fish, he should form to himself a Centaur
 aut Sirenem.
or Siren.

284. Imaginatio est vividior quam memoria, et habet
Imagination is more vivid than memory, and has (exercises)
 latius imperium in animum que affectus ejus, et
a more extensive control over the mind and the affections of it, and
 nervosum genus; quamvis memoria ipsa possideat nonnihil
the nervous system; although memory itself may possess something
 vis hujusmodi.
of a power of this sort.

285. Cogitationes, quas innumeras hæc facultas suggerit, vix unquam
The thoughts, which innumerable this faculty suggests, scarcely ever
 confunduntur, in sano homine, cum præteritis rebus quas
are confounded, in the healthy man, with the passed things which

et origo est, et igitur ordo fere maxima pars, nimirum, sine quo, aut nulla foret memoria, aut vaga et prorsus inutilis, qualis somniantibus et delirantibus contingit.

281. Minuitur aut turbatur memoria, aut prorsus deletur, variis morbis, imprimis qui cerebrum afficiunt, apoplexia, paralyti, epilepsia, tumoribus intra caput, vi externa eidem illata, febris, imprimis quibus auctus est caput versus sanguinis impetus, aut cerebrum quâcunque ratione valde affectum.

282. Rarissime depravatur memoria, ita ut res ordine non suo menti repræsentet: quod si

tale vitium acciderit, ad læsam imaginationem vel delirium referendum est.

283. Imaginatio est facultas qua homo varias res, quas memoria reconderat, ad arbitrium suum conjungit, dividit, et novo ordine disponit; veluti si mixtis et compositis, viri et equi, mulieris et piscis, formis, Centaurum aut Sirenem sibi finxerit.

284. Imaginatio quam memoria vividior est, et latius imperium in animum, ejusque affectus, et *genus nervosum*, habet: quamvis memoria ipsa nonnihil hujusmodi vis possideat.

285. Cogitationes, quas hæc facultas sugge-

memoria contemplatur, multo minus cum rebus veris et præsentibus
the memory contemplates, much less with the things true and present
 quas sensus percipiunt: neque sanus, sobrius, et vigilans homo
which the senses perceive; nor does a healthy, sober, and waking man
 credit res quas imaginatio fingit ad suum arbitrium aut
believe that the things which imagination forms at its pleasure either
 esse aut unquam fuisse veras. Si talis error acciderit, est
are or even were true. If such an error should happen, it is
 habendus pro morbo.
to be considered as a disease.

286. Imaginatio, parva infanti, maxima juveni, temperatior
Imagination, small in the infant, greatest in the young man, more moderate
 viro, fere reprimitur seni: eadem (sc. imag.) vividior
in the man, commonly is repressed in the old man: the same is more vivid
 hilaribus, irritabilibus, mobilibus, et sentientibus præter solitum
in the cheerful, the irritable, the mobile, and those feeling beyond usual
 acriter; fere nulla torpidis, frigidis, stupidis. Neque facultas utilis
acutely; almost none in the torpid, the cold, the stupid. Nor a faculty useful
 poetis solis; quippe species cujus fingat quærat, detegat,
to the poets alone; as being a species of which can suppose, can seek, can detect,
 similitudines et convenientias rerum, non observatas a vulgo
similitudes and agreements of things, not observed by the commonalty
 hominum, perducens primo ad conjecturas, tandem, ope judicii,
of men, conducting at first to conjectures, at length, by means of the judgment,
 ad veram scientiam. Forsitan huic debemus pariter *Newtonum* ac *Homerum*.
to true knowledge. Perhaps to this we owe alike a Newton and a Homer.

287. Hoc est commune imaginationi et memoriæ, quod
This (the following) is common to imagination and memory, that
 habent tantum imperium in perceptiones visus et auditus:
they have so great control over the perceptions of sight and of hearing:
 neque profecto possunt renovare aut accurate aut fortiter perceptiones
nor truly can they renew either accurately or strongly the perceptions
 aliorum externorum sensuum.
of the other external senses.

288. Judicium est facultas quâ contemplamur, comparamus
Judgment is the faculty by which we contemplate, we compare
 perceptiones et omnigenas cogitationes, sensus, memoriæ, imaginationis,
the perceptions and all kinds of thoughts, of sensations, of memory, of imagination,
 detegimus similitudines et differentias earum, que inde deducimus
we detect the similitudes and differences of them, and thence we deduce
 varias conclusiones. Hæc facultas est debilis infanti et puero; firmior
various conclusions. This faculty is weak in the infant and in the boy; stronger

rit innumeras, vix unquam in sano homine, cum rebus præteritis quas memoria contemplatur, multo minus cum rebus veris et præsentibus, quas sensus percipiunt, confunduntur neque sanus homo, sobrius, et vigilans, res quas imaginatio ad suum arbitrium fingit, aut esse veras, aut unquam fuisse, credit. Si talis error acciderit, pro morbo habendus est.

286. Imaginatio infanti parva, juveni maxima, viro temperatior, seni fere reprimitur; eadem hilaribus, irritabilibus, mobilibus, et præter solitum acriter sentientibus, vividior; torpidis, frigidis, stupidis, fere nulla. Neque solis poetis utilis facultas: quippe cujus spe-

cies, rerum similitudines et convenientias, a vulgo hominum non observatas, fingat, quærat, detegat, ad conjecturas primo, ad veram scientiam, ope judicii, tandem perducens. Huic forsitan *Newtonum* pariter ac *Homerum* debemus.

287. Imaginationi et memoriæ hoc commune est, quod in perceptiones visus et auditus tantum imperium habent: neque profecto aliorum sensuum externorum perceptiones, aut accurate aut fortiter renovare possunt.

288. Judicium facultas est, qua perceptiones et cogitationes omnigenas, sensus, memoriæ, imaginationis, contemplamur, comparamus, earum similitudines et differentias detegimus,

et certior consistente ætate, corrumpitur paulatim ætate et
and more certain in stable age, is corrupted gradually by age and
 quotquot morbis minuunt memoriam; nam, sine memoria, nullum
whatever diseases diminish memory; for, without memory, no
 iudicium potest esse.
judgment can be.

289. Omnes hæ facultates sunt tam pure mentis, ut primo
All these faculties are so purely of the mind, that at first
 intuitu haud quicquam corporei videatur inesse iis: tamen, morbi
sight not any thing corporeal seems to be in them: however, diseases
 qui impediunt eas docent certum statum cerebri requiri
which hinder them teach that a certain state of the brain is acquired
 ut exerceantur bene; que id (sc. cerebrum) esse primum
that they be exercised well; and that it is the primary (chief)
 organum internorum sensuum. Nec desunt philosophi et
organ of the internal senses. Nor are there wanting philosophers and
 medici non parvi nominis, qui negant ullam mutationem in mente
physicians of no small name, who deny that any change in the mind
 aut cogitationem fieri, quem certa mutatio cerebri, et quæ
or thought takes place, which a certain change of the brain, and which
 respondet eidem (sc. cogitationi) non comitetur. Res parum
answers (corresponds) to the same does not accompany. A thing no way
 certa, parum utilis, neque reducenda facile ad experimentum. Enim
certain, no way useful, nor to be reduced easily to experiment. For
 tantum abest ut habeamus ullam scientiam
so much is it from that we have (so far are from having) any knowledge
 mutationum quæ fiunt in cerebro, vel modi quo variæ
of the changes which take place in the brain, or of the manner in which the various
 partes ejus operantur, dum memoria, imaginatio, iudicium, exercentur,
parts of it operate, whilst memory, imagination, judgment, are exercised,
 ut ne quidem sana conjectura fuerit prolata hactenus
that not even a rational conjecture has been set forth hitherto
 de his rebus.
concerning these things.

290. Igitur oportet morbos functionis, ratio cujus in
Therefore it behoves that the diseases of a function, the nature of which in
 sanitate obscuratur tam atra caligine, esse parum intellectos. Tamen,
health is observed with so black a mist, be little understood. Nevertheless,
 habet suos morbos, graves, molestos, miserandos, dignos omni
it has its own diseases, severe, troublesome, wretched, worthy every

variasque inde conclusiones deducimus. Hæc facultas infanti et puero debilis est; consistente ætate, firmior et certior; ætate paulatim corrumpitur, et morbis quotquot memoriam minuunt; nam sine memoria nullum potest esse iudicium.

289. Omnes hæ facultates tam pure mentis sunt, ut primo intuitu haud quicquam corporei iis inesse videatur: docent tamen morbi qui eas impediunt, certum cerebri statum, ut bene exerceantur, requiri: idque sensuum internorum primum esse organum. Nec desunt philosophi et medici non parvi nominis, qui negant ullam in mente mutationem vel cogita-

tionem fieri, quam certa et quæ eidem respondet cerebri mutatio non comitetur. Res parum certa, parum utilis, neque facile ad experimentum reducenda (120, et seq.) Tantum enim abest, ut ullam mutationum quæ in cerebro fiunt, vel modi quo variæ ejus partes operantur, dum memoria, imaginatio, iudicium exercentur, scientiam habeamus, ut ne quidem sana de his rebus conjectura hactenus fuerit prolata.

290. Functionis igitur, cujus ratio in sanitate tam atra caligine obscuratur, morbos parum intellectos esse oportet. Suos tamen morbos habet, graves, molestos, miserandos, omni attentione dignos: nimirum qui mentem ipsam,

attentione, qui (sc. morbi) nimirum vitient et reddant inutilem
attention, which doubtless can vitiate and render useless

mentem ipsam, quâ (sc. mente) præstamus cæteris animalibus.
the mind itself, by which we excel other animals.

291. Mens alienatur siquando homo confundit cogitationes
The mind is alienated if at any time a man confounds the thoughts
 memoriæ aut imaginationis cum perceptionibus externorum sensuum, et
of memory or imagination with the perceptions of the external senses, and
 sic credit adesse quæ sunt non, vel nunquam fuere; vel si
thus believes to be present what are not, or never were: or if
 fert male sanum iudicium de rebus, et alienum a communi
he forms an unsound judgment about things, and different from the common
 sensu hominum. Autem hoc rarissime accidit, si unquam. Captus mente
sense of men. But this very rarely happens, if ever. An insane person

solet ferre sanum iudicium a falsis
is accustomed to bear (draw) a sound (legitimate) judgment (conclusion) from false

principiis: neque ratiocinatur male; sed furens potius decipitur,
principles (premises): nor does he reason badly; but raving rather is deceived,

qui, credens se Jovem, posceret fulmina Jovis.
who, believing himself Jove, would demand the thunderbolts of Jove.

292. Alienatio mentis vocatur, generatim, vesania: si est ex febre,
Alienation of mind is called, generally, vesania: if it is from fever,

delirium; citra febrem, generalis furor appellatur insania: vero minus
delirium; without fever, general madness is called insanity; but a less

generalis dementia, scilicet de unâ ve alterâ re, mente
general madness, that is about one or another (one or two) thing, the mind

sanâ de omnibus aliis, vocatur melancholia; cum qui insignis
being sane upon all others, is called melancholy; with which a remarkable

tristitia aliquando conjungitur. Tamen, nullus accuratus limes
sadness sometimes is conjoined. However, no accurate boundary

existit inter sanam mentem et vesaniam. Omnis hilaritas præter
exists between a sound mind and vesania. All hilarity beyond

solitum vergit ad insaniam; et mæstus et meticulosus animus
usual verges to insanity; and the sad and fearful mind

appropinquat ad melancholiam.
approaches to melancholy.

293. Delirium varii generis comitatur febres aliquando leve,
Delirium of various character accompanies fevers sometimes slight,

discessurum facile, et vix mali ominis, sæpe, tamen, grave,
about to depart easily, and scarcely of bad omen, often, however, severe,

et pessimi ominis, postulat magnam curam et attentionem.
and of the worst omen, requires great care and attention.

qua cæteris animalibus præstamus, vitient, et inutilem reddant.

291. Alienatur mens, siquando homo cogitationes memoriæ aut imaginationis cum perceptionibus sensuum externorum confundit, et sic, quæ non sunt, vel nunquam fuere, adesse credit; vel si iudicium de rebus male sanum, et a communi hominum sensu alienum, fert. Hoc autem rarissime, si unquam, accidit. Iudicium sanum mente captus ferre solet a falsis principiis: neque male ratiocinatur, sed potius decipitur furens, qui, Jovem se credens, Jovis fulmina posceret.

292. Mentis alienatio vesania generatim vo-

catnr; si ex febre est, delirium; citra febrem, generalis furor insania appellatur; dementia vero minus generalis, scilicet de re una alterave, sana de omnibus aliis mente, melancholia vocatur: quicum insignis aliquando tristitia conjungitur. Nullus tamen existit limes accuratus inter sanam mentem et vesaniam. Omnis præter solitum hilaritas ad insaniam vergit; et mæstus et meticulosus animus ad melancholiam appropinquat.

293. Delirium varii generis febres comitatur: aliquando leve, facile discessurum, et vix mali ominis: sæpe tamen grave, et pessimi ominis, magnam curam et attentionem postulat.

294. Delirium est ferox vel mite. Rubor vultus, dolor capitis,
Delirium is furious or mild. Redness of countenance, pain of the head,
 ingens pulsus arteriarum, tinnitus aurium, oculi rubri, inflammati,
violent pulsation of the arteries, ringing of the ears, the eyes red, inflamed,
 truces, micantes, impatientes lucis, præcedunt et comitantur
fierce, shining, impatient (intolerant) of light, precede and accompany
 ferox (sc. delirium), et vel nullus somnus vel dira quies rupta
the furious, and either no sleep or dreadful rest broken (disturbed)
 horrendis somniis; soliti mores exuti, novi induti, pro
by horrible dreams; the accustomed manners put off, new ones put on, for
 mitibus (sc. moribus), morosi et immansueti, iracundia; alienatio animi
the mild, morose and savage, anger; alienation of mind
 primo observanda inter somnum et vigiliam fides data imaginationi,
at first (is) to be observed between sleep and waking belief given to the imagination,
 perceptiones ex externis sensibus nullæ vel neglectæ, et cogitationes
the perceptions from the external senses none or neglected, and the thoughts
 memoriæ prolatæ sine ordine; demum furor, et nonnunquam
of the memory set forth with order; at length fury, and sometimes
 insolita et incredibilis vis artuum, (sup. accedunt), ita ut
an unusual and incredible power of the limbs, come on, so that
 plures homines vix possint compescere unum ægotantem (sc. hominem.)
several men scarcely are able to restrain one sick person.

295. Mite delirium, contra, observatur sæpe cum debili pulsu,
The mild delirium, on the other hand, is observed often with a weak pulse,
 pallido collapso vultu, vertigine a erecto situ, prostratis viribus.
pallid collapsed countenance, vertigo from the erect posture, prostrated strength.
 Dolor capitis quoque adest, sed minus acutus quam in altero
Pain of the head also is present, but less acute than in the other
 genere; raro iracundia, sæpe stupor, aliquando insignis mæror et
kind; seldom anger, often stupor, sometimes remarkable grief and
 metus (sup. adsunt:) alienatio mentis observatur primo in semisomni,
fear (are present:) alienation of mind is observed at first in half sleep,
 pelianda pro tempore, aliquando luce admissa, amicis
to be driven away for a time, sometimes by light being admitted, by friends
 alloquentibus; æger mussitat multum sibi, parum curat quæ
talking to him; the sick mutters much to himself, little regards what
 fiunt circum; tandem, factus stupidus, percipit neque
things are doing about him; at length, become stupid, he perceives neither
 famem, nec sitim quâ (sc. siti) fauces arescunt, nec alias
the hunger, nor the thirst with which his fauces parch, nor the other
 solitas propensiones, quo fit ut urina et stercus elabantur,
usual propensities, whence it happens that the urine and fæces escape,

294. Delirium ferox est vel mite. Ferox præcedunt et comitantur, vultus rubor, capitis dolor, ingens arteriarum pulsus, aurium tinnitus, oculi rubri, inflammati, truces, micantes, impatientes, et vel nullus somnus, vel dira quies horrendis somniis rupta, mores soliti exuti, novi induti, pro mitibus morosi et immansueti, iracundia; animi alienatio, primo inter somnum et vigiliam observanda, imaginationi fides data, perceptiones ex sensibus externis nullæ vel neglectæ, et cogitationes memoriæ sine ordine prolatæ, furor demum, et nonnunquam insolita et incredibilis vis ar-

tuum, ita ut plures homines unum ægotantem vix possint compescere.

295. Mite, contra, delirium, cum pulsu sæpe debili, vultu pallido, collapso, vertigine a situ erecto, prostratis viribus, sæpe observatur. Dolor capitis quoque adest, sed minus acutus quam in altero genere; raro iracundia, sæpe stupor, aliquando mæror insignis et metus: in semisomni primo observatur mentis alienatio, admissa luce, alloquentibus amicis, pro tempore aliquando pelianda; æger multum sibi mussitat, quæ circum fiunt parum curat; tandem stupidus factus, neque famem, nec sitim

ægro inscio. Malum ingravescens, desinit in subsultus
the patient being unconscious. The disorder weighing on, terminates in subsultus
tendinum, tremores, convulsiones, defectiones animi, mortem. Alterum
tendinum, tremblings, convulsions, faintings, death. The other
 genus delirii quoque, viribus ægri deficientibus, mutatur
kind of delirium also, the strength of the patient failing, changed
 sæpe in hoc (sc. genus).
often into this.

296. Signa quæ comitantur utrumque (sc. genus) docent insolitum,
The signs which accompany both teach that an unusual,
 inordinatum, inæqualem, motum sanguinis per cerebrum, mutare
inordinate, unequal, motion of the blood through the brain, changes
 statum ejus qui (sc. status) requiritur ad sanam mentem: est
the state of it which is required to sound mind: it is
 verisimile satis inflammationem vel magis vel minus generalem et
probable enough that inflammation either more or less general and
 vehementem, aliquando subesse, quamvis generalia signa inflammationis
violent, sometimes exists, although the general signs of inflammation
 in corpore fuerint levia, inspectiones cadaverum docent,
in the body should be slight, the inspections of dead bodies teach,
 quæ (sc. inspectiones) sæpe ostenderunt insolitum ruborem vel
which often have shewn an unusual redness either
 totiûs cerebri vel partis ejus; et effusionem, suppurationem, &c.
of the entire brain or of part of it; and effusion, suppuration, &c.
 intra caput.
within the head.

297. Verum, status cerebri potest affici multum, et delirium
But, the state of the brain may be affected much, and delirium
 induci ab aliis causis et, præter motum sanguinis. In multis
be induced from other causes also, besides the motion of the blood. In many
 febribus, veluti in iis quas (sc. febres) insignis debilitas comitatur
fevers, as in those which a remarkable debility accompanies
 ab initio ipso, nervosum genus ipsum laborat
from the beginning itself (very beginning), the nervous system itself suffers
 prius et magis quam motus sanguinis: bene multa vitia
before and more than the motion of the blood: the very many disorders
 cujus, non secus ac sanæ actiones non erunt obvia
of which, in like manner as the healthy actions will not be obvious
 sensibus. Vero signa læsionis plane ostendunt inæqualem,
to the senses. But the signs of lesion plainly shew that an unequal,
 inordinatam actionem ejus (sc. gen. nervosi), vel incitationem ut multi
inordinate action of it, or excitation as many

qua fauces arescunt, percipit, nec alias solitas propensiones; quo fit, ut urina et stercus, inscio ægro, elabantur. Ingravescens malum, in subsultus tendinum, tremores, convulsiones, animi defectiones, mortem, desinit. Alterum quoque delirii genus, deficientibus ægri viribus, in hoc sæpe mutatur.

296. Docent quæ utrumque comitantur signa, insolitum, inordinatum, inæqualem sanguinis per cerebrum motum, statum ejus qui ad sanam mentem requiritur mutare: inflammationem cerebri, vel magis vel minus generalem et vehementem, aliquando subesse satis verisimile

est, quamvis generalia inflammationis in corpore signa levia fuerint: docent cadaverum inspectiones, quæ sæpe ostenderunt insolitum, vel totiûs cerebri, vel partis ejus, ruborem; et effusionem, suppurationem, &c. intra caput.

297. Verum et ab aliis causis, præter sanguinis motum, cerebri status multum affici potest, et delirium induci. In multis febribus, veluti in iis quas insignis debilitas ab ipso initio comitatur, genus ipsum nervosum prius et magis quam sanguinis motus laborat: cujus vitia bene multa, non secus ac sanæ actiones, sensibus non obvia erunt. Signa vero læsionis

vocant, fieri. Hæc est quoque ratio delirii
call it, is made (takes place). This is also the explanation of the delirium
 a venenis.
from poisons.

298. Ex dictis, ratio redditur non plene quidem,
From what has been said, the explanation is rendered not fully indeed,
 sed aliquatenus, cur delirium (sup. est) varii generis, vehementiæ,
but to some extent, why delirium (is) of various kind, of violence,
 ominis; cur sæpe (est) auctum motu, luce strepitu, affectibus
of omens; why often it is increased by motion, light, noise, affections
 animi, stimulantibus medicamentis, calore: cur tollatur nunc
of the mind, stimulating medicines, heat: why it is removed at one time
 sanguine misso ex venis, et tenui diæta, nunc vino
by blood being let from the veins, and spare diet, at another by wine
 et stimulantibus; cur aliquando levetur vel compescatur
and stimulating things; why sometimes it is abated or restrained
 visu et colloquio amicorum et adstantium, que conspectu
by the sight and conversation of friends and bystanders, and by the sight
 rerum bene notarum; cur sæpe ingravescat si æger
of things well known; why often it becomes severe if the patient
 detineatur in lecto, evasurum (sit) mitius si surrexerit, et
be detained in bed, will become milder if he should rise, and
 sederit paulisper erectus.
should sit a little while erect.

299. Ratio melancholiæ et insanix obtegitur multo densioribus
The cause of melancholy and of insanity is observed by much thicker
 tenebris; scilicet quæ sunt sine febre aut motu
darkness; as being things which are (exist) without fever or the motion
 sanguinis turbato ullo modo, sæpe hereditariæ, pendentes, ut
of the blood being disturbed in any manner, often hereditary, depending, as
 videtur, a prima et congenita fabrica corporis, præsertim
it appears, upon the original and congenital conformation of the body, especially
 cerebri, vitium cujus (sc. cerebri) tamen posset non detegi
of the brain, the disease of which nevertheless could not be detected
 a subtilissimo anatomico: quæ recurrunt per intervalla sæpe longa,
by the most minute anatomist: which return at intervals often long,
 quibus (sc. intervallis) homines videntur frui sana mente in sano
in which the persons seem to enjoy a sound mind in a sound
 corpore; et quæ denique sæpe oriuntur a malis mentis,
body; and which finally often arise from the disorders of the mind,
 nimirum gravibus affectibus, effectus quorum (sc. malorum mentis) in
doubtless grievous affections, the effects of which upon

plane ostendunt inæqualem, inordinatam ejus actionem, vel incitationem, ut multi vocant, fieri. Delirii a venenis hæc quoque ratio est.

298. Ex dictis, ratio non plene quidem sed aliquatenus redditur, cur varii generis vehementiæ, ominis, delirium; cur sæpe motu, luce, strepitu, animi affectibus, medicamentis stimulantibus, calore, auctum; cur nunc misso ex venis sanguine, et tenui diæta, nunc vino et stimulantibus tollatur; cur aliquando visu et colloquio amicorum et adstantium, rerumque bene notarum conspectu, levetur vel compescatur; cur sæpe ingravescat si æger in lecto

detineatur, mitius evasurum si surrexerit, et paulisper erectus sederit.

299. Melancholiæ et insanix ratio multo densioribus tenebris obtegitur: scilicet, quæ sine febre sunt, aut motu sanguinis ullo modo turbato; sæpe quoque hereditariæ, a prima et congenita corporis, et præsertim cerebri, fabrica, ut videtur, pendentes, cujus tamen vitium a subtilissimo anatomico non detegi posset: quæ per intervalla recurrunt, sæpe longa, quibus homines mente sana in corpore sano frui videntur: et quæ denique a malis mentis, gravibus nimirum affectibus, sæpe oriuntur, quorum

cerebrum, et ratio quâ nocent adeo, sunt prorsus ignota.
the brain, and the manner in which they hurt so much, are altogether unknown.

300. Tamen, est notum varia vitia cerebri, obstructiones, tumores, vel ipsius vel calvarie, prementis in id (sc. cerebrum), vim illatam capiti, et ut medici scriptores ferunt duritiem, siccitatem cerebri ipsius, et quædam irritamenta, stimulantia nervosum genus, inducere malum. Et profecto tanta est irritatio captis mente, ut sæpe per longum tempus dormiant parum, vel nihil, neque sopiantur facile solitis remediis.
Nevertheless, it is known that various disorders of the brain, obstructions, tumours, either of itself or of the calvaria, pressing upon it, violence done to the head, and as medical writers say hardness, dryness of the brain itself, and certain irritants, stimulating the nervous system, bring on the disorder. And truly so great is the irritation to persons insane, that often for a long time they can sleep little, or not at all, nor can they be lulled easily by the usual remedies.

301. Sed neque hæc scientia de morbis cerebri et mentis, quamvis exigua et imperfecta, caret suis difficultatibus: nam læsione cerebri vel cujusvis partis ejus factâ, tumore, osse crescente in mucronem et irritante (sc. cerebrum), &c. nemo prædixerit quidnam mali talis læsio factura sit: epilepsiam, apoplexiam, hemiplegiam, stuporem, melancholiam, furorem, dolorem capitis, aut nil præter solitum. Enim, exempla non desunt hominum, qui convaluerunt et vixerunt diu post haud exiguam partem cerebri amissam; vel qui, magna parte cerebri corruptâ, perceperunt nil incommodi, donec tandem corruerint subito, convulsi et moribundi.
But neither does this knowledge of the diseases of the brain and mind, although little and imperfect, want its own difficulties: for injury of the brain or of any part of it being done, by tumour, by bone growing into a point and irritating it, &c. no one could (have) foretell what kind of disorder such a lesion would cause: (whether) epilepsy, apoplexy, hemiplegia, stupor, melancholy, madness, pain of the head, or nothing unusual. Moreover, examples are not wanting of men, who have got well and lived a long time after no small part of the brain being lost; or who, a great part of the brain being corrupted, have perceived no inconvenience, until at length they have fallen down suddenly, convulsed and dying.

302. Aliud vitium interiorum sensuum, omnino diversum ab his,
Another disorder of the internal senses, altogether differing from these,

effectus in cerebrum, et ratio qua adeo nocent, prorsus ignota sunt.

300. Notum tamen est varia cerebri vitia, obstructiones, tumores, vel ipsius, vel calvarie, in id prementis, vim capiti illatam, et, ut ferunt scriptores medici, cerebri ipsius duritiem, siccitatem, et irritamenta quædam genus nervosum stimulantia, malum inducere. Et profecto tanta irritatio mente captis est, ut sæpe per longum tempus parum vel nihil dormiant, neque solitis remediis facile sopiantur.

301. Sed neque hæc, quamvis exigua et imperfecta, de cerebri et mentis morbis, scientia,

suis difficultatibus caret: nam facta cerebri vel partis ejus cujusvis læsione, tumore, osse in mucronem crescente et irritante, &c. nemo prædixerit quidnam mali talis læsio factura sit; epilepsiam, apoplexiam, hemiplegiam, stuporem, melancholiam, furorem, dolorem capitis, aut nil præter solitum. Non desunt enim exempla hominum, qui post amissam haud exiguam cerebri partem, convaluerunt, et diu vixerunt; vel qui, corrupta magna cerebri parte, nil incommodi perceperunt, donec tandem subito corruerint convulsi et moribundi.

302. Superest et aliud sensuum interiorum

et superest, scilicet fatuitas. Fatui sunt (ii) qui habent
also remains, namely fatuity. Fatuous persons are they who have
 nullum iudicium de rebus, et memoriam, aut nullam aut imparem
no judgment about things, and memory, either none or unequal
 muneribus vitæ. Quædam fatuitas revera est communis, naturalis
to the duties of life. A certain fatuity truly is common, natural
 omnibus infantibus neque morbosa: quod si permanserit ultra infantiam,
to all infants nor diseased: but if it should remain beyond infancy,
 tum est gravis morbus, et plerumque insanabilis. Fatuitas
then it is a severe disease, and for the most part incurable. Fatuity
 agnoscit similes causas ac alia vitia internorum sensuum,
acknowledges similar causes as the other disorders of the internal senses,
 quantum hæ (sc. causæ) possint detegi oculis vel scalpello:
as far as these can be detected by the eyes or by the scalpel:
 observatur frequens comes et effectus epilepsiæ. Hæc (sc. fatuitas),
it is observed the frequent companion and effect of epilepsy. This,
 si duxerit originem a causis sitis extra caput, veluti a
if it have drawn its origin from causes situated without the head, as from
 vermibus hospitantibus in intestinis, vermibus expulsis, que
worms boarding and lodging in the intestines, the worms being expelled, and
 epilepsiâ sanata, mens aliquando accedit fatuo.
the epilepsy cured, the mind sometimes comes to the fatuous person.

303. Est haud absimile fatuitatem infantum, et defectum
It is not unlikely that the fatuity of infants, and that the defect
 memoriæ, que ideo iudicii, qui accidit senibus, oriri a
of memory, and therefore of judgment, which happens to old men, arise from
 statu cerebri nimis duri et rigidi in his, vero nimis mollis in
a state of brain too hard and rigid in the latter, but too soft in
 illis.
the former.

vitium, ab his omnino diversum, fatuitas scilicet. Fatui sunt qui iudicium de rebus nullum, et memoriam aut nullam, aut vitæ muneribus imparem, habent. Fatuitas quædam revera omnibus infantibus communis, naturalis, neque morbosa est: quod si ultra infantiam permanserit, tum morbus est gravis, et plerumque insanabilis. Similes ac alia sensuum internorum vitia fatuitas agnoscit causas, quantum hæ oculis vel scalpello detegi

possint: epilepsiæ frequens comes et effectus observatur. Hæc, si a causis extra caput sitis originem duxerit, veluti a vermibus in intestinis hospitantibus, expulsis vermibus, sanataque epilepsia, mens fatua aliquando accedit.

303. Haud absimile est, fatuitatem infantum, et memoriæ, ideoque iudicii defectum, qui senibus accidit, a statu cerebri in his nimis duri et rigidi, illis vero nimis mollis, oriri.

CAP. XI.
CHAP. XI.

De motu musculorum.
Of the motion of muscles.

304. Ea conditio musculorum vocatur mobilitas quâ,
That condition of the muscles is called mobility (irritability) in which,
stimulo admoto, fibræ eorum contrahant se.
a stimulus being applied, the fibres of them contract themselves.

305. Varii stimuli existunt; imprimis, omne mechanicum acie
Various stimuli exist; in the first place, every mechanical sharp thing
scilicet, quicquid pungit, secat, vellit, lacerat, distendit,
(irritant) that is, whatever pricks, cuts, pulls, lacerates, distends,
excitat contractionem fibrarum musculorum; tum quoque multa
excites the contraction of the fibres of the muscles; as well also many
chemical acria derivata ex animalibus, et frugibus, et fossilibus
chemical acids derived from animals, and fruits, and fossil
rebus; etiam frigus, calor, electrica scintilla; demum, variis status
things; also cold, heat, the electric spark; lastly, various states
ive actiones animi, de quibus erit postea sermo,
or actions of the mind, of which there will be afterwards a discourse,
sunt annumeranda cum his.
are to be reckoned among these.

306. Quidam ex his stimulis, imprimis distentio, videntur afficere
Some of these stimuli, especially distention, seem to affect
solidas partes quæ, causâ distinctionis, vocantur mortuæ,
the solid parts, which, for the sake of distinction, are called dead (ones),
et inducere aliquid contractionis in iis. Vero contractio earum
and to induce something (of) contraction in them. But the contraction of them
(mortuar. part.) differt multum ab illâ de quâ nunc agitur. Enim
differs much from that of which it is now treated. For
est parva, et lenta, et constans, nec fit priusquam
it is small, and slow, and constant, nor does it take place before that
distendens vis fuerit sublata, scilicet quam nequit
the distending force has been removed, as being that which it cannot
superare.
overcome.

307. Vero contractio musculorum est subita et validissima, sæpe
But the contraction of the muscles is sudden and very powerful, often

CAP. XI.—*De motu musculorum.*

304. Mobilitas vocatur ea musculorum conditio, quæ, admoto stimulo, fibræ eorum se contrahant.

305. Varii existunt stimuli; omne imprimis acie mechanicum, quicquid scilicet pungit, secat, vellit, lacerat, distendit, contractionem fibrarum musculorum excitat; tum quoque multa acria chemica, ex animalibus, et frugibus, et fossilibus rebus derivata: frigus etiam, calor, scintilla electrica, variis demum animi status sive actiones

(de quibus postea sermo erit) cum his annumeranda sunt.

306. Quidam ex his stimulis, distentio imprimis, partes solidas, quæ, distinctionis causa, mortuæ vocantur (76, et seq.) afficere videntur, et aliquid contractionis in iis inducere. Multum vero differt contractio earum ab illa de qua nunc agitur. Parva enim est, et lenta, et constans, nec prius fit quam vis distendens sublata fuerit, scilicet quam superare nequit.

major distendente vi, quippe quam vincit allquando ;
greater than the distending force, as being that which it overcomes sometimes ;
 porro, habet alternam relaxationem. Igitur, illa mobilitas
moreover, it has an alternate relaxation. Therefore, that mobility (irritability)
 quæ est propria fibris solis musculorum, potest facile distingui
which is peculiar to the fibres alone of the muscles, can easily be distinguished
 a vi resiliendi quâ, plus ve minus perfectâ, omnes solidæ partes
from the elasticity in which, more or less perfect, all the solid parts
 corporum animalium pollent.
of the bodies of animals excel.

308. Ratio contractionis musculorum, diu que multum quæsitâ
The cause of the contraction of muscles, long and much sought for
 frustra, adhuc latet; autem fere hic est modus,
in vain, as yet lies hid; but for the most part this (the following) is the manner,
 hæc lex ejusdem, si spectetur attente in fasciculo fibrarum
this the law of the same, if it be observed attentively in a bundle of fibres
 exsecto e corpore. Totus tremit, fit brevior, et crassior, et
cut out from the body. The whole trembles, becomes shorter, and thicker, and
 durior, et rugosus, et interdum pallidus, dum musculus contrahitur;
harder, and wrinkled, and sometimes pale, whilst the muscle is contracted;
 tum relaxatur, fit planus, levis, mollis, et iterum longus, et demum
then it is relaxed, becomes flat, smooth, soft, and again long, and at length
 integrat suam contractionem.
renews its contraction.

309. Vero multum abest ut musculi semper agant eodem
But it is very far from that the muscles always act in the same
 modo in vivo et integro corpore. Enim longi musculi trunci
manner in the living and sound body. For the long muscles of the trunk
 corporis, et artuum, non modo contrahuntur, ad arbitrium
of the body, and of the limbs, not only are contracted, at the pleasure
 hominis, sed manent contracti diu: quamvis profecto relictis sibi,
of a man, but remain contracted a long time: although truly left to themselves,
 brevi relaxarentur. Porro, cavi musculi, scilicet fibræ, quæ
they shortly would be relaxed. Moreover, the hollow muscles, namely the fibres, which
 circumdant cava organa corporis, nequeunt ostendere suam
surround the hollow organs of the body, cannot shew their
 relaxationem; veluti in corde, arteriis, intestinis, vesicâ; quamvis
relaxation; as in the heart, arteries, intestines, bladder; although
 functiones harum partium, quoque bene intellectæ, demonstrant
the functions of these parts, also well understood, demonstrate
 alternam relaxationem succedere contractioni. Postremo, illi musculi
that alternate relaxation succeeds to contraction. Finally, those muscles

307. Contractio musculorum vero subita est, et validissima, vi distendente sæpe major, quippe quam aliquando vincit; porro, alternam relaxationem habet. Facile igitur distingui potest mobilitas illa, quæ solis fibris musculorum propria est, a vi resiliendi, qua, plus minusve perfecta, omnes solidæ partes corporum animalium pollent.

308. Contractionis musculorum ratio, diu multumque frustra quæsitâ, adhuc latet: ejusdem autem hic fere modus, hæc lex est, si in fasciculo fibrarum e corpore exsecto attente spectetur. Tremunt totus, brevior fit, et crassior, et durior, et rugosus, et pallidus interdum,

dum contrahitur musculus: tum relaxatur, fit planus, levis, mollis, et longus iterum, et demum suam contractionem integrat.

309. Multum vero abest, ut semper in vivo et integro corpore eodem modo agant musculi. Longi enim musculi trunci corporis et artuum, ad arbitrium hominis, non modo contrahuntur, sed diu contracti manent: quamvis profecto sibi relictis brevi relaxarentur. Porro, cavi musculi, fibræ scilicet quæ cava corporis organa circumdant, relaxationem suam ostendere nequeunt; veluti in corde, arteriis, intestinis, vesicâ: quamvis harum quoque partium functiones, bene intellectæ, alternam relaxationem

qui claudunt varia ostia quibus præponuntur, et solent
which close the various passages before which they are put, and are accustomed
 vocari sphincteres, nunquam, ut videtur, penitus relaxantur in
to be called sphincters, never, as it appears, are entirely relaxed in
 sano homine.
the healthy man.

310. Fabricâ, et situ, et finibus diversorum musculorum, et
The fabric, and situation, and terminations of the different muscles, and
 (eorum) conjunctione et nexu cum aliis partibus, probè perspectis,
(their) union and connexion with other parts, being clearly perceived,
 variæ actiones illorum, que variis usus in corpore, intelligentur
the various actions of them, and (their) various uses in the body, will be understood
 facillimè; que simul erit perspicuum, omnes actiones,
very easily; and at the same time it will be evident, that all the actions,
 quibus inserviunt, absolvi communi motu illorum, scilicet,
to which they serve, are performed by the common motion of them, namely,
 vel simplice, contractione, vel hac repetitâ et junctâ cum alternâ
either by simple contraction, or by this repeated and joined with an alternate
 relaxatione. Sic longus musculus, dum agit, oportet faciat partes
relaxation. Thus a long muscle, whilst it acts, must cause the parts
 quibus adnectitur appropinquare; vero cavus musculus oportet
to which it is fastened to approximate; but a hollow muscle must
 fiat arctior, et propellat quicquid continet quâ porta
become more contracted, and propel whatever it contains where a passage
 datur; vero sphincter claudat ostium cui præponitur. Et
is afforded; but the sphincter closes the passage before which it is placed. And
 profecto hi sunt usus musculorum.
truly these are the uses of the muscles.

311. Musculi fere desinunt in tenuem, firmam, validam, et
Muscles commonly terminate in a thin, firm, strong, and
 splendentem substantiam, (si fuerit comparata cum mole musculi
shining substance, (if it be compared with the bulk of the muscle
 ipsius); quàm veteres scriptores vocarunt nervum, vero recentiores
itself); which the old writers have called nerve, but more modern (ones),
 causa distinctionis ab alio genere nervorum, tendinem. Autem
for the sake of distinction from another kind of nerves, tendon. But
 fabricatio hujusmodi datur musculosis partibus a Summo
a structure of this kind is given to the muscular parts by the Supreme
 Opifice corporis, plane hoc consilio, quo adnectantur
Constructor of the body, evidently with this design, that they may be joined
 facilius et elegantius ossibus que cæteris partibus quibus est
more easily and neatly to the bones and the other parts with which it is

contractioni succedere, demonstrant. Postremo, musculi illi qui varia quibus præponuntur ostia claudunt, et sphincteres vocari solent, nunquam in sano homine, ut videtur, penitus relaxantur.

310. Perspectis probe diversorum musculorum fabrica, et situ, et finibus, et cum aliis partibus conjunctione et nexu, variæ illorum actiones, variæque in corpore usus, facillime intelligentur; simulque perspicuum erit omnes quibus inserviunt actiones, communi illorum motu, scilicet vel simplice contractione, vel hac cum alternâ relaxatione junctâ et repetitâ, absolvi. Sic longus musculus, dum agit, oportet par-

tes quibus adnectitur appropinquare faciat; cavus vero musculus oportet arctior fiat, et quicquid continet qua datur porta propellat; sphincter vero ostium cui præponitur claudat. Et hi profecto musculorum usus sunt.

311. Musculi fere desinunt in substantiam tenuem (si cum mole ipsius musculi comparata fuerit) firmam, validam, splendentem; quàm veteres nervum, recentiores vero scriptores, distinctionis causa ab alio nervorum genere (110) tendinem vocarunt. Hujusmodi autem fabricatio partibus musculosis, hoc plane consilio, a Summo corporis Opifice datur, quo facilius et elegantius ossibus, cæterisque quibus opus est

opus; et quo plures muscoli inserti in punctis ipsis
necessary; and that the more muscles (being) inserted in the points themselves
 ossium quibus oportet, moveant et regnant varios artus
of the bones in which it is necessary, may move and govern the different limbs
 et universum corpus quam optime. Vero tendo agit nihil,
and the whole body in the best manner possible. But the tendon does nothing,
 et potest haberi pro fune in machina, qua (fune) motus
and may be considered as a cord in the machine, by which the motions
 cujûsvis partis communicantur cum aliis et remotis partibus.
of any one part are communicated to other and remote parts.

312. Disputatum est multum, que diu, num moles
It has been debated much, and for a long time, whether the size
 musculi augetur aut minueretur donec contractus esset. Differentia
of a muscle was increased or diminished whilst it was contracted. The difference
 reverà, siqua sit, est adeo parva, ut neque reducatur facile
truly, if any there be, is so small, that neither can it be reduced easily
 ad mensuram, neque hactenus constat pro certo qualis sit.
to measure, nor to this time can it be established for certain what sort it be.

313. Musculi agunt immani que vix credibili vi. Ingentia
The muscles act with great and scarcely credible power. The great
 pondera quæ tollant docent, quamvis absit multum ut tota
weights which they can raise teach, although it is far from that the whole
 vis fibrarum apte impendatur ad efficiendum istum motum: im-
force of the fibres is properly expended for effecting that motion: in
 primis, ob tendinem insertum proxime centrum
the first place, on account of the tendon (being) inserted very near to the centre
 motûs que (ob) eundem (tendinem) decurrentem valde obliquè; tum
of motion and the same running down very obliquely; as
 quoque propter singulas fibras quæ constituunt fasciculos, que
also on account of the several fibres which make up the bundles, and
 demum fasciculos ipsos tendentes admodum oblique ad
indeed the bundles themselves running very obliquely to (in reference to)
 lineam directionis tendinis; quo fit ut magna pars
the line of direction of the tendon; by which it happens that a great part
 virium agentium adeo obliquè, fere contrariè, perdat se.
of the powers acting so obliquely, almost oppositely, destroys itself.

Calculis subductis ex his principiis, enormis vis
Calculations being drawn (calculating) from these principles, an enormous power
 musculorum eruitur, duplum cujus denique est sumendum pro
of the muscles is set forth, the double of which indeed is to be taken as
 vi quam musculus exerat vel sustineat, quoniam omnis actio
the one which a muscle can exert or support, because all action

partibus adnectantur; et quo plures muscoli, ipsi ossium punctis quibus oportet inserti, varios artus, et universum corpus, quam optime moveant et regant. Tendo vero nihil agit, et pro fune in machina haberi potest, qua motus partis cujûsvis cum aliis et remotis partibus communicantur.

312. Diu multumque disputatum est, musculi num augetur an minueretur moles, donec contractus esset. Differentia, siqua revera sit, adeo parva est, ut neque ad mensuram facile reducat, neque qualis sit hactenus pro certo constat.

313. Immani vixque credibili vi agunt mus-

culi. Docent ingentia quæ tollant pondera, quamvis multum absit ut tota fibrarum vis apte ad istum motum efficiendum impendatur; imprimis ob tendinem proxime centrum motus insertum, eundemque valde oblique decurrentem; tum quoque propter fibras singulas quæ fasciculos constituunt, ipsosque demum fasciculos, oblique admodum tendentes, ad lineam directionis, tendinis; quo fit ut magna pars virium adeo oblique, fere contrarie, agentium, se perdat. Ex his principiis, subductis calculis, enormis vis musculorum eruitur, cujus denique duplum sumendum est, pro vi quam musculus exerat, vel sustineat; quoniam actio omnis

istiusmodi est reciproca, et ideo musculus trahitur ad suam
of that kind is reciprocal, and therefore the muscle is drawn to its own
 originem, tantâ vi quantâ trahit partem cui inse-
origin, with as great a force as it draws the part into which it is
 ritur. Vel vigesima pars tantæ vis dirumperet et divelleret
inserted. Even the twentieth part of so great a force would break and tear in sunder
 musculum exsectum à corpore. Igitur, si subest nil erroris hic,
a muscle cut out from the body. Therefore, if there is no error here,
 oportet vitalem vim musculorum esse miram.
it behoves that the vital power of the muscles be wonderful.

314. Neque profecto Natura videtur consuluisse dispendio
Nor truly (does) Nature seem to have consulted the waste
 virium tantum quantum elegantiæ et formæ corporis, pulcherrimè
of power so much as the elegance and shape of the body, very beautifully
 accommodatæ ad omnes motus.
accommodated for all (its) motions.

315. Contractio ipsa quoque musculi est insignis, sed varia
The contraction itself also of a muscle is remarkable, but various
 variis partibus. Sunt musculi qui fiunt breviores quartâ
in various parts. There are muscles which become shorter by a fourth
 parte; sunt qui contrahuntur ad quartam partem, in quibusdam
part; there are those which are contracted to a fourth part, in some
 animalibus ad decimam partem, pristinæ longitudinis.
animals to a tenth part, of (their) former length.

316. Contractiones musculorum peraguntur et repetuntur incredibili
The contractions of muscles are performed and repeated with incredible
 velocitate. Cursus, præsertim quadrupedum, docent (hoc); vel lingua (docet),
velocity. Races, especially of quadrupeds, prove this; or the tongue,
 quæ expresserit quadringenta vocabula, fortasse bis mille literas,
which will express four hundred words, perhaps twice a thousand letters,
 spatio temporis quod solemus vocare minutum, quamvis
in a space of time which we are accustomed to call a minute, although
 plures contractiones musculorum requirantur ad exprimendas multas literas.
many contractions of the muscles are required to express many letters.

317. Alii musculi faciliùs concipiunt motus, alii ægrius;
Some muscles more easily take on motions, others more difficultly;
 tum in variis hominibus, tum quoque in eodem homine habente
as well in different men, as also in the same man having
 se aliter atque aliter variis temporibus.
himself differently at various times.

istiusmodi reciproca est, et musculus ideo tanta vi ad suam originem trahitur, quanta partem cui inseritur trahit. Tantæ vis vel vigesima pars musculum e corpore exsectum dirumperet et divelleret. Miram igitur, si nil erroris hic subest, oportet esse vim vitalem musculorum.

314. Neque profecto, dispendio virium tantum consuluisse videtur Natura, quantum corporis elegantiam et formam, ad omnes motus pulcherrime accommodatæ.

315. Insignis quoque est ipsa musculi contractio, sed varia variis partibus. Sunt qui quarta parte breviores fiunt musculi; sunt qui ad quartam partem, in quibusdam animalibus ad

decimam partem, pristinæ longitudinis contrahuntur.

316. Incredibili velocitate peraguntur et repetuntur musculorum contractiones. Docent cursus, præsertim quadrupedum; vel lingua, quæ quadringenta vocabula, fortasse bis mille literas, expresserit, spatio temporis quod minutum vocare solemus, quamvis ad multas literas exprimendas plures musculorum contractiones requirantur.

317. Musculi alii facilius, alii ægrius motus concipiunt: tum in variis hominibus, tum quoque in eodem homine variis temporibus, aliter atque aliter se habente.

318. Quin et eædem res, quæ vehementissimè incitant certos musculos ad motus, parum afficiunt alios.
But also the same things, which most violently excite certain muscles to motions, little affect others.

319. Philosophi, attendentes animos motui musculorum, crediderunt se perspexisse varios fontes unde mira vis eorum esset derivata; aliquando ratiocinati subtiliùs quam verè de re simplice satis.
Philosophers, applying (their) minds to the motion of muscles, have believed (that) they had discovered the various sources from whence the wonderful power of them was derived; sometimes reasoning more subtly than truly about a thing simple enough.

320. Musculi, non secus ac omnis solida pars corporum animalium, manifeste possident haud exiguam vim resiliendi; superstitem etiam post mortem; vero, quicquid amplius motûs habent, id omnino pendet a vitâ, et a nexu qui intercedit inter ipsos (musculos) et cerebrum et nervos.
Muscles, in like manner as every solid part of the bodies of animals, manifestly possess no small elasticity; remaining even after death; but, whatever more of motion they have, that entirely depends upon life, and upon the connexion which subsists between themselves and the brain and nerves.

321. Tamen, proxima vis musculorum post hanc simplicem vim resiliendi, est (ea) quæ vocatur tonica: nimirum distentio ipsa est stimulus cui omnis musculus paret, et fere omnes musculi vivi hominis distenduntur plus minus ultra naturalem statum, scilicet, eum statum quem, facti suæ spontis, tenerent.
However, the next power of the muscles after this simple elasticity, is that which is called tonic: doubtless distention itself is a stimulus which every muscle obeys, and almost all the muscles of the living man are distended more (or) less beyond the natural state, that is, that state which, placed (left) at their liberty, they would keep.

322. Distentio hujusmodi datur, imprimis, ossibus ipsis quibus adnectuntur crescentibus; tum quoque actione reciprocorum oppositorum musculorum: tum porro pondere quarundam partium quas musculi sustinent; et, denique, plenitudine
Distention of this kind is produced, first of all, by the bones themselves to which they are joined growing; as well also by the action of the reciprocal opposed (antagonist) muscles: as also by the weight of certain parts which the muscles support; and, finally, by the fulness

318. Quin et eædem res quæ certos musculos ad motus vehementissime incitant, alios parum afficiunt.

319. Philosophi motui musculorum animos attendentes, varios se perspexisse fontes crediderunt, unde mira eorum vis derivata esset; subtilius aliquando quam vere de re satis simpliciter ratiocinati.

320. Vim resiliendi haud exiguam, non secus ac omnis pars solida corporum animalium, manifeste possident musculi; etiam post mortem superstitem; quicquid vero motus amplius habent, id a vita omnino pendet, et a nexu qui ipsos inter et cerebrum et nervos intercedit.

321. Proxima tamen post hanc simplicem vim resiliendi, est vis quæ vocatur tonica musculorum: nimirum, distentio ipsa stimulus est, cui omnis musculus paret (305, 306); et omnes fere musculi vivi hominis plus minus distenduntur ultra statum naturalem, eum scilicet statum, quem, suæ spontis facti, tenerent.

322. Hujusmodi distentio datur, imprimis, ipsis quibus adnectuntur crescentibus ossibus; tum quoque actione musculorum oppositorum, reciprocorum: tum porro pondere partium quarundam quas musculi sustinent; et denique plenitudine cavorum organorum aut viscerum,

cavorum organorum aut viscerum quæ musculi circundant, vel
of the hollow organs or viscera which the muscles surround, or
 quibuscum connectuntur quavis modo.
with which they are connected in any way.

323. *Tonica vis augetur, et simul vigor actionis*
The tonic power is increased, and at the same time the vigor of action
 musculi, majore distentione: minuitur minore. Hinc effectus
of a muscle, by greater distention: it is diminished by less. Hence the effects
 plenitudinis vasorum in incitando motu sanguinis intelliguntur:
of fulness of vessels in quickening the motion of the blood are understood:
 hinc quoque pendet ratio mittendi sanguinis in multis morbis;
hereupon also depends the reason of letting blood in many diseases;
 quo, nimirum, certius aut præsentius auxilium, ad tempe-
than which, without doubt, a more certain or more effectual remedy, to moderate
 randum impetum sanguinis, non detur.
the impetus of the blood, cannot be offered.

324. *Autem hæc tonica vis, quatenus pendeat a distentione, habet*
But this tonic power, so far as it depends upon distention, has
 suos, et quidem satis arctos limites: enim ingens aut
its own, and indeed sufficiently narrow limits: for great or
 diuturna distentio musculosarum fibrarum abest tantum ut reddat
ong continued distention of muscular fibres is so far from that it renders
 earum contractionem faciliorem et validiorem, ut
(from rendering) their contraction easier and more powerful, that
 sæpe minuat vel destruat eandem; et sic musculi, fere,
(it) often diminishes or destroys the same; and thus muscles, for the most part,
 solvantur, neque recuperaturi (sunt) facile neque subito pristinam
are relaxed, nor will they recover easily nor suddenly (their) former
 vim.
power.

325. *Porro, musculus distentus nullo modo præter solitum, contrahit*
Moreover, a muscle distended (in) no way beyond usual, contracts
 se ad contactum cujûsvis stimuli. Medici imposuerunt nomen
itself at the contact of any stimulus. Physicians have affixed the name
 vim insitam huic conditioni musculorum.
vis insita to this property of muscles.

326. *Denique, musculo intacto, si stimulus fuerit admotus*
Again, the muscle being untouched, if a stimulus (should) be applied
 nervo qui adit eum, similes motus excitantur. Vel, si cerebrum
to the nerve which goes to it, similar motions are excited. Or, if the brain
 ipsum fuerit irritatum, plurimi aut omnes musculi convelluntur.
itself be irritated, most of or all the muscles are convulsed.

quæ musculi circundant, vel quibuscum quavis modo connectuntur.

323. *Vis tonica augetur, et vigor actionis musculi simul, majore distentione: minore, minuitur. Hinc intelliguntur vasorum plenitudinis effectus in motu sanguinis incitando: hinc quoque ratio pendet, sanguinis in multis morbis mittendi; nimirum, quo non detur, ad impetum sanguinis temperandum, certius aut præsentius auxilium.*

324. *Hæc autem vis tonica, quatenus a distentione pendeat, suos, et quidem satis arctos limites habet: ingens enim aut diuturna fibra-*

rum musculosarum distentio tantum abest ut contractionem earum faciliorem et validiorem reddat, ut eandem sæpe minuat vel destruat; et sic musculi fere solvantur, pristinam vim neque facile neque subito recuperaturi.

325. *Porro, musculus nullo præter solitum modo distentus, ad contactum stimuli cujûsvis se contrahit. Huic musculorum conditioni nomen vim insitam medici imposuerunt.*

326. *Denique, intacto musculo, si stimulus nervo qui eum adit admotus fuerit, similes motus excitantur. Vel, si cerebrum ipsum irritatum fuerit, plurimi aut omnes musculi con-*

Hæc conditio musculorum appellatur *nervosa vis*, diversa tantum
This property of muscles is called nervous power, differing only
 sede a vi *insitâ*.
in seat from the vis insita.

327. Postremo, musculis, nervis, cerebro, intactis, ciemus
Lastly, the muscles, nerves, brain, being untouched, we excite
 plurimos musculos ad contractionem voluntate solâ: hæc vis
a great many muscles to contraction by the will alone: this power (is)
 rectè vocatur *animalis*, quippe quæ contingat animalibus solis.
rightly called the animal, as being one which can belong to animals alone.

328. Tamen, omnes musculi non subjiciuntur imperio voluntatis:
However, all the muscles are not subjected to the control of the will:
 et plurimæ actiones, et maximi momenti, absolvuntur, homine
and a great many actions, and of the greatest moment, are performed, the person
 inscio, invito, vel nitente contra. Hinc motus
being ignorant, unwilling, even endeavouring against (them). Hence the motion
 musculorum est vel voluntarius vel invitus.
of muscles is either voluntary or involuntary.

329. Motus omnium musculorum capitis, vultus, oculorum,
The motion of all the muscles of the head, countenance, eyes,
 oris usque ad pharyngem, cervicis, trunci, artuum, est voluntarius
mouth as far as the pharynx, of the neck, the trunk, the limbs, is voluntary
 in sano homine, scilicet, potest excitari voluntate solâ; quamvis
in a healthy person, that is, can be excited by the will alone; although
 citra morbum, isti musculi, homine inscio aut nolente non
without disease, those muscles, the person unconscious or unwilling may
 nunquam exercentur.
sometimes be exercised.

330. Inviti motus sunt (ii) cordis, arteriarum, secer-
The involuntary motions are those of the heart, of the arteries, of the
 nentium organorum, totius tubi intestinorum, a pharynge ad
secreting organs, of the whole tube of the intestines, from the pharynx to
 anum, pupillæ oculi, que aliorum sphincterum, (quamvis sane
the anus, of the pupil of the eye, and of the other sphincters, (although truly
 habeamus nonnihil imperii in plerosque horum,) meatuum
we have some (thing of) control upon most of these,) of the passages
 urinæ, vesicæ, uteri, bronchiorum.
of the urine, of the bladder, the uterus, of the bronchia.

331. Musculi respirationis occupant ferè medium locum inter
The muscles of respiration occupy nearly a middle place between
 hos, scilicet, transversum septum, musculi abdominis, et qui
those, that is, the transverse septum, the muscles of the abdomen, and (those) which

velluntur. Hæc musculorum conditio vis *nervosa* appellatur; a vi *insita* sede tantum diversa.

327. Postremo, intactis musculis, nervis, cerebro, sola voluntate plurimos musculos ad contractionem ciemus; hæc vis recte *animalis* vocatur, quippe quæ solis animalibus contingat.

328. Non omnes tamen musculi voluntatis imperio subjiciuntur: et plurimæ et maximi momenti actiones, inscio, invito, vel contra nitente homine, absolvuntur. Hinc motus musculorum est vel voluntarius vel invitus.

329. Motus omnium, capitis, vultus, oculorum, oris ad *pharyngem* usque, cervicis, trunci,

artuum musculorum, in sano homine, voluntarius est, scilicet, sola voluntate excitari potest; quamvis nonnunquam citra morbum, inscio aut nolente homine, isti musculi exercentur.

330. Inviti motus sunt cordis, arteriarum, organorum secerentium, totius tubi intestinorum, a *pharynge* ad anum, pupillæ oculi, aliorumque *sphincterum* (quamvis sane in plerosque horum nonnihil imperii habeamus), meatuum urinæ, vesicæ, uteri, *bronchiorum*.

331. Medium fere locum hos inter occupant respirationis musculi, septum scilicet transversum, musculi abdominis, et qui inter costas

jacent inter costas, et quotquot musculi ita conjunguntur cum
lie between the ribs, and whatever muscles are so connected with
 costis, ut contractio horum possit vel firmare, vel elevare,
the ribs, that the contraction of them may either fix, or elevate,
 vel deprimere eas (costas.)
or depress them.

332. Est vix aut ne quidem vix credibile, vires quas
It is scarcely or not even scarcely credible, that powers which
 Natura fecit distinctas, posse facile confundi, que sanum
Nature made distinct, can easily be confounded, and that a healthy
 hominem unquam amisisse imperium in voluntarios motus,
man ever should have lost his control upon the voluntary motions,
 adeptum esse in invitos.
(or) have acquired (it) upon the involuntary.

333. Singuli motuum, qui peraguntur citra voluntatem, exci-
Each of the motions, which are performed without the will, are ex-
 tantur quodam stimulo admoto aut musculis ipsis, aut sentienti
cited by some stimulus applied either to the muscles themselves, or to a sentient
 forsitan distanti parti, quamvis conspiranti per nervosum consensum
perhaps distant part, although agreeing through nervous sympathy
 cum iis; aut afficiente cerebrum aut mentem ipsam; unde,
with them; or affecting the brain or the mind itself; from which,
 secundum primam atque congenitam fabricam et constitutionem
according to the original and congenital structure and constitution
 corporis, certæ partes tantum afficiuntur et cientur ad motum.
of the body, certain parts only are affected and are excited to motion.

334. Igitur provida Pater rerum videtur admovisse
Therefore the provident Parent of things appears to have applied
 incitamenta quæ oportebat iis organis, actiones quorum essent
the incitements which it behoved to those organs, the actions of which were
 omnino necessariæ ad sustinendam vitam, que reficiendum corpus, vel
absolutely necessary to sustain life, and recruit the body, or
 ad exercenda certa munera vitæ. Autem homini dedit divisum
to exercise certain functions of life. But to man he has given a divided
 imperium in ea (munera) quæ partim funguntur vitali munere,
control over those which partly perform a vital function,
 partim inserviunt aliis officiis minoris momenti neque perpetuis;
partly subserve to other offices of less moment nor perpetual;
 nempe, permisit reliqua arbitrio ipsius (hominis).
finally, he has left the rest at the disposal of himself.

335. Homo est conscius sibi motuum qui sunt ex voluntate
Man is conscious to himself of the motions which are from the will

acent, et quotquot cum costis ita conjunguntur musculi, ut horum contractio eas vel firmare, vel elevare, vel deprimere possit.

332. Vix aut ne vix quidem credibile est, vires quas Natura fecit distinctas, facile posse confundi, hominemque sanum, imperium in voluntarios motus amisisse, in invitos adeptum esse unquam.

333. Motuum, qui citra voluntatem peraguntur singulis excitantur stimulo quodam, et ipsis musculis admoto, aut parti sentienti forsitan distanti, quamvis per consensum nervosum cum iis conspiranti; aut cerebrum, aut mentem ipsam afficiente; unde, secundum

primam atque congenitam corporis fabricam et constitutionem, certæ tantum partes afficiuntur, et ad motum cientur.

334. Admovisse igitur videtur provida rerum Pater incitamenta quæ oportebat iis organis, quorum actiones ad vitam sustinendam, corpusque reficiendum, vel ad certa vitæ munera exercenda, omnino necessariæ essent. In ea autem quæ partim vitali munere funguntur, partim aliis, minoris momenti neque perpetuis, officiis inserviunt, divisum imperium homini dedit; reliqua demum ipsius arbitrio permisit.

335. Motuum qui ex voluntate sunt, homo sibi conscius est: vix sane uniuscujusque mus-

vix, sane, uniuscujusque muscui qui juvet, sed (voluntary): scarcely, indeed, of every single muscle which may assist, but voluntatis ipsius, et conatus et motus totius membri, dummodo of the will itself, and of the efforts and motions of the whole limb, provided attendat animum hoc. Iste sensus evadit debilior longâ consuetudine; he apply the mind (to) this. That perception becomes weaker by long habituation; vero nunquam penitus deletur. but never is entirely destroyed.

336. Contra, motus qui sunt inviti vix On the other hand, the motions which are involuntary are scarcely percipiuntur; neque possunt percipi in sano corpore. Quod si perceived; nor can (they) be perceived in the healthy body. But if fuerint vehementes, imperfecti, abnormes, difficiles, aut impediti, they should be violent, imperfect, irregular, difficult, or impeded, tunc quidam molesti sensus, veluti dolor aut anxietas, nascuntur. then certain irksome sensations, as pain or anxiety, arise.

337. Motus medii inter hos, respirationis, nempe, The motions intermediate between these, of respiration, for example, permissi sibi, parum sentiuntur; sed, attentione animi left to themselves, are little perceived; but, the attention of the mind adhibitâ, possunt percipi. Quod, si exercentur ad nostrum being applied, they may be perceived. But, if (they) be exercised at our arbitrium insolito more, tum faciunt majorem sensum; impediti, pleasure in an unusual degree, then they excite a stronger perception; obstructed, miserrimè angunt hominem. they miserably torment the individual.

338. Musculi voluntarii motus redduntur firmiores, mobiliiores, The muscles of voluntary motion are rendered firmer, more mobile, et validiores, et fiunt magis torosi justo et valido usu, and stronger, and become more brawny by proper and vigorous exercise, modo hic non fuerit nimius: hinc solemus judicare provided this (shall) not be excessive: hence we are accustomed to judge ab formâ ipsâ de viribus hominis. Res bene perspecta from the form itself of the strength of a man. A thing well understood sculptoribus, qui norunt exprimere quod ad musculos, by sculptors, who know (how) to portray as (relates) to the muscles, Herculem aliâ ratione, Apollinem aliâ, Venerem aliâ. a Hercules in one way, an Apollo in another, a Venus in another.

339. Robur et mobilitas singulorum musculorum augentur The strength and mobility of the individual muscles are increased usu; quin et, conjunctio plurium musculorum qui conspirant by use; moreover, the combination of the several muscles which concur

culi qui juvet, sed ipsius voluntatis, et conatus, et motus totius membri, dummodo animum hoc attendat. Longa consuetudine sensus iste debilior evadit; nunquam vero penitus deletur.

336. Contra, qui inviti sunt motus, vix percipiuntur; neque in sano corpore percipi possunt. Quod, si vehementes, imperfecti, abnormes, difficiles, aut impediti fuerint, tunc sensus quidam molesti, veluti dolor aut anxietas, nascuntur.

337. Medii hos inter, motus respirationis nempe sibi permissi, parum sentiuntur; sed adhibita animi attentione, percipi possunt. Quod si insolito more ad nostrum arbitrium

exercentur, tum majorem sensum faciunt; impediti hominem miserrime angunt (186, et seq.)

338. Musculi voluntarii motus justo et valido usu, modo hic non nimius fuerit, firmiores, mobiliiores, et validiores redduntur, et magis torosi fiunt: hinc, ab ipsa formâ, de viribus hominis judicare solemus. Res sculptoribus bene perspecta, qui aliâ ratione Herculem, quod ad musculos, aliâ Apollinem, aliâ Venerem exprimere norunt.

339. Robur et mobilitas singulorum musculorum usu augentur: quin et plurium, qui ad eundem motum præstandum conspirant, mus-

ad præstandum eundem motum, sæpe repetita, fit facilior, promptior,
to perform the same motion, often repeated, becomes easier, readier,
 et accuratior consuetudine ipsâ.
and more accurate by habit itself.

340. Vero, si motus fuerint vehementes, insoliti, difficiles, aut
But, if the motions should be violent, unusual, difficult, or
 diuturni, tum vires exhauriuntur, homo defatigatur.
long continued, then the powers are exhausted, the individual is wearied out.

Actiones, qualescunque, exercebat, fiunt debiliores, incertæ,
The actions, (of) whatever kind, he was performing, become weaker, uncertain,
 et tremulæ; ingratus sensus sui generis, deinde dolor,
and tremulous; an unpleasant sensation of its own kind, then pain,
 postea rigiditas accedunt laborantibus artubus, debilitas et languor
afterwards stiffness are added to the suffering limbs, debility and languor
 universo corpori; quæ omnia fortiter suadent requiem et somnum.
to the whole body; which all strongly advise rest and sleep.

Si nulla intermissio laborum intercedat, ingens et universus defectus
If no intermission of his labours interposes, a great and universal failure
 virium, que interdum subita defectio animi, demum mors ipsa,
of the strength, and sometimes sudden fainting, at length death itself,
 ultima (adverbialiter reddend. est) imponunt finem iis.
last (ly) put an end to them.

341. Omnino, contra, musculi involuntarii motus neque
Altogether, on the other hand, the muscles of involuntary motion neither
 possunt roborari usu, quippe quem (usum) semper habeant
can be strengthened by use, as being that which always they have
 unum que eundem in sano corpore, neque fatigari ullâ exer-
one and the same in the sound body, nor be fatigued by any exer-
 citatione. Cor ipsum validissimus musculus, quotidie micat
cise. The heart itself the most powerful muscle, daily pulsates

centies millies, nihilo magis fatigatum post octoginta
one hundred times a thousand, nothing the more fatigued after eighty
 annos. Vero post vehementem, aut insolitum, aut abnormem motum,
years. But after violent, or unusual, or irregular motion,
 etiam musculi involuntarii motus evadunt quodammodo debiliores;
even the muscles of involuntary motion become in some degree weaker;

vero nunquam habent sensum defatigationis.
but never have a feeling of fatigue.

342. Musculi respirationis, demum, permitti sibi, non
The muscles of respiration, indeed, left to themselves, are not
 defatigantur; recti imperio voluntatis, non secus ac
fatigued; (when) ruled by the control of the will, not otherwise than as

culorum conjunctio, sæpe repetita, ipsa consue-
 tudine, facilior, promptior, et accuratior fit.

340. Si vero motus vehementes, insoliti, diffi-
 ciles, aut diuturni fuerint, tum vires exhauri-
 untur, homo defatigatur. Actiones, quales-
 cunque, exercebat, debiliores, incertæ, et
 tremulæ fiunt; sensus ingratus sui generis,
 deinde dolor, postea rigiditas, artubus laboran-
 tibus accedunt, debilitas et languor universo
 corpori: quæ omnia fortiter suadent requiem
 et somnum. Si nulla laborum intermissio
 intercedat, ingens et universus virium defectus,
 subitaque interdum animi defectio, ultima
 demum mors ipsa, iis finem imponunt.

341. Contra omnino, involuntarii motus musculi,
 neque usu roborari possunt, quippe quem in
 sano corpore unum eundemque semper habeant,
 neque ullâ exercitatione fatigari. Cor ipsum
 validissimus musculus, centies millies quotidie
 micat, post octoginta annos nihilo magis fatis-
 gatum. Post vehementem vero, aut insolitum,
 aut abnormem motum, involuntarii motus mus-
 culi quodammodo debiliores evadunt: nunquam
 vero sensum defatigationis habent.

342. Musculi demum respirationis sibi per-
 mitti non defatigantur; voluntatis imperio
 recti, facile, non secus ac musculi voluntarii
 motus: ita ut ad insolitam actionem diutius

musculi voluntarii motûs, facile (defatigantur); ita ut non valeant
the muscles of voluntary motion, easily; so that they are not
 diutius ad insolitam actionem. Vero sensus defatigationis vix
adequate longer to unusual action. But a feeling of fatigue is scarcely
 percipitur ex iis.
perceived by them.

343. Verum, enimvero, musculi ipsi voluntarii motûs,
But, on the other hand, the muscles themselves of voluntary motion,
 aliquando parent aliis stimulis quoque, etiam in sanissimo homine,
sometimes obey other stimuli also, even in the most healthy person,
 qui vel subito rapiunt hominem, nunc conscium, nunc inscium
which even suddenly hurry the individual, now conscious, now unconscious
 aut nolentem, immani vi, cui nequeat resistere, vel sollicitant,
or unwilling, with impetuous sway, which he cannot resist, or entice,
 invitant mitius et gratius, et ducunt tenui, et sæpe
invite more mildly and agreeably, and lead by a fine, and often
 parum perspecto, filo.
unobserved, thread.

344. Imprimis, affectus animi, ira, gaudium, mœror, metus,
First of all, affections of the mind, anger, joy, grief, fear,
 amor, odium, excitant certos motus in musculis, præsertim vultûs;
love, hatred, excite certain motions in the muscles, especially of the face;
 quo fit ut singuli expriment sese in
whence it happens that each (individually) (they) express themselves in
 ore plus quam Phidiacâ arte. Diurni, et graves, et
the countenance more than in the Phidian art. Lasting, and severe, and
 sæpe repetiti, depinguntur fortius et constantius, difficillimè
often repeated, they are depicted more strongly and permanently, very difficultly
 delendi: hinc sæpe imago iracundiæ, ubi nulla ira
to be blotted out: hence often the appearance of anger, where no anger
 est: ars physiognomonis nititur hoc fundamento. Alii musculi
is: the art of the physiognomist rests on this foundation. Other muscles
 quoque præter (musculos) vultûs cientur in motum eâdem causâ;
also besides (those) of the face are excited into motion by the same cause;
 ita ut homo exprimat multos affectus animi corpore,
so that an individual may express many affections of the mind in his body,
 gestu, voce. Quin et, affectus animi habent latum imperium
gesture, voice. Moreover, affections of the mind exercise a wide control
 in musculos involuntarii motûs; in cor, arterias, secretoria
upon the muscles of involuntary motion; upon the heart, arteries, secreting
 organa, ventriculum, et intestina, et musculos respirationis: unde
organs, stomach, and intestines, and the muscles of respiration: whence

nou valeant. Sensus vero defatigationis vix ex iis percipitur.

343. Verum enimvero, ipsi motus voluntarii musculi, in sanissimo etiam homine, aliis quoque stimulis aliquando parent; qui hominem, nunc conscium, nunc inscium, nunc nolentem, vel subito rapiunt, immani vi, cui resistere nequeat, vel mitius et gratius sollicitant, invitant, et filo tenui, et parum sæpe perspecto, ducunt.

344. Animi imprimis affectus, ira, gaudium, mœror, metus, amor, odium, certos motus in musculis excitant, præsertim vultus; quo fit

ut singuli sese in ore expriment, plus quam Phidiacâ arte. Diurni et graves, et sæpe repetiti, fortius et constantius depinguntur, difficillimè delendi: hinc sæpe iracundiæ imago ubi nulla ira est; hoc fundamento nititur ars physiognomonis. Alii quoque musculi, præter vultus, eadem causa in motum cientur; ita ut homo, corpore, gestu, voce, multos animi affectus exprimat. Quin et in musculos involuntarii motus, animi affectus latum imperium habent; in cor, arterias, organa secretoria, ventriculum et intestina, et respirationis musculos: unde sanguinis motus iuci-

incitator, debilior, abnormis motus sanguinis, secretiones et concoctio a quicker, weaker, irregular motion of the blood, the secretions and digestion cibi vitiatæ, et insolitus modus respirationis. of the food vitiated, and an unusual state of the respiration.

345. Affectus animi recte distinguuntur in excitantes et deprimentes; scilicet, qui vel augent vel minuunt vitales vires. Affections of the mind are rightly distinguished into exciting and depressing; namely, which either increase or diminish the vital powers.

Ira, gaudium, sunt prioris generis; mœror, metus, posterioris: Anger, joy, are of the former kind; grief, fear, of the latter: sunt quoque mixti, et quasi ancipites affectus, referendi there are also mixed, and as it were doubtful passions, to be referred nunc ad unum, nunc rursus ad alterum genus; veluti amor, qui now to the one, now again to the other kind: as love, which excitat vel deprimit animos, prout ipse fuerit prosperus aut elevates or depresses the spirits, according as itself shall be prosperous or infelix. Ingens et subitus terror quoque nonnunquam fungitur vice unfortunate. Great and sudden terror also sometimes performs the part excitantis affectus, et impellit ad rapidos et vehementes motus. of an exciting passion, and impels to rapid and vehement motions.

346. Quin potest esse periculum ex utroque genere; que affectus ipsi animi recensentur non immerito inter causas morborum. But there may be danger from both kind; and the affections themselves of the mind are enumerated not undeservedly amongst the causes of diseases. Qui valde excitant, aliquando extinguunt hominem (They) which greatly excite, sometimes destroy the man suo primo effectu in nervoso genere; aut minus intensi, by their first impression on the nervous system; or (being) less intense, nocent eidem, motu humorum tantum vitiat. Qui hurt the same, by the motion of the fluids only being vitiated. (They) which deprimunt animos, debilitant totum hominem, reddunt minus aptum depress the spirits, debilitate the whole frame, render it less fitted ad omnes functiones vitales, naturales, animales; unde lenta for all the functions (whether) vital, natural, animal; whence lingering valetudo, et morbi sæpe insanabiles. illness, and diseases often incurable.

347. Alia et haud levis causa animalis motûs, curiositas, debet fortasse annumerari hic quoque; scilicet quæ impellit hominem perhaps to be accounted here also; as being that which urges the individual vix opinantem sed semper conscium, ad contemplandas et explorandas scarce thinking but always conscious, to contemplate and investigate

tator, debilior, abnormis, secretiones et concoctio cibi vitiatæ, et insolitus respirationis modus.

345. Affectus animi recte distinguuntur in excitantes et deprimentes: scilicet, qui vires vitales vel augent vel minuunt. Prioris generis sunt ira, gaudium; posterioris, mœror, metus: sunt quoque affectus mixti, et quasi ancipites, nunc ad unum, nunc rursus ad alterum genus, referendi; veluti amor, qui excitat vel deprimit animos, prout ipse prosperus fuerit aut infelix. Ingens quoque et subitus terror excitantis nonnunquam affectus vice fungitur, et ad rapidos et vehementes motus impellit.

346. Quin ex utroque genere periculum esse potest: ipsique animi affectus inter causas morborum non immerito recensentur (61). Qui valde excitant, primo suo in genere nervoso effectu hominem aliquando extinguunt: aut minus intensi, vitiat tantum humorum motu, eidem nocent. Qui deprimunt animos, totum hominem debilitant, ad omnes functiones vitales, naturales, animales, minus aptum reddunt: unde lenta valetudo, et morbi sæpe insanabiles.

347. Curiositas alia, et haud levis motus animalis causa, hic quoque fortasse debet annumerari; scilicet quæ ad res novas, ignotas,

novas ignotas res: est maxima et utilissima infantī,
new (and) unknown objects: it is very great and very useful to the infant,
 quippe quā incitetur ad exercenda sua organa, que discendos
us being that by which it is incited to exercise its organs, and to learn
 usus eorum, et sic discat multa sine magistro melius
the uses of them, and thus it learns many things without a master better
 et certius quam optimus magister docuisset. Præterea,
and more certainly than the best master could have taught. Besides,
 infans ipse, hoc modo, jact fundamenta suæ futura
the infant itself, in this manner, lays the foundations of its future
 scientiæ propriis manibus. Eadem est sæpe minor adulto
knowledge with its own hands. The same is often less (in) the adult
 homini, fere nulla decrepito seni. Natura allicit hominem
man, almost none (in) the decrepit old man. Nature entices man
 certa voluptate, tanquam præmio, ut exerceat
by a certain pleasure, as if by a reward, that he may exercise (to exercise)
 probe sua organa, tum sensus tum motus, quo utraque
well his organs, as well of sensation as of motion, that both
 roborentur et ipse sic discat simul multa
may be strengthened and he himself may thus learn at the same time many things
 quæ intersint sui. Impellitur quoque hoc stimulo, invitatur hoc
which concern him. He is forced also by this stimulus, he is invited by this
 præmio, ad persequendas remotiores res, et quas densa caligo
reward, to pursue more remote objects, and which a thick mist
 tegat, donec tandem hauriat oculis pectoris, multas (res)
covers, until at length he devours with the eyes of his breast, many
 quas Natura negabat humanis visibus.
which Nature denied to human sight.

348. Porro facimus multa, discimus multa, imitatione
Moreover we do many things, we learn many things, by imitation
 solâ. Infans nondum conscius, imitatur quicquid vel videt
alone. The infant not yet conscious, imitates whatever (it) either sees
 vel audit, et adultus vir, et suæ spontis, inscius
or hears, and the adult man, and at his own freewill, unknowing(ly)
 vel forsitan invitatus adhuc tantum imitatur, ut acquirat,
or perhaps involuntar(ily) yet so far imitates, that he acquires,
 quamvis sæpe nolens mores et prolationem sermonis hominum
although often unwilling(ly) the manners and the accent of the men
 cum quibus versatur. Infans discit omnem sermonem imitando,
with whom he associates. An infant learns all language by imitating,

contemplandas et explorandas, hominem vix opinantem, sed conscium semper, impellit: infanti maxima et utilissima est, quippe qua ad organa sua exercenda, eorumque usus discendos, incitetur, et sic multa sine magistro discat, melius et certius quam optimus magister docuisset. Præterea, hoc modo infans ipse propriis manibus futura suæ scientiæ fundamenta jact. Eadem adulto homini sæpe minor, seni decrepito fere nulla est. Allicit Natura hominem certa voluptate, tanquam præmio, ut organa sua, tum sensus tum motus, probe exerceat, quo utraque roborentur, et ipse simul

multa sic discat quæ sui intersint. Hoc quoque stimulo impellitur, hoc præmio invitatur, ad res remotiores, et quas densa caligo tegat, persequendas, donec tandem multas, quas Natura visibus humanis negabat, oculis demum pectoris hauriat.

348. Porro, sola imitatione multa facimus, multa discimus. Imitatur nondum conscius infans quicquid vel videt vel audit; et vir adultus, et suæ spontis, inscius vel forsitan invitatus, tantum adhuc imitatur, ut hominum quibuscum versatur mores, et sermonis prolationem, quamvis sæpe nolens, acquirat. Omnem

aliter, ut persuasum est (impers.) quibusdam philosophis
otherwise, as it has been persuaded to certain philosophers (certain philosophers
 futurus (sit) mutum et turpe pecus.
have imagined) he would become a dumb and base brute.

349. Quoddammodo affinis huic est illa altera subita et vehementior
In a manner allied to this is that other sudden and more violent
 imitatio, quæ, Instar dementiæ, nonnunquam rapuit non
imitation, which, like insanity, sometimes has hurried away not
 tantum singulos homines sed totos populos. Varii affectus animi
only individual men but entire communities. Various affections of the mind
 tristes, læti, ridiculi, dimanant hac, tanquam contagione, per
sorrowful, joyful, ridiculous, flow from this, as if by contagion, through
 pectora omnium, ab vultu uniûs. Ardor pugnæ, et
the breasts of all, from the countenance of one. The ardour of battle, and
 quasi certa fiducia victoriæ, ab alacri vultu
as it were a certain confidence of victory, from the cheerful countenance
 ducis cui milites confidunt, pervadit totam aciem
of a general in whom the soldiers confide, pervades an entire army
 citius dicto, et pariter accendit multa millia pectorum:
quicker than speech, and equally inflames many thousands of breasts:
 vero iidem milites, victoriâ jam parta, percussu
but the same soldiers, the victory already being obtained, struck
 terrore uniûs, vel ignoti hominis, turpiter dederunt
with the terror of one, even an unknown man, have basely turned
 terga, coercendi nullo modo.
their backs, to be restrained in no way.

350. Quin et furor quorundam fanaticorum aliquando
Moreover the enthusiasm of some fanatics sometimes
 diffusus est simili modo; que homines credentes se
has been spread in a similar manner; and men believing themselves
 sanos, qui tempsissent et irrisissent talem insaniam, ipsi facti
sound, who had despised and ridiculed such insanity, themselves have
 sunt participes dementiæ, sole visu et auditu furen-
become partakers of the madness, by the sole seeing and hearing of the
 tium (hominum).
raving (persons.)

351. Est par ratio quarundam affectionum nervosi generis;
There is a similar reason of certain affections of the nervous system;
 oscitationis, hysteriæ, epilepsiæ, quæ sæpe propagantur in
of yawning, of hysteria, of epilepsy, which often are propagated in
 mirum modum, visu solo.
a wonderful manner, by seeing alone.

sermonem infans imitando discit, aliter, ut quibusdam persuasum est philosophis, mutum et turpe pecus futurus.

349. Huic quoddammodo affinis est, altera illa, subita, et vehementior imitatio, quæ dementiæ instar, non singulos tantum homines, sed totos populos nonnunquam rapuit. Hac tanquam contagione, variis animi affectus, tristes, læti, ridiculi, ab unius vultu per omnium pectora dimanant. Ardor pugnæ, et quasi certa fiducia victoriæ, ab alacri ducis cui confidunt milites vultu, totam aciem dicto citius pervadit et multa millia pectorum pariter ac-

cendit: iidem vero milites, victoria jam parta, unius vel ignoti hominis terrore percussu, turpiter terga dederunt, nullo modo coercendi.

350. Quin et fanaticorum quorundam furor simili modo aliquando diffusus est; hominesque se sanos credentes, qui talem insaniam tempsissent et irrisissent, solo visu et auditu furentium, ipsi dementiæ facti sunt participes.

351. Par ratio est affectionum quarundam nervosi generis; oscitationis, hysteriæ, epilepsiæ, quæ solo visu mirum in modum sæpe propagantur.

352. Etiam (affectus) qui vocatur instinctus est causa motus
Also what is called instinct is a cause of a motion
 notabilis in cæteris animalibus, haud levis momenti in homine
remarkable in other animals, of no small moment in man
 ipso. Instructus hoc magistro, hospes novus in terris
himself. Instructed by this master, the stranger new in the earth (lately
 quærit mammam matris, præhendit papillam ore,
arrived) seeks the breast of the mother, seizes the nipple with the mouth,
 et sugit, ope multorum musculorum conspirantium simul;
and sucks, by the aid of many muscles assisting together;
 actio haud ita facile imitanda adulto homini. Novit
an action not so easily to be imitated by the adult man. He knows (how)
 quoque regere binos oculos, ut docet, rectos musculis
also to direct both eyes, as he ought, (though) governed by muscles
 omnino distinctis, que habentibus diversos nervos, et convertere
wholly distinct, and having different nerves, and to turn (them)
 in eandem rem.
upon the same object.

353. Varii appetitus quoque pertinent ad instinctum, quibus homo
Various appetites also belong to instinct, by which man
 impellitur ad reficiendum proprium corpus, que propagandum suum
is impelled to recruit his own body, and propagate his
 genus. Itaque fames, sitis, cupido, excitant motus directos
race (species). Therefore hunger, thirst, desire, excite motions directed
 ad certos fines. Sunt nonnunquam et aliæ definitæ cupiditates,
to certain ends. There are sometimes also other definite desires,
 tam morbosæ quam salutare, pendentes a statu corporis,
as well morbid as salutary, depending upon the state of the body,
 referentes instinctûs, quæ non immerito annumerantur inter
resembling instinct, which not undeservedly are ranked amongst
 appetitus: desideria absorbentium, acescentium herbarum,
the appetites: the desires of absorbing, of acescent (things) of vegetables,
 salutarum carniûm, aromatum et similium rerum.
salted meats, aromatics and the like things.

354. Bene multæ propensiones contingunt tum sano tum
Very many propensities belong as well to the sound as
 morbo corpori, que efficiunt varios motus, non sine homine
to the diseased body, and produce various motions, not without the man
 plerumque conscio; (propensiones) cujusmodi impellunt ad evacuandam
for the most part being conscious; of which sort impel to evacuate
 alvum, reddendam urinam, tussim, sternutationem, oscitationem,
the belly, to void the urine, (to) coughing, sneezing, yawning,

352. Instinctus etiam, qui vocatur, motus causa est, in cæteris animalibus notabilis, in homine ipso haud levis momenti. Hoc magistro instructus, novus in terris hospes mammam matris quærit, papillam ore præhendit, et, ope multorum musculorum simul conspirantium, sugit; actio adulto homini haud ita facile imitanda. Binos quoque oculos, musculis omnino distinctis, diversosque nervos habentibus, rectos, ut docet, regere, et in eandem rem convertere novit.

353. Ad instinctum quoque pertinent appetitus vari, quibus ad proprium corpus reficiendum, genusque suum propagandum, homo im-

pellitur. Fames itaque, sitis, cupido, motus excitant ad certos fines directos. Sunt et aliæ nonnunquam cupiditates definitæ, tam morbosæ quam salutare, a statu corporis pendentes, instinctus referentes, quæ non immerito inter appetitus annumerantur: absorbentium, acescentium, herbarum, carniûm salutarum, aromatum, et similium rerum desideria.

354. Propensiones bene multæ tum sano tum morbo corpori contingunt, variosque, plerumque non sine conscio homine, motus efficiunt: cujusmodi ad alvum evacuandam, urinam reddendam, tussim, sternutationem, oscitationem, artuum extensionem, et vomitum

extensionem artuum, et vomitum. Si propensio fuerit
the extension of the limbs, and vomiting. If the propensity should be
 levior, aliquando utimur imperio voluntatis ad reprimendos naturales
slighter, sometimes we use the control of the will to repress the natural
 motus quos solet excitare. Vero eadem facta gravior
motions which it is accustomed to excite. But the same become more urgent
 nequit impediri quin demum efficiat
it cannot be hindered but that at length it produce (prevented from producing)
 suos motus.
its motions.

355. Multi et miri motus fiunt in corpore ex tot
Many and wonderful motions take place in the body from so many
 variis causis, plures, et sæpe minus intellecti, eo quod partes
various causes, the more, and often not understood, because the parts
 ipsæ intactæ moventur stimulo, qualiscunque is fuerit,
themselves untouched are excited by a stimulus, whatever kind it may have been,
 admoto aliis et remotis partibus. Hoc solet vocari
applied to other and remote parts. This is accustomed to be called
 consensus vel nervosa sympathia: scientia cuius erit imprimis
consent or nervous sympathy: the knowledge of which will be especially
 utilis medico, tum ad dignoscendos tum ad sanandos morbos.
useful to the physician, as well to distinguish as to cure diseases.

356. Totum corpus est una machina, variæ partes que
The whole body is a single machine, the various parts and
 variæ actiones cuius conspirant ad certum finem. Quædam
the various actions of which conspire for a certain purpose. Certain
 partes illius funguntur munere proprio sibi: vero longe plures
parts of it perform a duty peculiar to themselves: but by far the more
 habent functionem communem cum aliis partibus:
(greater number) have a function (in) common with other parts:
 neque possunt certæ partes affici, quin tota machina
nor can certain parts be affected, without that the whole machine
 facta particeps ejusdem affectionis subeat graves mutationes.
rendered a partaker of the same affection undergoes serious changes.
 Hinc iste generalis consensus quo fere omnes partes corporis
Hence that general agreement by which almost all the parts of the body
 reguntur: hinc quoque ille specialis consensus, quo fit
are governed: hence also that special consent, by which it happens
 ut partes quæ funguntur communi munere, invicem afficiant
that the parts which discharge a common duty, in turn may affect
 semet, reliquo corpore parum vel nihil mutato.
themselves, the rest of the body being little or not at all changed.

impellant. Si levior fuerit propensio voluntatis imperio aliquando utimur, ad motus naturales, quos excitare solet, reprimendos. Eadem vero gravior facta, impediri nequit quia suos demum motus efficiat.

355. Multi et miri ex tot variis causis in corpore motus fiunt, eo plures, et sæpe minus intellecti, eo quod partes ipsæ intactæ moventur stimulo, qualiscunque is fuerit, aliis et remotis partibus admoto. Hoc, consensus, vel *sympathia nervosa*, vocari solet: cuius scientia, medico, tum ad dignoscendos tum ad sanandos morbos, imprimis utilis erit.

356. Totum corpus una machina est, cujus variæ partes, variæque actiones, ad certum finem conspirant. Partes quædam illius munere sibi proprio funguntur: longe vero plures communem cum aliis partibus functionem habent: neque certæ partes affici possunt, quin tota machina ejusdem affectionis subeat graves mutationes. Hinc consensus iste generalis, quo omnes fere corporis partes reguntur; hinc quoque consensus ille specialis, quo fit ut partes quæ communi munere funguntur, semet invicem afficiant, reliquo corpore parum vel nihil mutato.

357. Generalis consensus observatur inter cerebrum et totum
A general consent is observed between the brain and the whole
nervosum genus, que ideo inter cerebrum et universum corpus,
nervous system, and consequently between the brain and the entire body,
 quod profecto nil mirum, quippe cuius omnis vis
which truly (is) not at all wonderful, as being that of which all the power
 derivetur a cerebro. Porro consensus vix minus generalis
is derived from the brain. Moreover a consent scarcely less general
 intercedit inter ventriculum et totum nervosum genus; quin et
subsists between the stomach and the whole nervous system; moreover
 cutis ipsa, reticulata membrana, probe instructa vasis que
the skin itself, the cellular membrane, well furnished with vessels and
 nervis, habet tantum consensum cum reliquis partibus corporis,
nerves, has so great a sympathy with the remaining parts of the body,
 ut admodum parva pars ejus, affectâ certâ ratione, afficiat
that a very small part of it, being affected in a certain way, may affect
 totam, et inducat miras mutationes et in remotis partibus
the whole, and may induce wonderful changes both in remote parts
 corporis, ventriculo, renibus, et universo nervoso genere.
of the body, the stomach, kidneys, and the whole nervous system.

358. Sunt multa exempla specialis consensûs, (nempe,) inter
There are many examples of special consent, (for example,) between
 binos oculos, inter retinam et muscolum pupillæ ejusdem
the two eyes, between the retina and the muscle of the pupil of the same
 oculi, inter uterum et mammas, inter pulmonem et transversum
eye, between the uterus and mammæ, between the lungs and transverse
 septum, inter fauces et ventriculum, inter varias partes
septum, between the fauces and stomach, between the various portions
 intestinorum, inter ventriculum, vel intestinum rectum, et musculos
of the intestines, between the stomach, or intestinum rectum, and the muscles
 abdominis et transversum septum.
of the abdomen and the transverse septum.

359. Quidam consensus sunt naturales, quidam morbosî: scilicet, alii
Some consents are natural, some diseased: that is, some
 observantur in sano corpore, conducentes vel plane necessarii ad
are observed in the healthy body, conducing or absolutely necessary to
 munera vitæ et sanitatis; alii non ostendunt se,
the functions of life and health; others do not shew themselves,
 nisi morbo jam existente, que sunt signum et pars ejus.
except disease already existing, and are a sign and part of it.
 (Consensus) hujusmodi observantur inter renem et ventriculum,
(Consents) of the latter sort are observed between the kidney and stomach,

357. Generalis consensus observatur inter cerebrum et totum *genus nervosum*, ideoque inter cerebrum et universum corpus: quod profecto nil mirum, quippe cuius vis omnis a cerebro derivetur. Porro consensus vix minus generalis intercedit inter ventriculum et totum *genus nervosum*; quin et cutis ipsa, membrana reticulata, vasisque probe instructa, tantum consensum cum reliquis partibus corporis habet, ut parva admodum ejus pars, certa ratione affecta, totam afficiat, et in remotis corporis partibus, ventriculo, renibus, et universo *genere nervoso*, miras mutationes inducat.

358. Specialis consensus multa exempla sunt,

inter binos oculos, inter *retinam* et muscolum pupillæ ejusdem oculi, inter uterum et mammas, inter pulmonem et septum transversum, inter fauces et ventriculum, inter varias partes intestinorum, inter ventriculum vel intestinum rectum et musculos abdominis et septum transversum.

359. Consensus quidam naturales, quidam morbosî sunt: scilicet, alii in sano corpore observantur, ad vitæ et sanitatis munera conducentes, vel plane necessarii; alii non nisi morbo jam existente se ostendunt, ejusque signum et pars sunt. Hujusmodi inter renem et ventriculum, nares vel asperam arteriam et

nāres vel asperam arteriam et transversum septum, pedes et
of the nostrils or aspera arteria and transverse septum, the feet and
ventriculum, in calculo, podagrā, hysteria, gravedine.
stomach, in calculus, gout, hysteria, stuffing of the head.

360. Postremo, nonnulli consensus nunquam observandi in sanitate,
Lastly, some consents never to be observed in health,
etiam insoliti in morbis, observati sunt in quibusdam exemplis
even unusual in diseases, have been observed in some examples
morborum; veluti trismus a vulnere, quamvis fortasse levissimo;
of diseases; as locked-jaw from a wound, although perhaps very slight;
vel alii rarissimi, veluti dolor et calor plantarum pedum ab
or others very rare, as pain and heat of the soles of the feet from
ulcere in vesicā; vel immanis, et tandem lethalis, dolor
an ulcer in the bladder; or a dreadful, and at length fatal, pain
brachii inter reddendam urinam.
of the arm whilst voiding the urine.

361. Ratio harum rerum satis obscura; neque plena
The cause of these things (is) sufficiently obscure; nor (has) a full
explicatio data est hactenus. Tamen juvat monuisse
explanation been given hitherto. However it benefits to have admonished
plerosque consensus, tum generales tum speciales, pendere a
that most sympathies, as well general as also special, depend upon
nexu quem omnes partes corporis habent cum cerebro:
the connexion which all parts of the body have with the brain:
que id affectum certā ratione certo stimulo (ubicunque
and that it affected in a certain manner by a certain stimulus (wheresoever
is (stimulus) demum admotus fuerit,) vel mutare statum
it indeed shall be applied,) either changes the state
universi generis, vel incitare quasdam partes præ
of the whole nervous system, or incites certain parts before
cæteris ad motum. Enim nervo alterutrius partium quæ
others to motion. For the nerve of one or other of the parts which
consentiunt, secto, vel compresso, vel obstructo, vel læso quovis
consent, being cut, or compressed, or obstructed, or injured in any
modo, vel demum cerebro ipso multum læso, est nullus
manner, or indeed the brain itself much injured, there is no
consensus; quamvis partes ipsæ, ad contactum stimuli,
sympathy; although the parts themselves, on the application of a stimulus,
ostenderent se non amisisse suam moventem vim.
might shew that they had not lost their own moving power (irritability).

362. Vero alii consensus utriusque generis oriuntur a vicinitate
But some sympathies of both kind arise from the contiguity

septum transversum, pedes et ventriculum, in calculo, podagra, hysteria, gravedine, observantur.

360. Postremo, nonnulli consensus in sanitate nunquam observandi, etiam in morbis insoliti, in quibusdam morborum exemplis observati sunt; veluti trismus a vulnere, quamvis fortasse levissimo; vel alii rarissimi, veluti dolor et calor plantarum pedum ab ulcere in vesica; vel dolor brachii immanis, et tandem lethalis, inter urinam reddendam.

361. Ratio harum rerum satis obscura; neque plena explicatio hactenus data est. Juvat tamen monuisse plerosque consensus, tum gene-

rales tum speciales, pendere a nexu, quem omnes corporis partes cum cerebro habent: idque certa ratione certo stimulo (ubicunque is demum admotus fuerit) affectum, vel statum universi generis nervosi mutare, vel quasdam præ cæteris partes ad motum incitare. Secto enim, vel compresso, vel obstructo, vel quovis modo læso, nervo alterutrius partium quæ consentiunt, vel demum, læso multum ipso cerebro, consensus nullus est; quamvis partes ipsæ ad contactum stimuli se vim suam moventem non amisisse ostenderent.

362. Alii vero consensus, utriusque generis, a vicinitate partium, vasorum sanguinem ve-

partium, conjunctione vasorum vehentium sanguinem, nexu nervorum, of parts, the inosculation of the vessels carrying blood, the connexion of nerves, reticulatâ membranâ extensâ ab aliâ ad aliam (partem); veluti the reticulated membrane extended from one to the other; as totiûs cutis, tunicæ adnatæ cum retina et aliis internis of the whole skin, of the tunica adnata with the retina and other internal partibus oculi; intestini recti cum vesicâ et utero; parts of the eye; of the intestinum rectum, with the bladder and uterus; vesicæ, cum ostio urethræ: tamen, fatendum est, of the bladder, with the orifice of the urethra: however, it must be confessed, consensus, qui observantur inter partes quæ longe distant, that the sympathies, which are observed between parts which are far distant, rarissime accepisse explicationem hoc modo; que multos very seldom have admitted of explanation in this manner: and that many perdidisse operam qui laboraverant, haud mediocri industriâ et acumine, ut detegerent vel minutissimas conjunctiones arteriarum aut nervorum consentientium partium. nerves of the sympathising parts.

363. Quidam insoliti morbosi consensus videntur oriri a parte Some unusual diseased sympathies seem to arise from the part jam præter solitum sentiente, et mobili et debili, que being already unusually sensitive, also irritable and weak, and ideo patiente plus æquo ab statu, vitiis, irritamentis consequently suffering more than proper from the state, disorders, excitements allarum partium. Hæc videtur esse ratio cur multi morbi provenientes of other parts. This seems to be the reason why many diseases proceeding a generali causâ, facilius incumbant in partes jam debiles aut from a general cause, more easily fall upon parts already weak or morbidas. diseased.

364. Denique, plurimi motus excitantur in corpore, tum sano, Finally, very many motions are excited in the body, as well when sound, sed multo magis si fuerit morbidum, qui sæpe, præter spem, but much more if it should be diseased, which often, beyond expectation, summovent multa incommoda, multa pericula, multa mala, jam urgentia, remove many inconveniences, many dangers, many evils, now pressing, vel arcent vel depellunt morbos, et sic diu præstant either keep off or drive away diseases, and thus for a long time præstant totam machinam incolumem. the entire machine safe.

hentium conjunctione, nervorum nexu, membrana reticulata ab alia ad aliam extensa, oriuntur; veluti totiûs cutis, tunicæ adnatæ cum retina et aliis partibus internis oculi; intestini recti cum vesica et utero, vesicæ cum ostio urethræ: fatendum tamen est, consensus, qui inter partes quæ longe distant observantur, rarissime hoc modo explicationem accepisse; multosque operam perdidisse, qui industria et acumine haud mediocri laboraverant, ut conjunctiones vel minutissimas, arteriarum, aut nervorum partium consentientium, detegerent.

363. Consensus quidam, insoliti, morbosi,

oriri videntur a parte jam præter solitum sentiente, et mobili, et debili, ideoque ab aliarum partium statu, vitiis, irritamentis, plus æquo patiente. Hæc videtur esse ratio, cur multi morbi a causa generali provenientes, in partes jam debiles aut morbidas facilius incumbant.

364. Plurimi denique motus in corpore, tum sano, sed multo magis si morbidum fuerit, excitantur; qui sæpe præter spem multa incommoda, multa pericula, multa mala jam urgentia, summovent, morbos vel arcent vel depellunt, et sic totam machinam diu incolumem præstant (65, et seq.)

365. Lis est adhuc sub iudice de
The cause is still before the judge (the question is undecided) concerning
 naturâ et potestatibus hujus autocrateiæ: nimirum, sive isti
the nature and powers of this autocrateia: namely, whether those
 salutes motus sint referendi ad generales leges animalis motus
salutary motions ought to be referred to the general laws of animal motion
 sive animalis machina ipsa, habeat specialem et definitam vim
or the animal machine itself, may possess a specific and definite power
 curandi ipsa ne capiat quid detrimenti, que excitandi
of providing that itself do not take any thing of detriment, and of exciting
 motus quales oporteat ad hunc finem.
motions such as it may behove for this purpose.

366. Est certissimum multas res, natura quarum est sopire
It is very certain that many things, the nature of which is to lull
 et compescere motus, aliquando excitare motus validissimos, et quam
and restrain motions, sometimes excite motions the most powerful, and most
 maxime salubres. Neque, tamen, hoc adimit litem; quoniam,
healthy possible. Nor, however, does this take away the dispute; because,
 secundum communes leges animalis motus, quas habemus satis
according to the common laws of animal motion, which we have sufficiently
 perspectas, plurimæ causæ istiusmodi possint dare satis validum
perceived, very many causes of that kind may produce a sufficiently powerful
 stimulum variis modis, secundum varias condiciones corporis,
stimulus in various ways, according to the various conditions of the body,
 que diversas partes quæ afficiuntur. Debilitas ipsa sæpe facit hoc,
and the different parts which are affected. Debility itself often does this,
 et fere quicquid impedit solitas actiones organorum.
and commonly whatever impedes the usual actions of the organs.

367. Medici non defuerunt nec parvi nominis, qui retulerint
Physicians have not been wanting nor of little reputation, who have referred
 omnes motus hujusmodi ad mentem ipsam, judicantem quid periculi
all motions of this sort to the mind itself, judging what (of) danger
 instaret, et quomodo esset summovendum, et igitur
was impending, and in what manner it was to be removed, and therefore
 excitantem tales motus quales crederet aptissimos ad eum finem.
exciting such motions as it believed most fitted to that end.

368. Nemo qui contemplatur Naturam erit tam excors, qui negaverit
No one who observes Nature will be so foolish, who will deny
 multos motus quos sæpe excitat esse saluberrimos, et
(as to deny) that many motions which she often excites are very salutary, and
 igitur imitandos et promovendos, quantum possit fieri, medicis:
therefore to be imitated and promoted, as far as can be done, by physicians:

365. Adhuc sub iudice lis est de natura et potestatibus hujus autocrateiæ: nimirum, sive ad leges motus animalis generales referendi sint motus isti salutes, sive ipsa machina animalis vim habeat specialem et definitam, curandi, ne quid ipsa detrimenti capiat, motusque excitandi quales ad hunc finem oporteat.

366. Certissimum est, multas res, quarum natura est motus sopire et compescere, motus aliquando validissimos, et quam maxime salubres, excitare. Neque tamen hoc litem adimit; quoniam, secundum leges communes motus animalis, quas satis perspectas habemus, plurimæ istiusmodi causæ, variis modis secundum

varias corporis condiciones, diversasque partes quæ afficiuntur, stimulum satis validum dare possint. Ipsa debilitas hoc sæpe facit, et quicquid fere solitas organorum actiones impedit.

367. Non defuerunt medici, nec parvi nominis, qui omnes hujusmodi motus ad mentem ipsam retulerint, judicantem, quid periculi instaret, et quomodo summovendum esset; et igitur tales motus excitantem, quales crederet ad eum finem aptissimos.

368. Nemo qui Naturam contemplatur tam excors erit, qui negaverit, multos quos sæpe excitat motus saluberrimos esse, et medicis igitur quantum fieri possit imitandos et pro-

nec verum quisquam, qui vult fidere propriis oculis, (qui non nor yet (is there) any one, who wishes to trust his own eyes, who will not viderit bene multos alios eorum esse inutiles, nimios, noxios, see that a great many others of them are useless, excessive, hurtful, et ideo sapiendos, compescendos, temperandos medicis, ut and therefore to be lulled, restrained, moderated by physicians, that surripiant ægrum duplici periculo. Quod si omnes isti motus they may rescue the sick from a double danger. But if all these motions essent instituti, ut quidam revera sunt, summo consilio et were instituted, as some truly have been, with the greatest judgment and sapientiâ, debuissent non magis eo referri ad wisdom, they ought not the more, on that account, to be referred to actionem mentis; nimirum qui pendeant nullo modo a mente; the action of the mind; as being what can depend in no manner upon the mind; quorum mens plerumque sit non conscia; quos nequeat excitare of which the mind generally is not conscious; which it cannot excite suâ sponte, neque aut impedire, aut temperare excitatos ab of its own accord, nor either prevent, or moderate (when) excited by aliâ causâ; qui denique perficiuntur in stolidissimo hominum, any other cause; which indeed are performed in the most foolish of men, conscio neque vitii neque remedii quod adhibetur, aut in conscious neither of the disorder nor of the remedy which is administered, or in belluâ, pariter ac in sagacissimo et peritissimo philosopho aut the brute, equally as in the most sagacious and skilful philosopher or medico. Medici discant interea quid boni sit physician. Let physicians learn in the mean time what (of) advantage may be sperandum, quid mali metuendum, a viribus quæ habent tam to be expected, what evil to be feared, from powers which have so latum imperium in corpus; est non dubitandum quin dies extended an influence upon the body; it is not to be doubted but that time ocyus serius attulerit lumen rationi, quamvis hactenus sooner (or) later will bring (throw) light to (upon) the means, although hitherto obscuræ, quæ fiunt. obscure, by which they come to pass.

369. Omnes motus qui strictius vocantur animales, nempe, All the motions which more strictly are called the animal, for instance, quotquot pendent a voluntate, et ipsi naturales et vitales, in as many as depend upon the will, also those natural and vital, over quos habemus divisum imperium, reguntur in mirum which we have a divided (partial) control, are governed in a wonderful in modum consuetudine. Vis, velocitas, ordo, tempus, reditus, manner by habit. Their force, velocity, arrangement, time, return,

movendos: verum nec quisquam, qui propriis oculis vult fidere, non viderit alios eorum bene multos, inutiles, nimios, noxios esse, et medicis ideo sapiendos, compescendos, temperandos, ut ægrum duplici periculo surripiant. Quod si omnes isti motus, ut quidam revera sunt, summo consilio, et sapientia instituti essent, non eo magis ad mentis actionem referri debuissent: nimirum, qui nullo modo a mente pendeant: quorum plerumque mens non conscia sit; quos sua sponte excitare nequeat; neque ab alia causa excitatos, aut impedire aut temperare; qui denique in stolidissimo hominum,

aut in bellua, neque vitii neque remedii quod adhibetur conscio, pariter ac in sagacissimo et peritissimo philosopho aut medico perficiuntur. Discant interea medici, quid boni sperandum sit, quid mali metuendum, a viribus quæ tam latum imperium in corpus habent: rationi quæ fiunt, quamvis hactenus obscuræ, non est dubitandum, quin serius ocyus dies lumen attulerit. 369. Omnes motus qui strictius animales vocantur, nempe, quotquot a voluntate pendent, et ipsi naturales et vitales in quos divisum imperium habemus, mirum in modum reguntur consuetudine. Vis, velocitas, ordo, tempus,

sensus (eorum), potissimum pendent ab hac. Motus, primo difficiles, feeling, chiefly depend upon it. Motions, at first difficult, nec perficiendi sine gravi sensu, et penitus voluntarii, nor to be performed without a troublesome feeling, and wholly voluntary, sæpe repetiti, fiunt promptiores et faciliores; et tandem peraguntur, often repeated, become more ready and more easy; and at length are performed, homine fere inscio, hoc est, non attendente. Permissi sibi, the man almost not knowing, that is, not attending. Left to themselves, perficiuntur certo et solito ordine: aliquando etiam nequeunt perfici alieno aut novo ordine. Musculi motus cannot be performed in a different or new order. The muscles of motion adipiscuntur majorem vim et velocitatem usu, propter rationes acquire a greater force and velocity by use, on account of the causes memoratas. Quidam stimuli, que motus pendent ab illis, qui mentioned. Certain stimuli, and the motions depending upon them, which solebant redire incertis intervallis, reducuntur ad certa were accustomed to return at uncertain intervals, are reduced to certain tempora consuetudine; veluti appetitus cibi, propensio ad evacuandam times by habit; as the appetite for food, the propensity to evacuate alvum, et reddendam urinam, et similia. Quin et novi appetitus the belly, and to void the urine, and the like. Moreover new appetites sæpe discuntur consuetudine, haud dediscendi ita facile: veluti (ap- often are learned by habit, not to be unlearned so easily: as petitus) vini, theæ, coffeæ, nicotiaræ, et multarum rerum, quas, for wine, tea, coffee, tobacco, and many things, which, tantum abesset ut appeteremus naturâ ut primo so far was it from that we desired by nature (naturally), that at first fuissent ingratae, et vix tolerabiles. Ratio est par quod they were disagreeable, and scarcely tolerable. The reason is similar that multi stimuli, validiores quam quos Natura fecit necesarios, post many stimuli, stronger than (those) which Nature made necessary, after longam consuetudinem, fiant necessarii. Hinc factum est, ut long habituation, may become necessary. Hence it has been made, that homo, si cupiat, habeat potestatem mutandi seipsum plurimum, et man, if he wish, has the power of changing himself very much, and quasi fabricandi denuo; res haud mediocris utilitatis facien- as it were of fabricating (himself) anew; a thing of no trifling utility to those tibus medicinam, ad corrigenda quædam vitia constitutionis, et practising medicine, for correcting certain disorders of the constitution, and præcavendos multos morbos; dummodo cautum fuerit (impers.) (ut) for preventing many diseases; provided they (shall) be cautious that

reditus, sensus, ab hac potissimum pendent. Motus primo difficiles, nec sine gravi sensu perficiendi, et penitus voluntarii, sæpe repetiti, promptiores et faciliores fiunt; et tandem, inscio fere homine, hoc est, non attendente, peraguntur. Sibi permissi, certo et solito ordine perficiuntur: aliquando etiam alieno aut novo ordine perfici nequeunt. Majorem vim et velocitatem motus musculi adipiscuntur usu, propter rationes (338, 339) memoratas. Quidam stimuli, motusque ab illis pendent, qui incertis intervallis redire solebant, consuetudine ad certa tempora reducuntur; veluti cibi appe- titus, propensio ad alvum evacuandam et urinam reddendam, et similia. Quin et novi appetitus consuetudine sæpe discuntur, haud ita facile dediscendi: veluti vini, theæ, coffeæ, nicotianæ, et multarum rerum, quas tantum abesset, ut natura appeteremus, ut primo ingratae et vix tolerabiles fuissent. Par ratio est, quod multi stimuli, validiores quam quos Natura necesarios fecit, post longam consuetudinem, necessarii fiunt. Hinc factum est, ut homo seipsum, si cupiat, plurimum mutandi, et quasi denuo fabricandi, potestatem habeat: res medicinam facientibus haud mediocris uti-

mutatio, quam cupiunt et tentant efficere, lente et
the change, which they wish and are trying to produce, be slowly and
 prudenter inducatur.
carefully induced.

CAP. XII.

CHAP. XII.

De vitiiis motûs musculorum; nimîâ mobilitate, torpore,
 Of the disorders of the motion of the muscles; too great irritability, torpor,
paralysi, spasm.
 palsy, spasm.

370. Illæ vires, unde motus musculorum fit, sunt obnoxîæ
Those powers, from whence motion of the muscles arises, are liable
 multis vitiiis, magis dignis attentione eo quod plerique morbi
to many disorders, the more worthy attention because most (of) the diseases
 corporis pendent ex his; quatenus aliquid motus musculorum
of the body depend on them; inasmuch as something of the motion of muscles
 requiratur ad omnes functiones vivi animalis.
is required to all the functions of the living animal.

371. Mobilitas ipsa potest esse nimia. Probe distinguendum est
The irritability itself may be excessive. We must carefully distinguish
 inter hanc et vigorem. Mobilitas est facilitas quâ fibræ
between this and vigour. Irritability is the facility with which the fibres
 musculorum cientur ad contractionem: vigor, contra, est
of the muscles are excited to contraction. vigour, on the other hand, is
 vis quâ contractio ipsarum perficitur. Hæc vitia
the power with which the contraction of them is performed. These disorders
 nonnunquam observantur juncta, sæpius adversa, que fere
sometimes are observed combined, more often opposed, and commonly
 agnoscunt contrarias causas.
acknowledge contrary causes.

372. Mobilitas est nimia, si quando motus excitantur, vel a
Irritability is excessive, if at any time motions are excited, either by
 stimulo leviore justo, vel nimîi motus a solito stimulo;
a stimulus slighter than proper, or excessive motions by the usual stimulus;
 quod si acciderit, motus quoque solent esse abnormes.
which if it should happen, the motions also are accustomed to be irregular.

litis, ad vitia quædam constitutionis corrigenda, et multos morbos præcavendos; dummodo cautum fuerit mutatio, quam cupiunt, et efficere tentant, lente et prudenter inducatur.

CAP. XII.—*De vitiiis motus musculorum: mobilitate nimia, torpore, paralysi, spasm.*

370. Vires illæ (304 et seq.) unde motus musculorum fit multis vitiiis obnoxîæ sunt, eo magis attentione dignis, quod ex his plerique corporis morbi pendent; quatenus ad omnes functiones vivi animalis aliquid motus musculorum requiratur.

371. Mobilitas ipsa nimia esse potest. Probe distinguendum est hæc inter et vigorem. Mobilitas est facilitas qua fibræ musculorum ad contractionem cientur: vigor, contra est vis qua ipsarum contractio perficitur. Nonnunquam juncta, sæpius adversa, hæc vitia observantur, contrariasque fere agnoscunt causas.

372. Mobilitas nimia est, si quando vel a stimulo justo leviore motus excitantur, vel motus nimii a solito stimulo; quod si acciderit, motus quoque abnormes esse solent.

373. Certum corporis temperamentum aliquando hæreditarium, homines huic vitio op-

373. Certum temperamentum corporis, aliquando hæreditarium, reddit
A certain temperament of body, sometimes hereditary, renders
 homines opportunos huic vitio. Fæminæ sunt plus mobiles quam
men subject to this disorder. Women are more irritable than
 viri. Prima ætas valde mobilis, sæpe nimis, juvenus minus
men. The first age (is) very irritable, often too much so, youth less
 quam infantia, plus quam virilis ætas; senectus sæpe vix
than infancy, more than virile age; old age often scarcely
 satis. Otiosum sedentarium genus vitæ, plenus opiparus victus,
sufficiently so. An idle sedentary kind of life, a full sumptuous diet,
 solitæ excretiones suppressæ, plenitudo vasorum quæ vehunt
the usual excretions suppressed, fulness of the vessels which carry
 sanguinem, nonnunquam subita exinanitio eorundem, laxitas seu
blood, sometimes the sudden emptying of the same, laxity or
 flacciditas solidarum partium; vero aliquando nimia tensio moventium
flaccidity of the solid parts; but sometimes to great tension of the moving
 fibrarum, usus diluentium, præsertim tepidorum, calor, quomodocunque
fibres, the use of diluents, especially tepid, heat, in whatsoever way
 fuerit admotus, acutior sensus, dant nimiam mobilitatem.
it (shall) be applied, too acute sensibility, produce excessive irritability.

374. Potest esse vel generalis vel specialis, prout causæ ejus
It may be either general or special, according as the causes of it
 admotæ fuerint, vel cuidam parti vel universo corpori.
shall be applied, either to any part or to the whole body.

375. Generalis vigor est raro morbosus: tamen, nimius vigor
General vigour is seldom morbid: however, excessive vigour
 quarundam musculosarum partium præ aliis nonnunquam observatus est.
of some muscular parts before others sometimes has been observed.

Ingens vis omnium musculorum, præsertim qui parent voluntati,
Great power of all the muscles, especially (of those) which obey the will,
 spectatur in captis mente, in phreniticis, et habetur, non
is observed in the insane, in phrenitics, and is considered, not
 immerito, morbida. Ratio tanti excessus videtur satis obscura;
undeservedly, morbid. The cause of so great an excess seems sufficiently obscure;
 qui tamen est plane referendus ad statum cerebri habentis
which notwithstanding is evidently to be referred to the state of the brain having
 se male.
itself badly.

376. Frequentior excessus vigoris, et majoris momenti, observatur
A more frequent excess of vigour, and of greater consequence, is observed
 in fibris musculorum qui non agnoscunt imperium voluntatis
in the fibres of the muscles which do not acknowledge the controul of the will.

portunos reddit. Fæminæ plus quam viri mobiles sunt. Prima ætas valde mobilis, sæpe nimis; juvenus minus quam infantia, plus quam virilis ætas. Senectus sæpe vix satis. Vitæ genus otiosum, sedentarium, victus plenus, opiparus, excretiones solitæ suppressæ, plenitudo vasorum quæ sanguinem vehunt, nonnunquam subita exinanitio eorundem, laxitas seu flacciditas solidarum partium; aliquando vero tensio nimia fibrarum moventium, usus diluentium, præsertim tepidorum, calor, quomodocunque admotus fuerit, sensus acutior, nimiam mobilitatem dant.

374. Potest esse vel generalis vel specialis,

prout causæ ejus vel parti cuidam vel universo corpori admotæ fuerint.

375. Vigor generalis raro morbosus est: nimius tamen quarundam partium musculosarum, præ aliis, vigor, nonnunquam observatus est. In mente captis, in phreniticis, ingens vis omnium musculorum, præsertim qui voluntati parent, spectatur, et non immerito morbida habetur. Ratio tanti excessus satis obscura videtur; qui tamen ad statum cerebri male se habentis plane referendus est.

376. Frequentior, et majoris momenti, vigoris excessus, observatur in fibris musculorum qui voluntatis imperium non agnoscunt, præsertim

præsertim in iis qui movent sanguinem. Circuitus hujus sæpe especially in those which move the blood. The circulation of this often intenditur præter solitum, non sine gravi incommodo aut is increased beyond what is usual, not without serious inconvenience or periculo valetudinis et vitæ. Levior excessus hujusmodi, pervadens danger to health and life. A slighter excess of this kind, pervading totum corpus, reddit homines opportunos morbis habentibus the whole body, renders men liable to diseases having inflammationem, et solet vocari apud medicos inflammation (inflammatory,) and is accustomed to be called by physicians phlogistica diathesis: autem cernitur gravior, et singularis the phlogistic diathesis: but it is observed more severe, and of a particular partis in inflammatione ipsâ. part (local) in inflammation itself.

377. Nimius vigor musculosarum fibrarum potest oriri vel a Excessive vigour of the muscular fibres may arise either from nervosâ vi aucta præter modum, veluti in insanîâ, the nervous power being increased beyond bounds, as in insanity, phrenitide, aut vehemente affectu animi; vel a nimîâ tensione phrenitis, or a violent affection of the mind; or from excessive tension fibrarum, quâ facilius et vehementius concipiant motus, of the fibres, by which they more easily and vehemently take on motions, veluti distentione arteriarum a magnâ plenitudine vasorum, as in distention of the arteries from great fulness of the vessels, propter abundantiam sanguinis, vel fortasse a frigore, vel on account of an abundance of blood, or perhaps from cold, or calore excipiente frigus, ut solet accidere verno tempore; vel, heat succeeding cold, as is used to happen in spring time; or, denique, nervosâ vi et tensione fibrarum nil mutatis, lastly, the nervous power and tension of the fibres being no way changed, actio earundem erit nimia, a stimulo vehementiore the action of the same will be excessive, from a stimulus more vehement than usual admoto, vel a solito stimulo, si fibræ themselves (shall) have already become too irritable.

378. Hinc effectus pariter boni que mali multarum rerum intelli- Hence the effects alike good and bad of many things are understood, et actio multorum remediorum, quibus utimur, ad derstood, and the action of many remedies, which we use, for incitandum, temperandum, dirigendum vim et motum moventium inciting, moderating, directing the force and motion of the moving

in iis qui sanguinem movent. Hujus circuitus sæpe præter solitum intenditur, non sine gravi valetudinis et vitæ incommodo aut periculo. Levior hujusmodi excessus, totum corpus pervadens, homines morbis inflammationem habentibus opportunos reddit, et diathesis phlogistica apud medicos vocari solet: gravior autem, et partis singularis, in ipsa inflammatione cernitur.

377. Nimius vigor fibrarum musculosarum oriri potest, vel a vi nervosa (326) præter modum aucta, veluti in insanîâ, phrenitide, aut vehemente animi affectu; vel a nimia fibrarum tensione (320-4) qua facilius et vehementius

motus concipiant, veluti arteriarum distentione a magna plenitudine vasorum propter sanguinis abundantiam, vel fortasse a frigore vel calore frigus excipiente, ut tempore verno solet accidere; vel, denique, vi nervosa et tensione fibrarum nil mutatis, actio earundem nimia erit, a stimulo (305) solito vehementiore admoto, vel a solito stimulo, si fibræ ipsæ jam nimis mobiles (371 et seq.) factæ fuerint.

378. Hinc intelliguntur effectus multarum rerum boni malique pariter, et actio multorum remediorum, quibus utimur, ad vim et motum fibrarum moventium incitandum, temperandum, dirigendum; veluti diætæ tenuis vel

fibrarum, veluti tenuis vel lautæ diætæ, vini, opii, stimulantium,
fibres, as of a poor or rich diet, of wine, opium, stimulants,
 et quorundam evacuantium (remediorum).
and of certain evacuants.

379. Vitia contraria nimie mobilitati, sunt torpor, nimio
The disorders opposed to too great irritability, are torpor, to excessive
 vigori, debilitas. Torpor est imminuta mobilitas, neque sufficiens
vigour, debility. Torpor is a diminished irritability, nor sufficing
 ad exercenda bene munera vitæ. Agnoscit causas contrarias
for exercising well the functions of life. It acknowledges causes contrary
 ac nimia mobilitas; imprimis duriorem, rigidiorem, vel
(to those) as excessive irritability; first of all a harder, more rigid, or
 aliquando laxam, flaccidam conditionem solidarum partium, provec-
sometimes a lax, flaccid condition of the solid parts, advanced
 etatem, peculiare phlegmaticum, frigidum, parum sentiens temperamentum,
age, a peculiar phlegmatic, cold, not sensitive temperament,
 nimium perpetuum laborem, frigus, tenuem victum, exhaustum corpus.
excessive constant labour, cold, thin diet, exhausted body.
 Malum magis metuendum, et difficilius sanatu, eo quod
An evil the more to be feared, and the more difficult to be cured, because
 solitis viribus naturæ deficientibus, neque corpus ipsum conetur
the usual powers of nature failing, neither does the body itself endeavour
 quicquam, neque remedia, alioquin efficacissima, juvent multum.
any thing, nor do remedies, otherwise very efficacious, assist much.

380. Vitium vocatur debilitas, sive infirmitas, si quando
The disease is called debility, or weakness, if at any time
 motus musculorum, sive (sit) id genus quod est a
the motion of the muscles, whether it be that kind which is from
 voluntate, sive alterum, quod est invitum, non perficitur justâ
the will, or that other, which is involuntary, is not performed with due
 vi. Major vel minor, generalis vel singularis partis, comitatur
power. A greater or less, general or of a particular part, accompanies
 fere omnes morbos, neque est minima pars eorum. Quoque
almost all diseases, nor is it the least part of them. It also
 reddit corpus obnoxium innumeris morbis, et objicit quasi
renders the body liable to innumerable diseases, and exposes it as it were
 inerme. Sæpe pendet a primâ et congenitâ fabricatione
unarmed. It often depends upon the original and congenital structure
 corporis, penitus corrigenda nullis remediis, nullo genere
of the body, to be thoroughly corrected by no remedies, by no kind
 vitæ. Varia vis et robur quoque contingunt variis
of life. A various power and strength also belong to the various

lautæ, vini, opii, stimulantium, et quorundam
 evacuantium.

379. Mobilitati nimie torpor, vigori nimio
 debilitas, contraria vitia sunt. Torpor est im-
 minuta mobilitas, neque ad vitæ munera bene
 exercenda sufficiens. Contrarias ac nimia mo-
 bilitas agnoscit causas; solidarum imprimis
 partium conditionem duriorem, rigidiorem, vel
 aliquando laxam, flaccidam, etatem provec-
 tam, temperamentum peculiare phlegmaticum, fri-
 gidum, parum sentiens, laborem nimium, per-
 petuum, frigus, victum tenuem, exhaustum
 corpus. Malum eo magis metuendum, et sanatu

difficilius, quod solitis naturæ viribus defici-
 entibus, neque corpus ipsum quicquam conetur,
 neque remedia, alioquin efficacissima, multum
 juvent.

380. Debilitas sive infirmitas vocatur vitium,
 si quando motus musculorum, sive id genus
 quod a voluntate est, sive alterum, quod invitum
 est, justâ vi non perficitur. Major vel minor,
 generalis vel partis singularis, omnes fere mor-
 bos comitatur, neque minima eorum pars est.
 Corpus quoque innumeris morbis obnoxium
 reddit, et quasi iuerme objicit. A primâ et
 congenita corporis fabricatione sæpe pendet,

ætate, et quod vir perfecerit facile, aut tulerit
ages, and what a man could have performed easily, or have borne
 impune florente ætate, idem oppresserit, vel sustulerit
with impunity in the prime of his age, the same would oppress or would remove
 e medio puerum vel senem. Sæpe, itaque, potest vix
from the middle (kill) a boy or old man. Often, therefore, it can scarcely
 haberi morbosa. At debilitas præter solitum et vere morbosa,
be considered morbid. But a debility unusual and truly diseased,
 accidit a minutâ nervosâ vi, cerebro que nervis
comes on from diminished nervous energy, from the brain and nerves
 habentibus se male, musculis participantibus vitia
having themselves badly, the muscles partaking of the disorders
 eorum, aut corruptis propriis (vitiis), debitâ tensione fibrarum
of them, or injured by their own, the due tone of the fibres
 sublata, vel nimîâ aut diuturnâ distentione earum, vel
being destroyed, either by excessive or long continued distention of them, or
 ipsis factis rigidis et torpidis, corpore exhausto parco
themselves become stiff and torpid, from the body being exhausted by spare
 victu, inediâ, exinanitione, que demum, morbis afficientibus vel
diet, fasting, evacuation, and lastly, diseases affecting either
 totum corpus vel aliquas partes.
the whole body or some parts.

381. Summa debilitas, scilicet, vires musculorum pene vel
Extreme debility, that is, the powers of the muscles almost or
 penitus deletæ, vocatur paralysis. Est vel generalis vel tantum
entirely destroyed, is called paralysis. It is either general or only
 quorundam musculorum. Generalis oritur a vitiis cerebri que
of certain muscles. General arises from disorders of the brain and
 nervorum, aliquando parum perspectis, neque detegendis anatomico
nerves, sometimes little understood, nor to be detected by the anatomist
 scalpello; scilicet, nervosa vis ipsa deficit, fabricâ
with the scalpel; that is, the nervous energy itself fails, the fabric
 organorum adhuc integrâ; tamen compressio, obstructio, læsio,
of the organs as yet being entire; however compression, obstruction, lesion,
 inundatio sanguinis, seri, puris, tumores, &c. sæpe
inundation (effusion) of blood, of serum, of pus, tumours, &c. often
 deteguntur. Sæpe nascitur a quibusdam venenis male afficientibus
are detected. It often arises from certain poisons badly affecting
 nervos, fumis quorundam metallorum, veluti vivi argenti,
the nerves, the fumes of certain metals, for instance quicksilver,
 plumbi, &c. nonnunquam a morbis partium, remotarum a
lead, &c. sometimes from diseases of parts, far removed from

nullis remediis, nullo vitæ genere, penitus corrigenda. Varia quoque vis et robor variis ætatis contingunt, et quod vir, florente ætate, facile perfecerit, aut impune tulerit, idem, puerum vel senem, oppresserit, vel e medio sustulerit. Sæpe itaque vix morbosa haberi potest. At debilitas præter solitum et vere morbosa accidit, a vi (326) nervosa minuta, cerebroque nervisque male se habentibus, musculis eorum vitia participantibus, aut propriis corruptis, debita fibrarum tensione (321-2) sublata, vel nimia aut diuturna earum distentione (324), vel ipsis rigidis et torpidis factis, corpore exhausto, victu parco, inedia, exinanitione, morbisque,

demum, vel totum corpus vel partes aliquas afficientibus.

381. Summa debilitas, vires scilicet musculorum penitus vel pene deletæ, paralysis vocatur. Est vel generalis, vel quorundam tantum musculorum. Generalis oritur a vitiis cerebri nervorumque, aliquando parum perspectis, neque scalpello anatomico detegendis; scilicet, vis ipsa nervosa deficit, fabrica organorum adhuc integra; sæpe tamen compressio, obstructio, læsio, inundatio sanguinis, seri, puris, tumores, &c. deteguntur. A quibusdam venenis nervos male afficientibus sæpe nascitur, fumis metallorum quorundam, veluti argenti vivi,

cerebro, et musculis valde solutis, veluti a Colica
the brain, and the muscles being very much paralysed, as from the Colica
Pictonum. Paralysis singulorum musculorum, sed minus
Pictonum (painters' colic). Paralysis of particular muscles, but less
 perfecta, sæpe fit, cerebro que nervis intactis, a gravi et
complete, often arises, the brain and nerves being unhurt, from severe and
 diuturno dolore, inflammatione, nimia vel nimis diuturna tensione,
lasting pain, inflammation, excessive or over long continued tension,
 relaxatione, quiete, vel fabricâ ipsorum corruptâ, qualis
relaxation, rest, or the structure of them being injured, such as
 solet accidere post rheumatismum, podagram, luxationem;
is accustomed to happen after rheumatism, foot gout, dislocation,
 fracturas ossium, suppressionem (retentionem?) urinæ in vesicâ.
fractures of the bones, suppression of urine in the bladder.

382. Vero paralysis quæ habetur generalis, et quæ oritur a
But the palsy which is considered general, and which arises from
 vitio cerebri, raro est universi corporis. Plerumque spectamus
disorder of the brain, seldom is of the whole body. Generally we see
 paralyticos captos altero latere. Hæc vocatur hemiplegia. Fertur,
paralytics seized on one side. This is called hemiplegia. It is said,
 et sane jam confirmatur observationibus plurimorum medicorum,
and truly is now confirmed by the observations of a great many physicians,
 adversum latus ab eo in quo vitium cerebri est,
that the opposite side from that in which the disease of the brain exists,
 sic resolvi. Interdum quoque, altero latere cerebri læso,
is thus palsied. Sometimes also, the one side of the brain being injured,
 idem latus corporis convellitur, oppositum resolvitur. Si omnes
the same side of the body is convulsed, the opposite is paralysed. If all
 partes infra caput, vel infra lumbos resolvuntur, appellatur
the parts below the head, or below the loins are palsied, it is called
 paraplegia. In paralyti sensus plerumque superest, aliquando deletur,
paraplegia. In paralysis feeling frequently remains, sometimes it is destroyed,
 sæpe obtunditur. Raro, quod tamen est pessimum, motus,
often it is blunted. Rarely, which however is the worst of all, the motion,
 sensus, pulsus, calor artuum qui solvuntur, pereunt
the feeling, the pulsation, the heat of the limbs which are palsied, perish
 simul; scilicet, arteriæ ipsæ fiunt paralyticæ. Paralysis universi
at once; that is, the arteries themselves become paralytic. Paralysis of the whole
 corporis, quod ad voluntarios motus, cum anæsthesiâ et sopore
body, as relates to voluntary motions, with anæsthesia and sopor
 vocatur apoplexia. Hæc provenit a cerebro læso: vero
is called apoplexy. This proceeds from the brain being injured: but

plumbi, &c. nonnunquam a morbis partium a cerebro, et musculis solutis valde remotarum, veluti a Colica Pictonum. Singulorum musculorum paralysis, sed minus perfecta, sæpe fit, intactis cerebro nervisque, a gravi et diuturno dolore, inflammatione, tensione nimia vel nimis diuturna (324), relaxatione, quiete, vel fabrica ipsorum corrupta, qualis, post rheumatismum, podagram, luxationem, fracturas ossium, suppressionem urinæ in vesica, solet accidere.

382. Paralysis vero quæ generalis habetur, et quæ a vitio cerebri oritur, raro universi corporis est. Paralyticos plerumque altero latere captos spectamus. Hæc hemiplegia vocatur. Fertur, et

sane plurimorum jam medicorum observationibus confirmatur, latus adversum ab eo in quo cerebri vitium est, sic resolvi. Interdum quoque, læso altero cerebri latere, idem corporis latus convellitur, oppositum resolvitur. Si partes omnes infra caput, vel infra lumbos, resolvuntur, paraplegia appellatur. In paralyti sensus plerumque superest, aliquando deletur, sæpe obtunditur. Raro, quod tamen pessimum est, motus, sensus, pulsus, calor artuum, qui solvuntur, simul pereunt; scilicet, ipsæ arteriæ paralyticæ fiunt. Paralysis universi corporis, quod ad motus voluntarios, cum anæsthesia (173) et sopore, apoplexia vocatur. Hæc a læso cerebro

status simillimus huic inducitur *narcoticis*, opio et vino ipso, vel
a state very like to it is induced by narcotics, opium and wine itself, or
 alio generoso potu, sumpto ultra modum, et denique aëre
other generous drink, taken beyond bounds, and indeed from air
 corrupto carbonico acido recepto in pulmonem.
corrupted with carbonic acid being taken into the lungs.

383. Aliud vitium et motus musculorum superest, que id
Another disorder also of the motion of muscles remains, and that
 non leve aut rarum; scilicet, *spasmus*. Hic est vehemens abnormis
not slight or rare; that is, spasm. This is a violent irregular
 actio musculorum. Distinguitur in duplex genus, *tonicum et*
action of the muscles. It is divided into a double (two) kind(s), the tonic and
clonicum. Hoc sæpe vocatur convulsio, causâ distinctionis
clonic. The latter often is called convulsion, by way of distinction,
 ab altero, cui soli nomen *spasmus* solet dari.
from the other, to which alone the name spasm is accustomed to be given.

384. *Spasmus* igitur est vehemens, constans, abnormis, contractio
Spasm therefore is a violent, constant, irregular, contraction
 fibrarum musculorum: vero convulsio insolita vehemens contractio,
of the fibres of the muscles: but convulsion an unusual violent contraction,
 alternans cum relaxatione. Est (proprium) utriusque, si occupat
alternating with relaxation. It is the property of both, if it affects
 musculos voluntarii motus, perfici sine voluntate; vero
the muscles of voluntary motion, to be performed without the will; but
 affectio est una que eadem, sive incumbat musculis volun-
the affection is one and the same, whether it fall upon the muscles of volun-
 tarii motus, sive iis actio quorum non pendet a voluntate.
tary motion, or those the action of which does not depend upon the will.

Porro, binæ species hujus mali agnoscunt similes causas,
Moreover, both kinds of this disorder acknowledge similar causes,
 sæpe observantur in eodem ægro (homine) et altera sæpe
often are observed in the same patient and the one is often
 convertitur in alteram (speciem).
converted into the other.

385. Nimis sentiens et nimis mobilis habitus corporis reddit
A too sensitive and too irritable habit of body renders
 homines opportunos spasmis; hinc malum familiare fœminis,
persons liable to spasms; hence (it is) a disorder common to women,
 infantibus, debilibus, luxuriosis, desidibus, plenis sanguine
infants, to the weak, the luxurious, the slothful, those full of blood.
 (subintel. hominibus).

provenit: status vero huic simillimus inducitur
narcoticis, opio, et ipso vino, vel alio potu gene-
 roso, ultra modum sumpto, et denique aëre
 acido carbonico corrupto in pulmonem recepto.

383. Superest et aliud motus musculorum vi-
 tium, idque non leve aut rarum; *spasmus* scilicet.
 Hic est actio musculorum vehemens, abnormis.
 In duplex genus distinguitur, *tonicum et clonicum*.
 Hoc sæpe convulsio vocatur, distinctionis causa
 ab altero, cui soli nomen *spasmus* dari solet.

384. *Spasmus* igitur est vehemens, constans,
 abnormis, contractio fibrarum musculorum:
 convulsio vero, insolita, vehemens contractio,

cum relaxatione alternans. Utriusque est, si
 musculos voluntarii motus occupat, sine volun-
 tate perfici; affectio vero una eademque est,
 sive musculis voluntarii motus incumbat, sive
 iis quorum actio a voluntate non pendet. Porro,
 binæ species hujus mali similes causas ag-
 noscunt, sæpe in eodem ægro observantur, et
 altera in alteram sæpe convertitur.

385. Habitus corporis nimis sentiens (143) et
 nimis mobilis (371-4) homines *spasmis* opportu-
 nos reddit; hinc malum fœminis, infantibus,
 debilibus, luxuriosis, desidibus, sanguine ple-
 nis, familiare.

386. Inducitur hominibus jam factis proclivibus
It is brought on in persons already become disposed (predisposed)
 quocunque stimulo admoto cerebro, nervo, musculo, consentienti
by any stimulus applied to the brain, a nerve, a muscle, a sympathising
 parti; cujusmodi sunt dentitio, vermes hospitantes in
part; of which kind are dentition, worms boarding and lodging in
 intestinis, que irritantes eadem, acris materies inficiens sanguinem,
the intestines, and irritating the same, an acrid matter infecting the blood,
 ve gravans ventriculum aut intestina, irritatio nervi, aut
or oppressing the stomach or intestines, irritation of a nerve, or
 cerebri, ab osse excrescente præter naturam et premente in
of the brain, from bone growing out beyond nature and pressing upon
 cerebrum, tumore, nimia plenitudine vasorum quæ vehunt
the brain, tumour, excessive fulness of the vessels which carry
 sanguinem; dolor, vehemens affectus animi, subita exinanitio, quædam
the blood; pain, violent affection of the mind, sudden evacuation, certain
 venena admissa in corpus. Sæpe, tamen, malum, ingravescens
poisons admitted into the body. Often, however, the disorder, increasing
 consuetudine, excitatur levioribus causis, parum cognitis, neque facile
by habit, is excited by slighter causes, little known, nor easily
 observandis.
to be observed.

387. Spasmus est causa et effectus, et sæpe maxima pars
Spasm is a cause and effect, and often the greatest part
 multorum morborum: aliquando pariter difficilis cognitu et
of many diseases: sometimes equally difficult to be understood and
 sanatu; nimirum qui induat tot formas et edat
to be cured; as being that which can put on so many forms and produce
 tam varia signa, prout affecerit varias partes corporis,
such various signs, according as it (shall) affect the various parts of the body,
 functiones quarum perturbet, intendat, impediat in mirum
the functions of which it may disturb, increase, impede in a wonderful
 modum: malum plerumque hærens in primordiis ipsis
manner: a disorder for the most part inherent in the first principles themselves
 constitutionis, neque ideo summovendum quavis levi aut
of the constitution, nor on that account to be removed by any slight or
 subtili mutatione.
sudden change.

386. Inducitur hominibus jam proclivibus factis, stimulo quocunque (305) cerebro, nervo, musculo, parti consentienti (325-6, 355, et seq.) admoto; cujusmodi sunt, dentitio, vermes in intestinis hospitantes, eademque irritantes, materies acris sanguinem inficiens, ventriculume aut intestina gravans, irritatio nervi aut cerebri, ab osse præter naturam excrescente et in cerebrum premente, tumore, nimia plenitudine vasorum quæ sanguinem vehunt; dolor, vehemens animi affectus, subita exinanitio, venena quædam in corpus admissa. Sæpe tamen

malum consuetudine ingravescens (369) levioribus causis excitatur, parum cognitis, neque facile observandis.

387. Multorum morborum spasmus causa est et effectus, et sæpe maxima pars: cognitu et sanatu pariter aliquando difficilis; nimirum qui tot induat formas, et signa tam varia edat, prout varias corporis partes affecerit, quarum functiones mirum in modum perturbet, intendat, impediat: malum in ipsis primordiis constitutionis plerumque hærens, neque ideo levi aut subita quavis mutatione summovendum.

CAP. XIII.
CHAP. XIII.

De somno, que usibus et causis et varietatibus et vitiis, defectu, Of sleep, and the uses and causes and varieties and disorders, deficiency, excessu, ejûs; que noxis eorum; et de ratione et causis excess, of it; and the mischiefs of them; and of the nature and causes somniorum. of dreams.

388. Homo non semper valet ad exercendum sensum que voluntarium
Man is not always able to exercise sense and voluntary
motum: que oportet utramque functionem ferri per intervalla, ut
motion: and it behoves that each function cease at intervals, that
vires musculorum que nervorum exhaustæ exercitatione, reficiantur
the powers of the muscles and of the nerves exhausted by exercise, may be restored
quiete et otio.
by rest and leisure.

389. Alter status, quo sentimus bene, que regimus musculos
One state, in which we feel much, and govern the muscles
voluntarii motus ad arbitrium, est vigilia: alter, quo est
of voluntary motion at pleasure, is waking: the other, in which there is
neque sensus neque voluntarius motus, vocatur somnus.
neither sense nor voluntary motion, is called sleep.

390. Vero alteruter potest esse plus ve minus perfectus, ita ut
But either may be more or less perfect, so that
homo nec dormiat plene, neque bene fungatur muneribus
a person neither sleeps soundly, nor properly discharges the duties
vigilantis (hominis). Iis, qui sanissimi dormiunt altum,
of a waking person. They, who being very healthy sleep soundly,
est (pro habet) neque voluntarius motus neque externus sensus;
have neither voluntary motion nor external sensation;
neque ulla memoria interni (sensus) si quis fuerit: autem
nor any recollection of internal if any have been: but
semisomnes sentiunt quodammodo, et percipiunt multas externas
those half asleep have sensation in some degree, and perceive many external
res, quamvis parum accurate: recordantur, imaginantur, cogitant
things, although no way accurately: they recollect, imagine, think
multum, que agitantur variis affectibus animi; sæpe
a great deal, and are agitated by various emotions of the mind; they often

CAP. XIII.—*De somno; ejusque usibus, et causis, et varietatibus, et vitiis, defectu, excessu; eorumque noxis: et de ratione et causis somniorum.*

388. Homo non semper valet ad sensum motumque voluntarium exercendum: utramque functionem oportet per intervalla ferri, ut vires musculorum nervorumque, exercitatione exhaustæ, quiete et otio reficiantur (3).

389. Alter status, quo bene sentimus, musculorumque voluntarii motus ad arbitrium regimus, vigilia est: alter quo neque sensus est, neque motus voluntarius, somnus vocatur.

390. Alteruter vero plus minusve perfectus esse potest, ita ut homo nec plene dormiat, neque vigilantis muneribus bene fungatur. Qui sanissimi altum dormiunt, iis neque motus voluntarius est, neque sensus externus; neque interni, si quis fuerit, memoria ulla: semisomnes autem quodammodo sentiunt, et multas res externas percipiunt, quamvis parum accurate: multum recordantur, imaginantur, cogitant, variisque animi affectibus agitantur; loquuntur sæpe, surgunt aliquando, vestes induunt, ambulat, multaque, vigilantium instar,

loquuntur, allquando surgunt, induunt vestes, ambulant, que
talk, sometimes rise up, put on their clothes, walk, and
 faciunt multa instar vigilantium (hominum). Vero vitales, quin et
do many things like waking persons. But the vital, as well as
 naturales actiones, pergunt etiam in somno quam perfectissimo,
the natural actions, go on even during sleep the most perfect possible,
 quamvis plerumque observentur nonnihil lentiores quam in
although generally they are observed somewhat slower than in
 vigili.
the waking state.

391. Suavissimus somnus obrepat, post solitos labores diei,
Very sweet sleep creeps on, after the accustomed labours of the day,
 levem cœnam, Venerem modice cultam, tenebris et
a light supper, Venus moderately cultivated, the darkness and
 silentio noctis suadentibus. Amor quietis et tranquillitatis pariter
silence of night inviting. A love of quiet and tranquillity alike
 animi et corporis, debilitas, lassitudo, sensus defatigationis, præsertim
of mind and of body, debility, lassitude, a sense of fatigue, especially
 in his musculis quibus usi sumus maxime, et oscitatio, et
in those muscles which we have used most, also yawning, and
 frequens et valida extensio artuum præcedunt; hebetudo
a frequent and powerful extension of the limbs precede; dulness
 externorum sensuum, confusio internorum, attentio distracta,
of the external senses, confusion of the internal, the attention distracted,
 neque parens voluntati, recordatio injussa, invita, imaginatio
nor obeying the will, recollection unbidden, involuntary, imagination
 vaga, et demum credita, species delirii, postremo, oblivio
wandering, and at last believed, a species of delirium, finally, oblivion
 omnium rerum (superveniunt): musculi fatigati et relaxati, possunt
of all things: the muscles fatigued and relaxed, are able
 neque regere et sustinere singulas partes quibus adnectuntur,
neither to govern and support the several parts to which they are attached,
 neque ideo totum corpus; palpebræ nictant, et tandem
nor consequently the whole body; the eyelids wink, and at length
 clauduntur; maxilla cadit, caput nutat, omnia membra leviter
are shut; the jaw falls, the head nods, all the members slightly
 flexa quiescunt, et corpus ipsum flectitur antrosum, nisi
bent become quiet, and the body itself is bent forwards, except
 dormiens decumbat. Pulsus arteriarum fiunt tardiores
the sleeping person lies down. The pulsations of the arteries become slower
 et pleniores, respiratio lentior et profundior, et multi
and fuller, respiration slower and deeper, and many (while)

faciunt. Actiones vero vitales, quin et naturales, pergunt etiam in somno quam perfectissimo, quamvis nonnihil lentiores quam in vigili plerumque observentur.

391. Post solitos diei labores, levem cœnam, Venerem modice cultam, suavissimus somnus obrepat, suadentibus tenebris et silentio noctis. Præcedunt amor quietis et animi pariter et corporis tranquillitatis, debilitas, lassitudo, defatigationis sensus in his musculis præsertim quibus maxime usi sumus, et oscitatio, et frequens et valida artuum extensio; sensuum externorum hebetudo, internorum confusio, at-

tentio distracta, neque voluntati parens, recordatio injussa, invita, imaginatio vaga, et credita demum, delirii species, postremo, omnium rerum oblivio: musculi fatigati et relaxati, neque singulas quibus adnectuntur partes, neque ideo totum corpus, regere et sustinere possunt: palpebræ nictant, et tandem clauduntur; maxilla cadit, caput nutat, omnia membra leviter flexa quiescunt, et corpus ipsum antrosum flectitur, nisi decumbat dormiens. Pulsus arteriarum tardiores et pleniores fiunt, respiratio lentior et profundior, et multi dormientes stertunt; calor minuitur, et ple-

dormientes stertunt; calor minuitur, et pleræque secretiones; et
sleeping snore; heat is diminished, and most (of) the secretions; and
 soliti appetitus et propensiones non percipiuntur.
the accustomed appetites and propensities are not perceived.

392. Diuturnitas somni pendet multum ab ætate, constitutione,
The length of time for sleep depends much upon age, constitution,
 consuetudine, et demum statu corporis tempore quo
custom, and lastly the state of the body at the time at which
 somnus obreperat. Varii stimuli, vel admoti extrinsecus, vel
the sleep had come on. Various stimuli, either applied from without, or
 orti intus, imponunt finem eidem, lux, strepitus, rudior
arising within, put an end to the same, light, noise, rougher
 tactus, fames, sitis, propensio ad reddendam urinam, &c. Tandem
handling, hunger, thirst, a propensity to void the urine, &c. At length
 somnus rumpitur, neque adeo subito, quin perturbatio internorum
sleep is broken, nor so suddenly, but that perturbation of the internal
 sensuum, insomnium, hebetudo, et imperfectus usus externorum
senses, dreaming, dulness, and an imperfect use of the external
 sensuum plerumque observentur, et sæpe recordemur
senses for the most part may be observed, and frequently we recollect
 matutini insomnii, plerumque obliti aliorum. Demum
the morning dream, mostly forgetful of the others. At length
 expergiscimur, oscitamus, extendimus membra flexa diu,
we awake, we yawn, we extend the limbs that were bent a long time,
 non secus ac dormituri feceramus; denuo percipimus
in like manner as when about to sleep we had done; we again perceive
 appetitus et naturales propensiones; facti compotes omnium facultatum
the appetites and natural propensities; become masters of all the faculties
 corporis que animi exiguo spatio temporis.
of the body and mind in a short space of time.

393. Causa somni, nimirum plena et proxima causa,
The cause of sleep, that is the adequate and proximate cause,
 adhuc latet, et fortasse latebit diu. Male tribuitur
as yet lies hid, and perhaps will lie hid for a long time. It is badly attributed
 nervis exhaustis et repletis vicissim suo fluido;
to the nerves being exhausted and repleted by turns with their own fluid;
 quippe quia somnus, in plurimis exemplis, prorogetur facile,
inasmuch as sleep, in many instances, may be deferred easily,
 ubi fluidum, si revera tale quid inest nervis et cerebro,
when the fluid, if in truth any such thing exists in the nerves and brain,
 potest non esse valde exhaustum; et sæpe producat
cannot not be (must be) very much exhausted; and often it is protracted

ræque secretiones; et soliti appetitus (353) et propensiones (354) non percipiuntur.

392. Diuturnitas somni pendet multum ab ætate, constitutione, consuetudine, et demum corporis statu tempore quo somnus obreperat. Finem eidem imponunt varii stimuli, vel extrinsecus admoti, vel intus orti, lux, strepitus, tactus rudior, fames, sitis, propensio ad urinam reddendam, &c. Tandem somnus rumpitur, neque adeo subito, qui perturbatio sensuum internorum, insomnium, hebetudo, et imperfectus externorum sensuum usus plerumque observentur, et sæpe insomnii matutini recorde-

mur, aliorum plerumque obliti. Expergiscimur demum, oscitamus, membra diu flexa extendimus, non secus ac dormituri feceramus; appetitus et propensiones naturales denuo percipimus; exiguo temporis spatio, omnium corporis animique facultatum compotes facti.

393. Causa somni, nimirum, plena et proxima causa, adhuc latet, et fortasse diu latebit. Male fluido suo nervis exhaustis vicissim et repletis tribuitur; quippe quia somnus, plurimis in exemplis, prorogetur facile, ubi fluidum, si tale quid revera nervis et cerebro inest, non potest non esse valde exhaustum; et sæpe pro-

diu postquam nervi debent abundare quam maxime proprio
long after that the nerves ought to abound the most possible with their
 fluido.
proper fluid.

394. Nec somnus melius dicitur oriri a compresso
Nor (is) sleep more properly said to arise from a compressed
 cerebro; enim plerumque nulla talis compressio potest ostendi, aut
brain; for generally no such compression can be shewn, or
 profecto fieri et sopor inductus cerebro compresso,
indeed take place: and the drowsiness induced by the brain being compressed,
 differt multum a naturali somno. Enim ille nec reficit vires,
differs much from natural sleep. For it neither recruits the strength,
 nec potest ita rumpi quin æger relabatur in eundem statim
nor can be so broken but that the patient relapses into the same as soon
 ut stimulus qui excitabat fuerit sublatus. Vero naturalis somnus,
as the stimulus which excited him has been removed. But natural sleep,
 nihil omnino admoto quod liberet cerebrum a compressione,
nothing at all being applied which could relieve the brain from compression,
 facillime pellitur quocunque stimulo.
is very easily driven off by any stimulus.

395. Omnia signa, quæ comitantur somnum, docent, statum
All the signs, which accompany sleep, prove, that the state
 universi nervosi generis, et imprimis cerebri, multum mutari.
of the whole nervous system, and especially of the brain, is much changed.
 Vero non docent qualis ista mutatio fuerit. Tamen,
But they do not shew what kind that change may be. However,
 juvabit novisse remotas causas somni et vigiliarum, quibus
it will benefit to know the remote causes of sleep and watchfulness, by which
 iste ignotus status inducitur, et ope quarum, medici sæpe
that unknown state is induced, and by means of which, physicians often
 conantur, neque frustra, temperare somnum prout res
endeavour, nor in vain, to regulate sleep according as circumstances
 postulaverint.
shall require.

396. Omnis sensus, pariter externus que internus, omnis affectus
Every sensation, alike external and internal, every affection
 animi, omnis actio musculorum, excitant nervosum genus, que
of the mind, every action of the muscles, excite the nervous system, and
 præstant hominem vigilem, eo certius, quo ipsa fuerint
keep a person awake, the more certainly, as they shall be
 vehementiora. Sic vivida lux, strepitus, dolor, ira, gaudium, mæror,
more violent. Thus vivid light, noise, pain, anger, joy, grief,

ducatur diu, postquam nervi fluido proprio debent quam maxime abundare.

394. Nec melius a compresso cerebro somnus oriri dicitur; plerumque enim nulla talis compressio ostendi aut profecto fieri potest: et sopor, compresso cerebro inductus, differt multum a naturali somno. Ille enim nec vires reficit, nec ita rumpi potest, quin statim in eundem æger relabatur, ut stimulus qui excitabat sublatus fuerit. Somnus vero naturalis, nihil omnino admoto quod cerebrum a compressione liberet, stimulo quocunque facillime pellitur.

395. Docent omnia quæ somnum comitantur

signa, universi generis nervosi, et imprimis cerebri, statum multum mutari. Qualis vero ista mutatio fuerit, non docent. Juvabit tamen novisse causas somni et vigiliarum remotas, quibus ignotus iste status inducitur, et quarum ope medici sæpe conantur, neque frustra, somnum, prout res postulaverint, temperare.

396. Sensus omnis, externus internusque pariter, omnis animi affectus, omnis actio musculorum genus nervosum excitant, hominemque vigilem præstant, eo certius, quo ipsa vehementiora fuerint. Sic vivida lux, strepitus, dolor, ira, gaudium, mæror, metus, anxietas,

metus, anxietas, fames, sitis, vehemens cupido, motus corporis,
fear, anxiety, hunger, thirst, ardent desire, motion of the body,
 vivida memoria aut imaginatio, intensa cogitatio, adimunt somnum.
lively memory or imagination, intense thinking, prevent sleep.
 Vero nulla, aut levior, impressio in organa sensuum,
But none, or a slighter, impression upon the organs of the senses,
 susurrus apum, murmur labentis rivi, frigida plumbea oratio,
the hum of bees, the murmur of a gliding stream, a cold dull oration,
 denique, talis exercitatio memoriæ ipsius, qualis neque est nimis
lastly, such an exercise of memory itself, as neither is too
 laboriosa, neque commovet mentem ullo modo, invitant atque
laborious, nor excites the mind in any manner, invite and
 conciliant somnum. Nimius impetus sanguinis versus caput,
procure sleep. An excessive impetus of blood towards the head,
 qualis sæpe accidit in febribus, pellit somnum: vero libera et
such as often happens in fevers, repels sleep: but a free and
 æqualis distributio sanguinis per totum corpus, que imprimis
equal distribution of the blood through the whole body, and especially
 extremas partes, sæpe inducit somnum. Quicquid solvit corpus,
the extreme parts, often induces sleep. Whatever relaxes the body,
 favet somno: hinc variæ exinanitiones, balneum, fofus, calor
favours sleep: hence various evacuations, the bath, fomentation, heat
 ipse aliquando utilis ad conciliandum somnum. Somnus facilius
itself (are) sometimes useful to procure sleep. Sleep more easily
 obrept post cibum et post concubitum; scilicet, vehemente sensu
creeps on after food and after venery: that is, turbulent feeling
 pacato, et corpore ipso nonnihil soluto. Intensum et
being calmed, and the body itself somewhat relaxed. Intense and
 diuturnum frigus inducit somnum, haud facilem ruptu, sæpe
continued cold induces sleep, not easy to be broken, often
 continuatum morti. Denique sunt res, quæ admotæ corpori
continued to death. Indeed there are things, which applied to the body
 aut receptæ in id ipsum, non modo non excitant nervosum
or received into it itself, not only do not excite the nervous
 genus, sed plane sopiunt, reddunt minus aptum ad sensum que
system, but altogether lull it, render it less fit for sensation and
 motum, et sic inducunt altum somnum. Hujusmodi sunt quæ
motion, and thus bring on deep sleep. Of this sort are what
 vocantur narcotica remedia, opium et similia: quibus oportet
are called narcotic remedies, opium and the like: with which it behoves
 annumerare vinum ipsum sumptum nimiam copiam, et quosdam
to reckon wine itself taken in too great quantity, and certain

fames, sitis, cupido vehemens, motus corporis, memoria aut imaginatio vivida, cogitatio intensa, somnum adimunt. Nulla vero, aut levior, in organa sensuum impressio, susurrus apum, murmur labentis rivi, oratio frigida plumbea, ipsius denique memoriæ talis exercitatio, qualis neque nimis laboriosa est, neque mentem ullo modo commovet, somnum invitant atque conciliant. Sanguinis caput versus impetus nimis, qualis sæpe in febribus accidit, somnum pellit: libera vero et æqualis sanguinis per totum corpus, partesque imprimis extremas, distributio, somnum sæpe inducit. Quicquid corpus solvit, somno favet: hinc variæ

exinanitiones, balneum, fofus, calor ipse, aliquando ad somnum conciliaudum utilis. Post cibum et post concubitum somnus facilius obrept; pacato scilicet vehemente sensu et corpore ipso nonnihil soluto. Frigus intensum et diuturnum somnum inducit, haud facilem ruptu, sæpe morti continuatum. Denique, sunt res, quæ corpori admotæ, aut in id ipsum receptæ, genus nervosum non modo non excitant, sed plane sopiunt, ad sensum motumque minus aptum reddunt, et sic altum somnum inducunt. Hujusmodi sunt quæ vocantur narcotica remedia, opium, et similia: quibus annumerare oportet vinum ipsum nimiam copia sumptum, et vapores

lethiferos vapores, veluti ardentis carbonis. Postremo, vigilia ipsa
deadly vapours, as of burning charcoal. Finally, watching itself
 est quodammodo causa somni, quatenus inter vigiliis, homo
is in some measure a cause of sleep, inasmuch as during watchings, a person
 semper exercent sua organa plus ve minus, et sic minuat,
always exercises his organs more or less, and thus diminishes,
 consumat, nervosam vim. Et profecto, quo vehementius corpus
consumes, the nervous power. And truly, the more violently the body
 exercetur, fere pari ratione necessitas somni premit.
is exercised, in almost an equal degree does the necessity for sleep press.

397. Fœtus videtur transire somno fere tempus quod
The fœtus seems to pass in sleep nearly (all) the time (during) which
 latet in utero; et immaturi partus, sed tamen superstites,
it lies hid in the uterus; and premature births, but nevertheless that survive,
 dormiunt fere totos primos menses. Infantes quoque solent
sleep nearly the whole first months. Infants also are accustomed
 dormire multum. Pueri, et homines qui degunt laboriosam vitam,
to sleep a great deal. Boys, and men who lead a laborious life,
 dormiunt plus, et quoque altius, quam adulti, aut luxuriosi
sleep more, and also more soundly, than adult, or luxurious
 et desides, homines; scilicet qui bene exercent corpus,
and indolent, persons; as being persons who properly exercise the body,
 neque habent mentem laceratam curis. Leves somni, præmium et
nor have the mind distracted by cares. Light slumbers, the reward and
 solatium laboris, virtutis, temperantiæ, haud facile conceduntur
solace of labour, virtue, temperance, are not easily granted
 immerentibus.
to the undeserving.

398. Porro, dum corpus crescit indies, plus somni
Moreover, so long as the body is growing daily, more (of) sleep
 requiritur, scilicet qui confert haud parum ad reficiendum et
is required, as that which contributes not a little to recruit and
 alendum corpus. Homines dormiunt minus medio ætate. Autem
nourish the body. Persons sleep less at the middle age. But
 consuetudo facit multum hic: alii sunt contenti somno quatuor
habit does a great deal here: some are content with the sleep of four
 horarum, alii consumunt decem horas et amplius de die somno.
hours, others consume ten hours and more of the day in sleep.
 Quidam, fere confecti senio, facti somniculosi et torpidi,
Some, almost worn out with old age, become drowsy and torpid,
 transierunt maximam partem temporis somno.
have passed the greatest part of (their) time in sleep.

quosdam lethiferos, veluti carbonis ardentis. Postremo, ipsa vigilia somni quodammodo causa est, quatenus inter vigiliis, homo sua organa plus minusve semper exercent, et sic vim nervosam minuat, consumat. Et profecto, quo vehementius corpus exercetur, pari fere ratione premitur necessitas somni.

397. Tempus quod fœtus in utero latet somno fere transire videtur; et partus immaturi, sed tamen superstites, totos primos menses fere totos dormiunt. Infantes quoque multum dormire solent. Pueri, et homines qui vitam laboriosam degunt, plus quam adulti homines, aut luxuriosi et desides, et alius quoque dormiunt;

scilicet qui corpus bene exercent, neque hoc cibo gravatum, neque mentem curis laceratam habent. Leves somni, laboris, virtutis, temperantiæ, præmium et solatium, immerentibus haud facile conceduntur.

398. Porro dum crescit indies corpus, plus somni requiritur, scilicet qui ad corpus reficiendum et alendum haud parum confert. Media ætate, homines minus dormiunt. Consuetudo autem multum hic facit: alii quatuor horarum somno contenti sunt, alii decem et amplius horas de die somno consumunt. Quidam, senio fere confecti, somniculosi et torpidi facti, maximam temporis partem somno transierunt.

399. Usus somni satis apparet ex effectibus quos habet
The use of sleep sufficiently appears from the effects which it has
 in corpore. Reficit vires et animi et corporis consumptas
on the body. It renews the powers both of mind and body when consumed
 exercitatione: conciliat vigorem huic, pristinam alacritatem illi:
by exercise: it restores its vigour to the latter, its former alacrity to the former:
 reddit musculos, defessos, rigidos, dolentes, tremulos valido labore,
it renders the muscles, wearied, stiff, painful, tremulous with hard labour,
 iterum vividos, validos, et mobiles: temperat pulsus arteriarum,
again lively, strong, and active: it moderates the pulsations of the arteries,
 evadentes frequentiores sub vesperem, et reducit ad matutinam
becoming more frequent towards evening, and reduces them to the morning
 moderationem: videtur favere concoctioni cibi, et appositioni
regularity: it seems to favour the digestion of the food, and the apposition
 nutrimenti ad reparandam jacturam solidarum partium; minuit
of the nutriment to repair the loss of the solid parts; it diminishes
 secretiones et excretiones; et sinit secretos humores spissescere,
the secretions and excretions; and permits the secreted humours to thicken,
 scilicet, corpore facto minus sentiente et mobili. Hinc
that is, by the body being rendered less sensitive and irritable. Hence
 somnus non modo utilis, sed prorsus necessarius ad conservandas
sleep (is) not only useful, but absolutely necessary to preserve
 vitam et sanitatem; et præstantissimum remedium ad sanandos vel
life and health; and a most excellent remedy for curing or
 levandos multos morbos.
relieving many diseases.

400. Defectus somni nocet multimodis; imprimis nervoso genere.
Want of sleep hurts in many ways; especially the nervous system.
 Reddit organa externorum et internorum sensuum, que omni
It renders the organs of the external and internal senses, and of every
 geni motus, minus apta ad sua munera. Hinc sensus vel
kind of motion, less fitted for their functions. Hence sensations either
 nulli vel imperfecti et depravati, dolor capitis, vertigo, imbecillitas,
none or imperfect and depraved, pain of the head, vertigo, imbecility,
 defectus memoriæ, species delirii, demum, insania ipsa; debilitas
loss of memory, a species of delirium, lastly, insanity itself; debility
 artuum, et imperfecta et inordinata actio vitalium organorum,
of the limbs, and an imperfect and irregular action of the vital organs,
 frequentes pulsus (sc. art.), calor, febris, prava concoctio cibi,
frequent pulsations, heat, fever, depraved concoction of the food,

399. Usus somni ex effectibus quos in corpore habet satis apparet. Vires et animi et corporis, exercitatione consumptas, reficit: huic vigorem, illi alacritatem pristinam conciliat: musculos valido labore defessos, rigidos, dolentes, tremulos, iterum vividos, validos, et mobiles reddit: pulsus arteriarum, sub vesperem frequentiores evadentes, temperat, et ad moderationem matutinam reducit: cibi concoctioni, et appositioni nutrimenti ad reparandam partium solidarum jacturam, favere videtur: secretiones et excretiones minuit; et humores secretos spissescere sinit, corpore scilicet minus sentiente et mobili facto. Hinc

ad vitam et sanitatem conservandas, somnus non utilis modo, sed prorsus necessarius; et ad multos morbos sanandos vel levandos, præstantissimum remedium.

400. Defectus somni multimodis nocet: imprimis generi nervoso. Organa sensuum externorum et internorum, motusque omnigeni, ad sua munera minus apta reddit. Hinc sensus vel nulli, vel imperfecti et depravati, capitis dolor, vertigo, imbecillitas, memoriæ defectus, delirii species, ipsa demum insania; debilitas artuum, et imperfecta et inordinata vitalium organorum actio, pulsus frequentes, calor, febris, concoctio cibi prava, corpus parum nu-

corpus parum nutritum, macies, demum secretiones et
the body not nourished, emaciation, lastly the secretions and
 excretionēs auctæ, vel impeditæ vel perturbatæ.
excretions increased, or impeded or disturbed.

401. Somnus impeditur, tum sanis tum morborum hominibus,
Sleep is impeded, as well in healthy as in sick persons,
 variis causis jam recensitis. Præterea, deficit in multis
by the various causes already enumerated. Besides, it fails in many
 morbis, quorum sunt pauci qui non facessant tantum
diseases, of which there are few which do not cause so much
 doloris aut anxietatis quantum fuerit sat ad arcendum vel
(of) pain or anxiety as may be sufficient to keep off or
 rumpendum somnum. Febres omnigenæ fere faciunt (febricitantem)
to break the sleep. Fevers of every kind generally cause (the patient)
 dormire male, cum ob generalem molestiam quæ non
sleep badly, as well because of the general uneasiness which not
 nunquam comitatur hoc genus morborum, tum ob
never (sometimes) accompanies this class of diseases, as on account of
 impetum sanguinis versus caput sæpe incitatum; tum quoque
the impetus of the blood towards the head (being) often increased; as also
 ob ventriculum habentem se male, et gravatum crudo
on account of the stomach having itself ill, and oppressed with crude
 cibo, aut distentum potu. Hæc quoque est ratio cur multi
food, or distended with drink. This also is the reason why many
 hypochondriaci et hysterici dormiant tam male; scilicet, qui
hypochondriacal and hysterical (persons) sleep so badly; that is, who
 solent concoquere male, et habent stomachum opportunum
are accustomed to digest badly, and have the stomach subject to
 multis, quamvis sæpe levibus, malis; quorum vel levissima
many, although often slight, disorders; of which even the slightest
 præsertim si corpus jam fuerit nimis mobile et irritabile,
especially if the body already should be too mobile and irritable,
 auferent somnum.
will prevent sleep.

402. Defectus somni, pari ratione, solet nocere, sed adhuc
Want of sleep, for a like reason, is accustomed to hurt, but still
 magis, et citius, in morbis ac in sanitate; scilicet, viribus
more, and more quickly, in diseases than in health; namely, by the powers
 ægri minutis, viribus morbi intensis, dolore
of the sick being reduced, the strength of the disease being increased, pain
 capitis aut delirio inductis, quæ concoctione cibi impedita.
of the head or delirium induced, and the digestion of the food impeded.

tritum, macies, secretiones demum et excretiones auctæ, vel impeditæ, vel perturbatæ.

401. Impeditur somnus, tum sanis hominibus, tum morborum, variis causis jam (396) recensitis. Deficit præterea in multis morbis, quorum pauci sunt, qui non tantum doloris, aut anxietatis, aut molestiæ facessant, quantum sat fuerit ad somnum arcendum vel rumpendum. Febres omnigenæ fere male dormire faciunt, cum ob molestiam generalem, quæ nunquam non hoc genus morborum comitatur, tum ob incitatum sanguinis impetum, sæpe caput ver-

bentem, et crudo cibo gravatum, aut potu distentum. Hæc quoque ratio est cur multi hypochondriaci et hysterici tam male dormiant; scilicet qui male solent concoquere, et ventriculum habent multis, quamvis sæpe levibus, malis opportunum; quorum vel levissima, præsertim si corpus jam nimis mobile et irritabile fuerit, somnum auferent.

402. Defectus somni, pari ratione in morbis ac in sanitate, sed magis adhuc et citius nocere solet; viribus scilicet ægri minuita, viribus morbi intensis, dolore capitis aut delirio inductis, cibusque concoctione impedita. Igitur

Igitur ipse est non modo molestissimum signum adversæ
Therefore itself is not only a most troublesome symptom of bad
 valetudinis, sed sæpe et causa aliorum et gravium malorum.
health, but often also the cause of other and severe diseases.

403. Excessus somni quoque nocet haud parum. Reddit totum
Excess of sleep also hurts not a little. It renders the whole
 hominem debilem, torpidum, hebetem, fere fatuum, facit motum
frame weak, torpid, dull, almost foolish, makes the motion
 sanguinis languidum, et minuit plerasque secretiones et
of the blood languid, and diminishes most of the secretions and
 excretiones. Hinc plenitudo, obesitas, flacciditas, et impotentia ad
excretions. Hence fulness, obesity, flaccidity, and incompetency to
 omnia munera vitæ (oriuntur).
all the duties of life.

404. Causæ excessûs hujusmodi, sunt vel solitæ causæ somni
The causes of excess of this sort, are either the usual causes of sleep
 jam recensitæ, intensæ ultra modum, vel aliquod vitium
already enumerated, increased beyond bounds, or some disorder
 cerebri, veluti compressio, inundatio, &c. vel aliquando ut videtur
of the brain, as compression, effusion, &c. or sometimes as it seems
 magna insolita debilitas, et inducta ab insolitâ causâ; veluti
great unusual debility, and brought on by an unusual cause; as
 sub finem quarundam februm, vel in convalescentibus ex
towards the end of certain fevers, or in persons convalescent from
 iis que aliis morbis, quamvis in his exemplis multum absit ut
them and other diseases, although in these examples it is far from that
 tam diuturnus somnus noceat; vel siquando forte graves et
so prolonged sleep can hurt; or whenever by chance severe and
 diuturni mœror aut metus induxerint mirum et
long continued grief or fears have brought on a wonderful and
 inexpectatum soporem. Denique quidam homines didicerunt, consuetudine
unexpected drowsiness. Indeed some persons have learned, by habit
 solâ, dormire plus justo, non sine magno malo. Nec desunt
alone, to sleep more than proper, not with great evil. Nor are there
 exempla hominum, qui, sine manifestâ causâ, transierunt
wanting examples of men, who, without any manifest cause, have passed
 totos dies vel etiam menses, vix interrupto somno.
entire days or even months, in a scarcely interrupted sleep.

405. Somnia, qualia sæpe agitant, delectant, angunt, terrent,
Dreams, such as often agitate, delight, render anxious, terrify,
 dormientes, rapiunt in novos orbes, solent haberi
persons sleeping, waft them into new spheres, are accustomed to be considered

non modo ipse molestissimum adversæ valetu-
 ditudinis signum est, sed et aliorum sæpe et gra-
 vium malorum causa.

403. Excessus quoque somni haud parum no-
 cet. Totum hominem debilem, torpidum, hebe-
 tem, fere fatuum reddit: motum sanguinis
 languidum facit, et plerasque secretiones et
 excretiones minuit. Hinc plenitudo, obesitas,
 flacciditas, et ad omnia vitæ munera impo-
 tentia.

404. Causæ hujusmodi excessus sunt, vel
 solitæ somni causæ jam (396) recensitæ, ultra
 modum intensæ, vel vitium aliquod cerebri,
 veluti compressio, inundatio, &c. vel aliquando,
 ut videtur, debilitas magna, insolita, et ab in-

solita causa inducta; veluti sub finem qua-
 rundam februm, vel in convalescentibus ex iis
 aliisque morbis, quamvis in his exemplis mul-
 tum absit ut tam diuturnus somnus noceat;
 vel siquando forte mœror aut metus graves et
 diuturni, mirum et inexpectatum soporem in-
 duxerint. Denique, sola consuetudine, plus
 justo dormire, non sine magno malo, quidam
 homines didicerunt. Nec desunt exempla homi-
 num, qui, sine manifesta causa, totos dies, vel
 etiam menses, somno vix interrupto, transie-
 runt.

405. Somnia, qualia dormientes sæpe agitant,
 delectant, angunt, terrent, in novos orbes
 rapiunt, pro morbis a medicis haberi solent:

a medicis pro morbis: quippe quæ vel prorsus desint in
by physicians as diseases: as being what either are entirely wanting in
 perfectissimo somno, aut saltem relinquunt nulla vestigia aut
the most perfect sleep, or at least leave behind no traces or
 memoriam sui.
memory of themselves.

406. Fiunt, vel propter hominem non plene sopi-
They take place, either on account of the person not being fully lulled
 tum, cui memoria et imaginatio adhuc vigent, quamvis
to sleep, to whom memory and imagination as yet are active, although
 manumissæ imperio voluntatis; vel propter quaslibet
emancipated from the controul of the will; or on account of some
 impressiones, internas vel externas, adeo validas ut faciant eum
impressions, internal or external, so powerful that they cause him
 sentire, quamvis non rumpant somnum; de quibus semi-
to perceive, although they do not break the sleep; about which the half
 somnis quodammodo judicet, et confundat eas in mirum
asleep (person) in some measure judges, and confounds them in a wonderful
 modum cum cogitationibus memoriæ et imaginationis. Enim hæc
manner with the thoughts of memory and imagination. Moreover these
 oblata suâ sponte homini inter somnum, sumuntur pro veris.
presented spontaneously to a person during sleep, are taken for true.

407. Somnia familiaria obdormiscentibus et expergiscentibus,
The dreams common to persons falling asleep and awaking,
 quamvis alioquin sanissimis, et expositis nulli irritationi, docent;
although otherwise very healthy, and exposed to no irritation, teach this;
 dira somnia quæ oriuntur ab anxietate corporis, veluti a
the horrible dreams which arise from anxiety of body, as from
 supino situ corporis, aut a ventriculo gravato multo
a supine position of the body, or from the stomach oppressed with much
 cibo et vino, docent; singularia somnia ducentia originem a
food and wine, teach it; the singular dreams drawing their origin from
 dolore cujûsvis partis, vel frigore admoto, vel inæquali et duriore
pain of any part, or cold being applied, or an uneven and harder
 lecto, vel statu genitalium organorum, vel a febribus, vel denique,
bed, or the state of the genital organs, or from fevers, or lastly,
 a variis morbis pectoris, docent. Nimirum homo, in hoc
from the various diseases of the chest, teach it. Truly a person, in this
 statu ut videtur, quærit causam sensûs quem percipit, et
state as it appears, seeks the cause of the sensation which he perceives, and
 sæpe fingit sibi absurdas et ridiculas (causas).
often imagines to himself absurd and ridiculous ones.

quippe quæ in perfectissimo somno vel prorsus desint, vel nulla saltem sui vestigia aut memoriam relinquunt (390).

406. Fiunt vel propter hominem non plene sopitum, cui memoria et imaginatio adhuc vigent, quamvis voluntatis imperio manumissæ; vel propter impressiones quaslibet, internas vel externas, adeo validas ut eum sentire faciant, quamvis non rumpant somnum; de quibus semisomnis quodammodo judicet, easque cum cogitationibus memoriæ et imaginationis mirum in modum confundat. Hæc enim sua sponte inter somnum homini oblata, neque ejus voluntati obedientes, pro veris sumuntur.

407. Docent somnia obdormiscentibus et expergiscentibus familiaria, quamvis alioquin sanissimis, et nulli irritationi expositis; docent dira somnia quæ ab anxietate corporea (186, 193) oriuntur, veluti a situ corporis supino, aut a ventriculo multo cibo et vino gravato; docent singularia somnia, a dolore partis cujûsvis, vel frigore admoto, vel lecto inæquali et duriore, vel statu genitalium organorum, vel a febribus, vel denique a variis morbis pectoris, originem ducentia. Nimirum, in hoc statu, ut videtur, homo sensus quem percipit causam quærit, et absurdas et ridiculas sæpe sibi fingit.

408. Vero sensus, quicumque fuerit, sic excitatus somnianti

But the sensation, whatever it has been, thus excited in the dreaming person
 est quam maxime vividus, scilicet in quo totus homo est,
is extremely vivid, as being that in which the whole man is,
 indivisâ attentione adhibitâ, que nullo iudicio temperante.
the undivided attention being given, and no judgment regulating it.
 Hinc, fere, nulla vis animi somniis; sed timor, mœror,
Hence, mostly, no influence of reason in dreams; but fear, grief,
 libido, demum, quicquid obtulerit se menti, statim
lust, in a word, whatever may have presented itself to the mind, immediately
 occupat eam, et rapit totum hominem.
engages it, and hurries off the whole man.

409. Somnia (sunt) fugacia et velocissima; ita ut longa series
Dreams (are) fleeting and very rapid; so that a long series
 annorum, et innumeræ res gestæ, observentur animo dormientis,
of years, and innumerable exploits, are observed by the mind of the sleeping
 spatio temporis adeo parvo ut careat nomine. Est haud
person, in a space of time so small as to want a name. It is not
 incredibile, vocem quæ jubet expergisci, sæpe dare longum
incredible, that the voice which orders to awake, often produces a long
 somnium priusquam penitus rumpat somnum.
dream before that it perfectly breaks the sleep.

410. Somnia multum reguntur consuetudine; ita ut quidam didi-
Dreams are greatly regulated by habit; so that some have
 cerint arcere omnino, alii quodammodo dirigere sua somnia,
learned to prevent altogether, others in some degree to direct their dreams.
 Inter tot absurda et ridicula nil mirum si
Among so many absurd and ridiculous (ones) it is no way wonderful if
 fuerint quædam minus inepta vel denique vera; scilicet, si
there should be some less foolish or even true; that is, if
 quis, fortasse boni iudicii, vigilans plus quam dormiens,
any (one), perhaps of sound judgment, waking more than sleeping,
 reputaverit multa secum, et præviderit probabiliora.
should reflect on many things with himself, and should foresee the more probable.

408. Sensus vero quicumque sic excitatus fuerit somnianti quam maxime vividus est, scilicet in quo homo totus est, attentione adhibita indivisa, nulloque temperante iudicio. Hinc nulla fere in somniis vis animi; sed timor, mœror, libido, quicquid demum forte menti se obtulerit, eam statim occupat, et totum hominem rapit.

409. Somnia fugacia, velocissima; ita ut longa series annorum, et res gestæ innumeræ, spatio temporis adeo parvo ut nomine careat, dormientis animo observentur. Haud incredi-

bile est, vocem quæ jubet expergisci longum sæpe prius dare somnium, quam somnum penitus rumpat.

410. Somnia multum reguntur consuetudine; ita ut quidam omnino arcere, alii sua somnia quodammodo dirigere, didicerint. Inter tot absurda et ridicula, nil mirum si quædam minus inepta, vel denique vera fuerint; scilicet si quis, fortasse boni iudicii, plus vigilans quam dormiens, multa secum reputaverit, et præviderit probabiliora.

CAP. XIV.
CHAP. XIV.

De communi et naturali motu sanguinis.
Of the common and natural motion of the blood.

411. Circuitus sanguinis occupavit proximum, et profecto, in
The circulation of the blood has occupied the next, and indeed, in
homine, que similibus animalibus, locum vix secundum peculiari
man, and similar animals, a place hardly second to the peculiar
functioni cerebri ipsiûs; scilicet, organa quæ movent sanguinem
function of the brain itself: indeed, the organs which propel the blood
habent tantum commercium cum cerebro, et motus sanguinis
have so great an intercourse with the brain, and the motion of the blood
est adeo necessarius ad excitandum, que aptandum cerebrum suis
is so necessary to excite, and fit the brain for its
muneribus, ut hæ binæ functiones vicissim ferant et petant
functions, that these two functions mutually bring and seek
subsidium, neque queat altera perfici sine ope alteriûs.
support, nor can the one be performed without the aid of the other.

412. Sanguinem moveri per totum corpus, ingens,
That the blood is circulated though the whole (of the) body, the great,
et nonnunquam lethalis, jactura ejûs, a parvo vulnere in quivis
and sometimes fatal, loss of it, from a small wound in any
parte corporis, docet.
part of the body, teaches.

413. Cursus sanguinis, in adulto homine, absolvitur hac
The circulation of the blood, in an adult person, is performed in this
ratione. Sanguis, redux ab omnibus partibus corporis, transit
way. The blood, returning from all parts of the body, passes
in sinum venosum et dextram auriculam cordis; distendit,
into the sinus venosus and right auricle of the heart; distends,
stimulat, et ciet hanc ad contractionem: auricula contrahens se
stimulates, and excites this to contraction: the auricle contracting itself
tradit sanguinem dextro ventriculo: vero hic distentus et irritatus
delivers the blood to the right ventricle: but this distended and irritated
pari ratione, contrahit se, que impellit sanguinem in pulmonalem
in like manner, contracts itself, and drives the blood into the pulmonary
arteriam, ramis cujûs transit per utrumque pulmonem.
artery, by the branches of which it passes through both lungs.

CAP. XIV.—*De sanguinis motu communi et naturali.*

411. Proximum peculiari ipsius cerebri functioni, et profecto, in homine similibusque animalibus, vix secundum locum, occupavit sanguinis circuitus; scilicet organa quæ sanguinem movent tantum cum cerebro commercium habent, et sanguinis motus, ad excitandum, suisque muneribus aptandum cerebrum, adeo necessarius est, ut hæ binæ functiones subsidium ferant et petant vicissim, neque altera sine alterius ope perfici queat.

412. Sanguinem per totum corpus moveri,

docet ingens, vel lethalis nonnunquam, ejus jactura, a parvo vulnere in quivis corporis parte.

413. Cursus sanguinis in adulto homine hac ratione absolvitur. Sanguis ab omnibus corporis partibus redux, in sinum venosum et auriculam dextram cordis transit; hanc distendit, stimulat, et ad contractionem ciet: auricula se contrahens, sanguinem ventriculo dextro tradit: hic vero, pari ratione distentus et irritatus, se contrahit, sanguinemque in arteriam pulmonalem impellit, cujus ramis per utrumque pulmonem transit. Ab eo reducit venis pulmonalibus in sinum et auriculam sinistram, cujus

Reducitur ab eo (pulmone) pulmonibus venis in sinum
It is brought back from it (them) by the pulmonary veins into the sinus
 et sinistram auriculam, contractione cuius propellitur in
and the left auricle, by the contraction of which it is propelled into
 ventriculum ejusdem lateris. Hoc, demum, contrahente se, sanguis
the ventricle of the same side. This, indeed, contracting itself, the blood
 ejicitur insigni vi, et immittitur in aortam, innumeris
is ejected with great force, and is sent into the aorta, by the numberless
 ramis cuius defertur ad omnes partes corporis, reducendus
branches of which it is conveyed to all parts of the body, to be brought back
 denuo per sodales venas in cavam, et dextram auriculam
again by the accompanying veins into the cava, and the right auricle
 cordis.
of the heart.

414. Valvæ in corde, positæ et in ostiis arteriarum et
The valves in the heart, placed both in the mouths of the arteries and
 in venis, prohibentes reditum sanguinis, ostendunt hunc
in the veins, preventing the return (reflux) of the blood, prove this
 cursum; ligaturæ impositæ venis vel arteriis quæ faciunt has
course; ligatures put on the veins or arteries which cause the latter
 tumere citra, illas ultra, ligaturam, quoque docent; denique,
to swell on this side, the former beyond, the ligature, also teach it: lastly,
 hic cursus sanguinis facile conspicitur in pellucidis animalibus.
this course of the blood is easily seen in pellucid animals.

415. Vero multum abest ut singuli sacculi cordis, contrahant
But it is far from that the several cavities of the heart, contract
 sese hoc ordine; contractio utriusque auriculæ perficitur
themselves in this order; the contraction of both auricles is performed
 eodem tempore, utroque ventriculo tunc relaxato; et hi
at the same time, both ventricles being then relaxed; and these
 rursus contrahunt se eodem tempore, auriculis simul
again contract themselves at the same moment, the auricles at the same time
 relaxatis.
being relaxed.

416. In moribundis sinister ventriculus primo quiescit, deinde auricula
In dying persons the left ventricle first ceases, then the auricle
 ejusdem lateris; scilicet, sanguine quasi, ob defectum
of the same side; that is, the blood as it were, on account of want
 spiritus, effæto et forsam jam
of air, being barren (devoid of stimulating properties) and perhaps now
 transmissio parcius per pulmonem: postea dexter ventriculus,
transmitted more sparingly through the lungs: afterwards the right ventricle,

contractione in ventriculum ejusdem lateris propellitur. Hoc demum se contrahente, sanguis insigni vi ejicitur, et in aortam immittitur, cuius innumeris ramis ad omnes partes corporis defertur, per venas sodales in cavam et auriculam dextram cordis denno reducendus.

414. Hunc cursum ostendunt valvæ in corde, et in ostiis arteriarum et in venis positæ, reditum sanguinis prohibentes; docent quoque ligaturæ venis vel arteriis impositæ, quæ has citra, illas ultra ligaturam tumere faciunt: denique, hic cursus sanguinis in pellucidis animalibus facile conspicitur.

415. Multum vero abest ut hoc ordine singuli cordis sacculi sese contrahant; utriusque auriculæ contractio eodem tempore perficitur, relaxato tunc utroque ventriculo: et hi rursus eodem tempore se contrahunt, auriculis simul relaxatis.

416. In moribundis, ventriculus sinister primo quiescit, deinde auricula ejusdem lateris; sanguine scilicet ob defectum spiritus quasi effæto, et parcius forsam per pulmonem jam transmissio: postea ventriculus dexter, ultima auricula dextra desinit contrahere. Hinc aliquando fit, ut sanguis per magnas cavas, as-

dextra auricula ultima desinit contrahere. Hinc aliquando fit, the right auricle last(ly) ceases to contract. Hence it sometimes happens, ut sanguis cogatur, aliquatenus, redire per magnas that the blood is forced, in some measure, to come back through the great cava, ascendentem et descendentem; et efficiat levem motum in iis. cava, ascending and descending; and produces a slight motion in them.

417. In fœtu, nempe, qui nondum traxerit spiritum, sanguis In the fœtus, that is, which has not yet drawn in the air, the blood legit alias et longe diversas vias: imprimis, magna pars sanguinis chooses other and far different ways: first of all, a great part of the blood pulmonalis arteriæ aversa a pulmone (qui nimirum, of the pulmonary artery turned away from the lungs (which without doubt, nondum evolutus, nequit accipere tantum penum sanguinis) transit not yet developed, cannot receive so great a store of blood) passes per canalem arteriosum in aortam; tum magna pars through the canalis (ductus) arteriosus into the aorta; then a great part sanguinis aortæ defertur per umbilicales arterias ad placentam; of the blood of the aorta is carried through the umbilical arteries to the placenta, redux inde per umbilicalem venam, transit partim in cavam, returning thence through the umbilical vein, it passes partly into the cava, partim, per ductum venosum in jecur, et non nisi altero partly, through the ductus venosus into the liver, and not until a second circuitu per hoc viscus absoluto, redit tandem in circulation through this viscus being performed, does it return at length into cavam et dextram auriculam cordis. the cava and right auricle of the heart.

418. Arteriæ et venæ pariter referunt arborem, truncus cujus Arteries and veins alike resemble a tree, the trunk of which (divitur) in magnos ramos, hi dividantur in minores, (is divided) into large branches, these (again) are divided into less, minores in minutissimos ramulos, que detegendos nullo the less into exceedingly minute little branches, and to be detected in no modo sensibus: et semper hac lege, ut singuli rami way by the senses: but always by this law, that each (of the) branches (are) minores trunco unde orluntur, vero omnes sumpti simul less than the trunk whence they arise, but all taken together sint nonnihil capaciores eodem (trunco). are somewhat more capacious than the same.

419. Minimi ramuli arteriarum (majores nunquam) reflexi The smallest branches of the arteries (the larger never) reflected fiunt venæ; vel immittuntur in venas hujusmodi jam formatas, become veins; or are inoculated with veins of this kind already formed,

cedentem et descendentem, aliquatenus redire cogatur, et levem in iis motum efficiat.

417. In fœtu, qui nempe nondum spiritum traxerit, alius et longe diversas vias legit: imprimis magna pars sanguinis arteriæ pulmonalis, a pulmone aversa (nimirum qui nondum evolutus tantum penum sanguinis accipere nequit) per canalem arteriosum in aortam transit; tum magna pars sanguinis aortæ per arterias umbilicales ad placentam defertur; iude per venam umbilicalem redux, partem in cavam, per ductum venosum, partim in jecur transit, et non nisi altero per hoc viscus circuitu abso-

luto, tandem in cavam et auriculam cordis dextram redit.

418. Arteriæ et venæ pariter arborem referunt, cujus truncus in magnos ramos, hi in minores, minores in minutissimos, sensibusque nullo modo detegendos ramulos, dividantur: et hac semper lege, ut singuli rami trunco unde oriuntur minores, omnes vero simul sumpti, eodem nonnihil capaciores sint.

419. Minimi arteriarum ramuli (nunquam majores) reflexi, venæ fiunt; vel in venas hujusmodi jam formatas per anastomosis, ut vocatur, immittuntur: venæque minimæ, alias

per *anastomosin* ut vocatur; et minimæ venæ, accipientes alias
 by *anastomosis* as it is called; and the smallest veins, receiving others
 atque alias, paulatim grandescunt, et tandem formant *cavam*.
 and others, gradually enlarge, and at length form the cava.

420. At est alia fabrica in abdomine, et longe diversus
 But there is another mechanism in the abdomen, and a widely different
 reditus sanguinis per venas observatur. Nimirum, sanguis,
 return of the blood through the veins is observed. That is to say, the blood,
 redux ab omnibus visceribus quæ inserviunt concoctioni
 returning from all the viscera which subserve to the digestion
 cibi, ventriculo, intestinis, mesenteria omento, pancreate, splene,
 of the food, from the stomach, intestines, mesentery omentum, pancreas, spleen,
 defertur in magnum vas, scilicet, venam portarum: quæ, denuo,
 is carried into a large vessel, namely, the vena portarum, (æ): which, again,
 more arteriæ, diffusa per jecur, defert eo
 after the manner of an artery, distributed through the liver, conveys thither
 ingentem copiam sanguinis: qui tandem, postquam inservierit
 a great abundance of blood: which at length, after that it has subserved
 secretioni fellis redit per *cavam hepaticam* in
 to the secretion of the gall (bile) returns by the cava hepatica into
 magnam *cavam* et ad cor.
 the great cava and to the heart.

421. In capite quoque reditus sanguinis quodammodo singularis
 In the head also a return of the blood somewhat peculiar
 observatur. Imprimis, magnæ et frequentissimæ conjunctiones, seu
 is observed. First of all, great and very frequent unions, or
 anastomoses, ut vocantur, sunt ibi; et quidem inter magna
 anastomoses, as they are called, are there; and even between the great
 vasa; et minores venæ fundunt suum sanguinem fere statim
 vessels; and the smaller veins pour their blood almost immediately
 in magna vasa, quæ dicuntur sinus, et fere
 (directly) into the great vessels, which are called sinuses, and are mostly
 inseruntur retrogradæ iis.
 inserted retrograde in them.

422. Denique, est alia fabrica, interdum alius cursus
 Indeed, there is a different mechanism, sometimes a different course
 sanguinis, in quibusdam organis quæ debent interdum erigi,
 of the blood, in certain organs which ought occasionally to be erected,
 virili pene, papillæ muliebris mammæ, et, ut videtur, nonnullis
 the male penis, the nipple of the female breast, and, as it appears, in some
 partibus genitalium organorum muliebris sexûs; nimirum, qui
 parts of the genital organs of the female sex; that is to say, which

atque alias accipientes, paulatim grandescunt, et tandem *cavam* formant.

420. At in abdomine alia est fabrica, et longe diversus sanguinis reditus per venas observatur. Sanguis nimirum ab omnibus visceribus quæ cibi concoctioni inserviunt, ventriculo, intestinis, mesenteria, omento, pancreate, splene, redux, in magnum vas defertur, venam scilicet portarum: quæ denuo arteriæ more, per jecur diffusa, iugentem sanguinis copiam eo defert: qui tandem, postquam fellis secretioni inservierit, per *cavam hepaticam*, in magnam *cavam*, et ad cor redit.

421. In capite quoque sanguinis reditus quodammodo singularis observatur. Magnæ imprimis et frequentissimæ ibi conjunctiones, seu anastomoses, ut vocantur, sunt; et quidem inter magna vasa: venæque minores statim fere suum sanguinem in magna vasa, quæ dicuntur sinus, fundunt, et iis fere retrogradæ inseruntur.

422. Denique, in organis quibusdam quæ interdum erigi debent, pene virili, papilla mammæ muliebris, et partibus, ut videtur, nonnullis genitalium organorum muliebris sexus, alia fabrica, alius interdum sanguinis

(sanguis) effusus in quasdam cellulas reticulatæ telæ (fabricatas
effused into certain cells of the reticulated tissue (constructed
 peculiari modo a Naturâ in hunc finem,) scilicet, delatus,
in a peculiar manner by Nature for this purpose,) that is, conveyed,
 copiosior per arterias agentes insolito moreo,
more copiously (adverbially) by the arteries acting in an unusual manner,
 quam reducitur per venas, quas nonnulli putarunt
than it is brought back by the veins, which some have supposed
 constringi quodammodo, et comprimi, distendit eas partes,
to be constricted in some manner, and to be compressed, distends those parts,
 erigit, que reddit aptas suis muneribus; et demum,
erects them, and renders them fit for their functions; and at length,
 resumptus, istis cellulis contractis, reducitur ad
being taken up again, by those cells being contracted, is brought back to
 cor suo tempore.
the heart in its proper time.

423. Autem vires quæ expediunt cursum sanguinis sunt,
But the powers which expedite the circulation of the blood are,
 imprimis, contractio cordis, quæ impellit sanguinem in
first of all, the contraction of the heart, which drives the blood into
 arterias insigni velocitate: vero multum abest ut hæc
the arteries with remarkable velocity: but it is far from that this
 vis, quamvis probe sentiatur usque ad extremas partes corporis,
force, although it is sensibly felt as far as the extreme parts of the body,
 sufficiat ad promovendum motum sanguinis: pulsus que calor
can suffice to maintain the motion of the blood: the pulse and heat
 deficientes in brachio affecto paralyti docent.
failing in an arm affected with paralysis prove (this).

424. Præterea actio arteriarum juvat, non modo insigni
Moreover the action of the arteries assists, not only by their great
 vi resiliendi, sed propriâ musculosâ vi contrahentium se:
elasticity, but their own muscular power of contracting themselves:
 unda sanguinis expulsa e corde, propellit sanguinem, qui
the wave of blood driven out from the heart, propels the blood, which
 fuit jam in arteriis, et simul, quoniam est (proprium)
was already in the arteries, and at the same time, because it is the property
 fluidi premere quoquoersum, distendit arteriam ipsam. Hæc
of a fluid to press on all sides, distends the artery itself. This
 distentio est pulsus quem percipimus digito. Vero arteriæ
distention is the pulse which we feel with the finger. But the arteries
 distentæ hoc modo, cientur ad contractionem non secus ac
distended in this manner, are excited to contraction in like manner as

cursus est; nimirum qui in cellulas quasdam telæ reticulatæ (peculiari modo a Natura in hunc finem fabricatas) effusus, copiosior scilicet per arterias insolito more agentes delatus, quam per venas, quas nonnulli quodammodo constringi et comprimi putarunt, reducitur, eas partes distendit, erigit, suisque muneribus aptas reddit; et demum, suo tempore, contractis paulatim istis cellulis, in venas resumptus, ad cor reducitur.

423. Vires autem quæ sanguinis cursum expediunt, sunt, cordis imprimis contractio, quæ sanguinem insigni velocitate in arterias im-

pellit: multum vero abest ut hæc vis, quamvis ad extremas usque corporis partes probe sentiatur, sufficiat ad sanguinis motum promovendum: docent pulsus calorque deficientes in brachio paralyti affecto.

424. Juvat præterea actio arteriarum, non modo insigni vi resiliendi, sed vi propria musculosa se contrahentium: unda sanguinis e corde expulsa, sanguinem, qui jam in arteriis fuit, propellit, et simul, quoniam fluidi est quoquoersum premere, arteriam ipsam distendit. Hæc distentio pulsus est, quem digito percipimus. Arteriæ vero hoc modo distentæ

cor ipsum: que contractio earum absolvitur tantâ
the heart itself: and the contraction of them is performed with so great
 velocitate, ut omnino exiguum intervallum distinguatur
velocity, that an exceedingly small interval (only) can be distinguished
 inter ictum cordis, vel carotidis arteriæ quæ est proxima
between the stroke of the heart, or of the carotid artery which is next (to it)
 et pulsum in remotissimâ parte corporis.
and the pulse in the remotest part of the body.

425. Fabrica arteriæ ipsius, manifeste instructæ musculosâ
The mechanism of the artery itself, evidently furnished with a muscular
 tunicâ, et quoque multa experimenta instituta in vivis animalibus;
coat, and also many experiments instituted in living animals;
 ubi arteriæ, mechanico acri admoto, (nam fidendum est
when the arteries, a mechanical irritant being applied, (for we must trust
 parum chemico veneno,) validissime contraxerunt se,
little to a chemical poison,) have very powerfully contracted themselves,
 satis demonstrant hanc actionem arteriarum: inflammatio vel
abundantly prove this action of the arteries: inflammation either
 orta has suâ sponte, vel excitata arte, veluti
that has arisen (arising) of its own accord, or excited by art, as
cantharidibus, sinapi, aut similibus, applicatis ad cutem, præ
by cantharides, mustard, or the like, applied to the skin, before
 omnibus docet. Neque est alia ratio
all things (more than any other) proves (it). Nor is there any other reason
 cuiusvis secretionis auctæ præter solitum, dum motus
of any secretion (being) increased beyond usual, whilst the motion
 sanguinis per reliquum corpus parum vel nihil mutatur.
of the blood through the rest (of) the body is little or not at all changed.

426. Contractio arteriæ semper propellit sanguinem a
The contraction of the artery always propels the blood from
 corde ad remotiores ramulos; imprimis quia semilunares
the heart towards the more remote branches; chiefly because the semilunar
 valvæ sitæ ad ostium utriusque magnæ arteriæ penitus claudunt
valves placed at the mouth of each great artery totally close up
 viam quâ rediret in cor; igitur oportet ineat
the passage by which it could return into the heart; therefore it must enter
 viam quâ porta datur: quin et arteria ipsa contracta
the course where a passage is afforded: moreover the artery itself contracted
 primo prope cor, (quamvis hæc contractio velocissime propagetur
first near the heart, (although this contraction is most rapidly propagated
 ad minutissimos ramos,) quodammodo dirigit cursum sanguinis,
to the minutest branches,) in some measure directs the course of the blood,

ad contractionem cientur, non secus ac ipsum cor: earumque contractio tanta velocitate absolvitur, ut exiguum omnino distinguatur intervallum inter ictum cordis, vel quæ proxima est arteriæ carotidis, et pulsum in remotissima corporis parte.

425. Hanc arteriarum actionem satis demonstrant, ipsius arteriæ fabrica, manifeste musculosa tunica instructæ, et multa quoque experimenta in vivis animalibus instituta; ubi arteriæ, admoto acri mechanico (nam veneno chemico parum fidendum est) validissime se contraxerunt: docet, præ omnibus inflammatio vel sua sponte orta, vel arte excitata, veluti

applicatis ad cutem cantharidibus, sinapi, aut similibus. Neque alia ratio est secretionis cuiusvis præter solitum auctæ, dum sanguinis motus per reliquum corpus parum vel nihil mutatur.

426. Contractio arteriæ sanguinem semper a corde ad remotiores ramulos propellit; imprimis, quia valvæ semilunares, ad ostium magnæ arteriæ utriusque sitæ, viam penitus claudunt qua in cor rediret; oportet igitur qua datur porta viam lueat: quin et ipsa arteria prope cor primo contracta (quamvis hæc contractio velocissime ad minutissimos ramos propagetur) cursum sanguinis quodammodo dirigit, et

et fere fungitur munere valvæ, scilicet reditu ejus
and almost performs the office of a valve, that is by the return of it
 præcluso, libero progressu permissio.
being precluded, the free advance being permitted.

427. Sanguis impulsus his viribus, transit in venas
The blood impelled by these powers, passes into the veins
 reduendus ad cor. Nondum constat de fabricâ
to be brought back to the heart. It is not yet agreed concerning the structure
 aut musculosâ vi harum, nisi in magnis truncis prope cor.
or muscular power of these, unless in the great trunks near the heart.

Itaque sanguis videtur moveri in iis partim vi a tergo,
Therefore the blood seems to be moved in them partly by the vis a tergo
 scilicet quam habuit a corde et
(the force from behind), that is which it had (received) from the heart and
 arteriis; partim contractione vicinorum aut incumbentium
arteries; partly by the contraction of the neighbouring or incumbent
 musculorum qui comprimant venas: vero hæ, præsertim in
muscles which may compress the veins: but these, especially in
 musculosis partibus, instruuntur valvis, quæ prohibent reditum
muscular parts, are furnished with valves, which prevent the return
 sanguinis ad arterias, permittunt progressum ejus ad cor.
of the blood to the arteries, allow the advance of it to the heart.

428. Motus sanguinis incitatus in mirum modum exercitatione,
The motion of the blood increased in a wonderful degree by exercise,
 docet, quantum contractio musculorum valeat ad expediendum
shews, how much the contraction of the muscles can do to accelerate
 et incitandum cursum sanguinis: languescens
and excite the circulation of the blood: it becoming languid
 ignaviâ docet idem, sæpe non sine gravi incommodo aut
from idleness proves the same, often not without great inconvenience or
 periculo; quamvis homines quam maxime dediti ignaviæ, vel
danger; although men however much addicted to sloth, or
 etiam dormientes semper exercent nonnihil musculosi motus.
even (while) sleeping always perform some little (of) muscular motion.

429. Hinc redditur ratio multorum morborum, et remediorum
Hence is rendered an explanation of many diseases, and of the remedies
 quibus utimur ad sanandos istos morbos. Hinc intelligitur cur
which we use to cure those diseases. Hence is understood why
 quies corporis sit adeo necessaria in plerisque acutis morbis; cur in
rest of body is so necessary in most acute diseases; why in
 tot aliis crebra exercitatio (est) optimum remedium.
so many others frequent exercise is the best remedy.

fere valvæ munere fungitur, præcluso scilicet reditu ejus, permissio libero progressu.

427. His viribus impulsus, sanguis in venas transit, ad cor reduendus. Nondum satis constat de harum fabrica, aut vi musculosa, nisi in magnis truncis prope cor. Videtur itaque sanguis in iis moveri, partim vi a tergo, scilicet quam a corde et arteriis habuit; partim contractione musculorum vicinorum aut incumbentium, qui venas comprimant: hæ vero, præsertim in partibus musculosis, valvis instruuntur, quæ reditum sanguinis ad arterias prohibent, progressum ejus ad cor permittunt.

428. Quantum ad cursum sanguinis expediendum et incitandum valent contractio musculorum, docet motus sanguinis mirum in modum exercitatione incitatus: docet idem ignavia languescens, non sine gravi sæpe incommodo aut periculo; quamvis homines, quam maxime ignaviæ dediti, vel etiam dormientes, nonnihil semper motus musculosi exercent.

429. Hinc ratio redditur multorum morborum, et remediorum quibus ad istos morbos sanandos utimur. Hinc intelligitur, cur in plerisque morbis acutis corporis quies adeo necessaria sit; cur in tot aliis crebra exercitatio optimum remedium.

430. Postremo, cursus sanguinis neque per pulmones, neque
Lastly, the circulation of the blood neither through the lungs, nor
 sane per reliquum corpus, ne quidem per sinistrum latus
indeed through the rest of the body, not even through the left side
 cordis ipsiûs, potest fieri sine respiratiõe: ratio
of the heart itself, can take place without respiration: the explanation
 cuiûs est reddenda suo loco.
of which is to be given in its proper place.

431. Motus sanguinis, velocissimus prope cor, evadit multo
The motion of the blood, quickest near the heart, becomes much
 lentior in minoribus et remotis ramis arteriarum. Omnigena
slower in the smaller and remote branches of the arteries. Every kind (of)
 frictio confert huc, tenacitas sanguinis ipsiûs, adhæsiõ ejûs
friction conduces to this, the tenacity of the blood itself, the adhesion of it
 ad parietes vasorum, pondus partium dimotarum et non
to the sides of the vessels, the weight of the parts removed and not
 perfecte resilientium: sed, præ omnibus, motus sanguinis
perfectly elastic: but, before all (other causes), the motion of the blood
 fit lentior propter auctam capacitatem arteriæ, prout
becomes slower on account of the increased capacity of the artery, according as
 fuerit divisa in ramos. Et profecto omnes aliæ causæ
it shall be divided into branches. And truly all other causes
 retardationis redeunt ad hanc, nimirum quæ est mensura
of retardation return to this, as being that which is the measure
 totiûs retardationis, dummodo nulla obstructio fuerit usquam.
of the whole retardation, provided no obstruction shall be any where.
 Nam quicquid suæ velocitatis sanguis amisisset per alias
For whatever of its velocity the blood might have (had) lost by other
 causas retardationis, contractiones arteriarum potuissent
means of retardation, the contractions of the arteries would have been able
 restituere et compensare.
to restore and compensate.

432. Sanguis fluit lentius, quo longius distat a corde,
The blood flows more slowly, the farther it is distant from the heart,
 ob hanc causam, pari ratione, ac in arteriis, sic in
on this account, for a similar reason, as in the arteries, so in
 venis, quo propius accedit ad cor eo velocius movetur,
the veins, the nearer it approaches to the heart the more quickly it is moved,
 vero motus sanguinis est multo lentior in venis quam in
but the motion of the blood is by much slower in the veins than in

430. Postremo, sanguinis cursus neque per pulmones, neque sane per reliquum corpus, ne quidem per ipsius cordis latus sinistrum, fieri potest sine respiratiõe: cuius ratio suo loco reddenda est.

431. Motus sanguinis prope cor velocissimus, in minoribus et remotis ramis arteriarum, multo lentior evadit. Frictio omnigena huc confert, tenacitas ipsius sanguinis, adhæsiõ ejus ad parietes vasorum, pondus partium dimotarum, et non perfecte resilientium: sed, præ omnibus, lentior fit sanguinis motus, propter auctam arteriæ capacitatem, prout ipsa

in ramos divisa fuerit (418). Et profecto omnes aliæ retardatiõis causæ ad hanc redeunt, nimirum quæ totiûs retardatiõis mensura est, dummodo nulla usquam obstructio fuerit. Nam quicquid per alias retardatiõis causas velocitatis suæ amisisset sanguis, arteriarum contractiones restituere et compensare potuissent.

432. Pari ratione ac in arteriis, ob hanc causam, lentius fluit, quo longius distat a corde sanguis; sic in venis, quo propius ad cor accedit, eo velocius movetur (418). Sanguinis vero motus in venis, quam in arteriis, multo

arteriis, nimirum quæ omnes sumptæ simul sunt capaciores,
the arteries, as being which all taken together are more capacious,
 duplo vel triplo, arteriis.
by double or triple, than the arteries.

433. Denique pondus sanguinis ipsius nunc incitat, nunc
Indeed the weight of the blood itself one time quickens, at another
 retardat ejus impetum, secundum situm corporis, vel
retards its impetus, according to the position of the body, or
 cuiusvis partis ejus; quod profecto est haud levis momenti, tum
of any part of it; which truly is of no small moment, as well
 ad inducendos tum ad sanandos morbos.
to induce as to cure diseases.

434. Arteriæ terminantur variis modis: vel fiunt reflexæ
Arteries are terminated in various ways: either they become reflected
 venæ, quæ accipiunt omnes partes, tam crassas quam tenues,
veins, which receive all parts, as well the thick as the thin,
 sanguinis; vel dividuntur in ramulos adhuc minores quam
of the blood; or are divided into branches still smaller than (those)
 qui possint admittere crassiores particulas, et ideo tantum
which can admit the thicker particles, and therefore only
 vehant pellucidum laticem, que demum habeant suas sodales venas;
carry a pellucid liquor, and finally have their accompanying veins;
 vel desinunt in exhalantia, secermentia, excernentia vasa.
or terminate in exhalant, secreting, excreting vessels.

435. Exhalantia vasa fundunt tenuem partem sanguinis in
The exhalant vessels pour out the thin part of the blood into
 omnia cava organa corporis, quæ (fusione?) hæc, tum
all the hollow organs of the body, by which these, as well
 magna, veluti abdomen, thorax, caput, tum quoque parva,
the great, as the abdomen, thorax, head, as also the small,
 veluti cellulæ reticulatæ telæ, ubique corporis semper
as the cells of the reticulated tissues, wherever of the body are always
 madent.
moist.

436. Autem excernentia vasa assidue exhalant tenuissimam, fere
But the excreting vessels constantly exhale the thinnest, almost
 aquosam partem sanguinis; cum paucillo animalis olei, et haud
watery part of the blood; with a little (of) animal oil, and a no
 exigua parte carbonici acidi, que fortasse allarum rerum, a cute
small portion of carbonic acid, and perhaps of other things, from the skin
 et pulmone, natura quarum hactenus minus explorata est.
and lungs, the nature of which hitherto has not been examined.

lentior est: nimirum, quæ omnes simul sumptæ arteriis duplo vel triplo capaciores sunt.

433. Denique, pondus ipsius sanguinis impetum ejus nunc incitat, nunc retardat, secundum corporis, vel partis ejus cuiusvis, situm; quod profecto haud levis momenti est, tum ad inducendos, tum ad sanandos morbos.

434. Arteriæ variis modis terminantur: vel reflexæ venæ fiunt, quæ omnes sanguinis partes, tam crassas quam tenues, accipiunt; vel in minores adhuc ramulos dividuntur, quam qui crassiores particulas admittere possint, et ideo pellucidum tantum laticem vehant, suas-

que demum venas sodales habeant; vel in vasa desinunt exhalantia, secermentia, excernentia.

435. Exhalantia vasa tenuem sanguinis partem in omnia cava corporis organa fundunt: quæ hæc, tum magna, veluti abdomen, thorax, caput, tum quoque parva, veluti cellulæ telæ reticulatæ ubique corporis, semper madent.

436. Excernentia autem vasa tenuissimam sanguinis partem, fere aquosam, cum paucillo olei animalis, et parte haud exigua acidi carbonici, aliarumque fortasse rerum quarum natura minus hactenus explorata est, a cute et pulmone assidue exhalant.

437. Demum, secernentia vasa continua cum arteriis, in certis
In fine, the secerning vessels continuous with the arteries, in certain
 organis corporis, exhalant, non modo certas partes sanguinis
organs of the body, exhale, not only certain parts of the blood
 detractas a reliquâ massâ, sed quoque mutant has in
drawn off from the rest (of) the mass, but also change these in
 mirum modum, et convertunt in fere aliam naturam.
a wonderful manner, and convert them into an almost different nature.
 Vero postea erit locus dicendi de his, quum
But hereafter there will be an opportunity of speaking of these, when
 agendum erit (nobis) de secretione et excretione.
we shall have to treat of secretion and excretion.

438. Tenuior pars sanguinis, quæ effunditur in varia
The thinner part of the blood, which is poured out into the various
 cava organa corporis, assidue resorbetur ex iis,
hollow organs (cavities) of the body, is continually taken up again from them,
 et denuo reducitur ad cor, ope resorbentium vel
and is again brought back to the heart, by means of absorbing or
 lymphaticorum vasorum ut vocantur, quæ nascentia ex fere
lymphatic vessels as they are called, which arising from almost
 omni parte corporis, sive internâ sive externâ, veluti cute
every part of the body, whether internal or external, as the skin
 sæpe repentia prope magna vasa quæ vehunt sanguinem, tandem
often creeping near the large vessels which carry the blood, at length
 desinunt in receptaculum chyli, aut thoracicum ductum, aut demum
terminate in the receptaculum chyli, or thoracic duct, or finally
 subclavianam venam ipsam. Ad hoc genus vasorum quoque pertinent
the subclavian vein itself. To this kind of vessels also belong
 quæ vocantur lactea, scilicet, quæ orientia ab intestinis, que
what are called lacteal, that is, which arising from the intestines, and
 repentia per mesenteriam, vehunt nutrimentum in sanguinem.
creeping through the mesentery, carry the nutriment into the blood.

439. Omnia resorbentia vasa, tum lactea, tum quæ vocantur
All the absorbing vessels, as well lacteal, as what are called
 lymphatica, vel hiantia, vel pendula in cava
lymphatic, either gaping (open mouthed), or hanging down into the cavities
 unde oriuntur, hauriunt suos humores, ut videtur, quâdam
whence they arise, suck up their fluids, as it seems, by a certain
 vi, qualis contingit capillaribus tubis: enim, neque est ulla
power, such as belongs to capillary tubes: moreover, neither is there any
 vis a tergo quâ impleantur: neque possunt impleri a
vis a tergo by which they can be filled: nor can they be filled from

437. Secernentia demum vasa cum arteriis
 continua, in certis corporis organis, non modo
 certas partes sanguinis exhalant, a reliqua
 massa detractas, sed has quoque mirum in
 modum mutant, et in aliam fere naturam
 convertunt. De his vero postea locus erit di-
 cendi, quum de secretione et excretionis agen-
 dum erit.

438. Pars tenuior sanguinis, quæ in varia
 cava corporis organa effunditur, assidue ex iis
 resorbetur, et ad cor denuo reducitur, ope va-
 sorum resorbentium, vel lymphaticorum, ut vo-
 cantur, quæ ex omni fere corporis parte, sive
 interna sive externa, veluti cute, nascentia,

prope magna vasa quæ sanguinem vehunt
 sæpe repentia, tandem in receptaculum chyli,
 aut ductum thoracicum, aut demum venam ip-
 sam subclavianam, desinunt. Ad hoc quoque ge-
 nus vasorum pertinet quæ vocantur lactea,
 scilicet quæ ab intestinis orientia, perque me-
 senteriam repentia, nutrimentum in sanguinem
 vehunt.

439. Vasa resorbentia omnia, tum lactea, tum
 quæ vocantur lymphatica, vel hiantia, vel pen-
 dula in cava unde oriuntur, humores suos hau-
 riuunt, ut videtur, vi quadam, qualis tubis ca-
 pillaribus contingit: neque enim vis ulla a
 tergo est qua impleantur, neque tali vi arte

propriis cavis, veluti a thorace vel intestinis, tali vi
their own cavities, for instance from the thorax or intestines, by such a power
 admotâ arte. Tamen musculosa vis resorbentium vasorum et
applied by art. However the muscular power of the absorbing vessels and
 qualiscunque pressura accideret ipsis, juvat motum lymphæ
whatever sort (of) pressure may happen to them, assists the motion of the lymph
 vel chyli quem continent. Nam plerumque, nullus reditus datur
or chyle which they contain. For generally, no return is permitted
 lymphæ, propter innumeras valvas quibus vasa
to the lymph, on account of the numberless valves with which the vessels
 ipsa scatent.
themselves abound.

440. Vasa hujusmodi quoque, habent innumeras conglobatas glandulas
Vessels of this sort also, have innumerable conglobate glands
 quas subeunt, et revera videntur, saltem ex maximâ parte,
which they enter, and truly seem, at least for the greatest part,
 formare: tamen, quidam nervosi ramuli adeunt singulas earum, et
to form: however, some nervous twigs go to each of them, also
 vasa vehentia sanguinem; unde sensus et irritabilis vis, et
vessels carrying blood; whence sensibility and irritable power, and

ideo aliquando inflammatio (iis sunt). Hæ glandulæ sunt admodum
consequently sometimes inflammation. These glands are very

numerosæ in quibusdam partibus corporis, veluti in inguine, axillâ,
numerous in certain parts of the body, as in the groin, axilla,
 mesenterîâ.
mesentery.

441. Usus earundem (partium) parum notus: dicuntur fabricare,
The use of these same parts is little known: they are said to fabricate,
 et quasi tornare, quasdam albidas particulas, quales reperiuntur
and as it were fashion, certain whitish particles, such as are found
 in rubris vesiculis sanguinis: sed hoc est minus certum.
in the red vesicles of the blood: but this is less certain.

442. Hæ conglobatæ glandulæ sæpe obstruuntur, et tument in
These conglobated glands often are obstructed, and swell to
 ingentem molem, plerumque ab aliquo acri delato ad ipsas,
a very great size, oftentimes from some acrid (thing) conveyed to them,
 interdum et fortasse ab aliis causis minus cognitis; ut in strumis
sometimes also perhaps from other causes less known; as in struma
 vel scrofulâ, ut vocatur, cuius morbi videntur esse primaria vel
or scrofula, as it is called, of which disease they seem to be the primary or
 saltem frequentissima sedes. Sed nihil certi constat
at least the most frequent seat. But nothing (of) certain is established

admotâ, a propriis cavis, veluti a thorace vel intestinis, impleri possunt. Juvat tamen motum lymphæ, vel chyli quem continent, vasorum resorbentium vis musculosa, et pressura qualiscunque ipsis accideret. Nam nullus plerumque datur reditus lymphæ, propter innumeras quibus vasa ipsa scatent valvas.

440. Hujusmodi vasa quoque innumeras glandulas conglobatas habent, quas subeunt, et revera, maxima saltem ex parte, formare videntur: adeunt tamen singulas earum ramuli quidam nervosi, et vasa sanguinem vehentia; unde sensus et vis irritabilis, et ideo inflam-

matio aliquando. Hæ glandulæ in quibusdam corporis partibus numerosæ admodum sunt, veluti in inguine, axilla, mesenteria.

441. Usus earundem parum notus: dicuntur particulas quasdam albidas quasi fabricare et tornare, quales in vesiculis rubris sanguinis reperiuntur: sed hoc minus certum est.

442. Sæpe obstruuntur hæ glandulæ conglobatæ, et in ingentem molem tument, plerumque ab acri aliquo ad ipsas delato, interdum fortasse et ab aliis causis minus cognitis; ut in strumis, vel scrofula ut vocatur, cuius morbi primaria vel frequentissima saltem sedes vi-

de naturâ aut origine, ne quidem de præsentia acrimoniæ
concerning the nature or origin, not even of the presence of acrimony
 in initio hujus morbi, cum glandulæ primo tument, quamvis
in the beginning of this disease, when the glands first swell, although
 non sit dubium plurimum acrimoniæ gigni, et fortasse
it cannot be doubtful that a great deal of acrimony is generated, and perhaps
 diffundi per totum corpus, his diu obstructis,
is diffused through the whole body, by these being long obstructed,
 inflammatis, exulceratis.
inflamed, ulcerated.

CAP. XV.

CHAP. XV.

De varietatibus et vitiis motûs sanguinis.
 Of the varieties and disorders of the motion of the blood.

443. Cor, que omnia vasa quæ conferunt ad motum
The heart, and all the vessels which contribute to the circulation
 sanguinis, arteriæ, venæ, resorbentia, observantur, comparata
of the blood, arteries, veins, absorbing vessels, are observed, (when) compared
 cum reliquo corpore, majora primâ quam provectâ ætate;
with the rest (of) the body, larger in early than advanced age:
 maxima in fœtu, indies minuuntur pro parte
largest in the fœtus, they every day are diminished in respect of the part
 ratâ, que multa eorum paulatim concluduntur. Hinc recens
considered, and many of them by degrees are shut up. Hence the new
 natus rubet totus infans, puer sæpe juvenis est
born (child) is red entirely (all over) the infant, boy often the youth is
 mollis, lævis, humidus, flaccidus, eximii coloris; autem vir
soft, smooth, moist, flaccid, of an excellent colour; but the man
 firmior, durior, fuscus coloris vultus, minus pulchri:
(is) firmer, harder, of a dark colour of countenance, less beautiful:
 senex rigidus, siccus, pallidus, macer.
the old man (is) stiff, dry, pale, lean.

444. Venæ sunt multo densiores, firmiores, et validiores, quam
The veins are by much denser, firmer, and stronger, than
 arteriæ primâ ætate. Vero hæ, propter perpetuam pressuram
the arteries in early age. But the latter, because of the constant pressure

dentur esse. Sed nihil certi constat de natura aut origine, ne quidem de presentia acrimoniæ in initio hujus morbi, cum glandulæ primo tument: quamvis non dubium sit, his diu obstructis, inflammatis, exulceratis plurimum acrimoniæ gigni, et fortasse per totum corpus diffundi.

CAP. XV.—*De motus sanguinis varietatibus et vitiis.*

443. COR vasaque omnia quæ ad sanguinis motum conferunt, arteriæ, venæ, resorbentia,

majora, cum reliquo corpore comparata, observantur prima quam provecta ætate: in fœtu maxima, indies pro rata parte minuuntur, multaque eorum paulatim concluduntur. Hinc recens natus totus rubet, infans, puer, juvenis sæpe mollis, lævis, humidus, flaccidus, eximii coloris est; vir autem firmior, durior coloris vultus fuscus, minus pulchri; senex rigidus, siccus, pallidus, macer.

444. Prima ætate, venæ multo quam arteriæ densiores, firmiores, et validiores sunt. Hæ vero, propter perpetuam quam patiuntur pres-

quam patiuntur, et vim quoque quam exerunt inter contrahendum, *which they endure, and the power also which they exert while contracting,* indies evadunt firmiores, duriores, et validiores, donec tandem *daily become firmer, harder, and stronger, until at length* æquent, vel superent vim venarum. Haud raro in *they equal, or even exceed the strength of the veins. Not unfrequently in* senibus, pars magnæ arteriæ convertitur in corneam substantiam, *old men, part of the large artery is converted into a horny substance,* vel demum in verum os. *or indeed into true bone.*

445. Hinc prima ætate, plus sanguinis pro parte rata *Hence in early age, more (of) blood in respect of the part considered* continetur in arteriis, autem provectâ, plus in venis: res *is contained in the arteries, but in advanced, more in the veins: a thing* sane haud levis momenti, scilicet quæ quodam modo reddit *truly of no small moment, as that which in some degree furnishes* rationem incrementi corporis, statûs et imminutionis. *the explanation of the growth of the body, of its perfection and decay.*

Porro, si fuerit plus sanguinis justo in corpore, *Moreover, if there should be more (of) blood than proper in the body,* quicquid mali oriatur ex eo, oportet manifestet se maximè *whatever evil may arise from it, must manifest itself most* primâ ætate in arteriis, autem provectâ in venis. Hæc *in early age in the arteries, but in advanced in the veins. This* (saltem ex aliqua parte) videtur esse ratio quorundam morborum *(at least in some degree) seems to be the cause of certain diseases* qui solent comitari certa tempora vitæ. *which are accustomed to accompany certain periods of life.*

446. Fœminæ multorum, fortasse omnium animalium, habent arterias, *The females of many, perhaps of all animals, have the arteries,* haud parum, capaciores et laxiores, comparatas cum venis, *not a little, more capacious and lax, compared with the veins,* que venas ipsas multo minores quam mares ejusdem generis; *and the veins themselves much less than males of the same species;* quod est imprimis notabile in descendente aortâ, si fuerit *which is particularly remarkable in the descending aorta, if it (should) be* comparata cum ascendente venâ cavâ quæ respondet eidem: *compared with the ascending vena cava which answers to the same:* consilium cuius rei est haud obscurum, nempe, quo meliùs *the design of which thing is not obscure, namely, that they may be* valeant ad alendum fœtum quem debent gestare. Ratio *better able to nourish the fœtus which they ought to carry. The reason*

suram, et vim quoque quam inter contrahendum exerunt, indies firmiores, duriores et validiores evadunt, donec tandem vim venarum æquent vel superent. Haud raro in senibus pars magnæ arteriæ in substantiam corneam, vel demum in verum os, convertitur.

445. Hinc prima ætate plus sanguinis pro rata parte in arteriis, provecta autem plus in venis, continetur: res sane haud levis momenti, scilicet quæ rationem quodammodo reddit corporis incrementi, status, et imminutionis. Porro, si plus justo sanguinis in corpore fuerit, quicquid mali ex eo oriatur, oportet

prima ætate in arteriis, provecta autem in venis, se maxime manifestet. Hæc (aliqua saltem ex parte) videtur esse ratio quorundam morborum qui certa vitæ tempora comitari solent.

446. Fœminæ multorum, fortasse omnium animalium, habent arterias haud parum capaciores et laxiores, cum venis comparatas, venasque ipsas multo minores, quam mares ejusdem generis; quod imprimis notabile est in aorta descendente, si cum vena cava ascendente, quæ eidem respondet comparata fuerit: cuius rei consilium haud obscurum est, nempe, quo melius valeant ad fœtum alendum, quem

videtur quoque esse par quod fœminæ sint plus proclives ad
seems also to be similar that women are more disposed to
 plenitudinem corporis quam viri. Huic majori capacitati arteriarum
fulness of body than men. To this greater capacity of the arteries
 et parvitati venarum est quoque tribuendus eximius color
and smallness of the veins is also to be attributed the beautiful colour
 vultûs et cutis fœminarum, et elegantia brachiorum,
of the countenance and of the skin of women, and the elegance of the arms,
 lividorum nullis venis, ut in maribus.
livid with no veins, as in males.

447. Quin et, sanguis datur diversis partibus variâ copiâ,
Moreover, the blood is given to different parts in various quantity,
 que iisdem partibus aliâ proportione, alio tempore
and to the same parts in a different proportion, at a different period
 vitæ. Ingens copia (sanguinis) mittitur ad caput, a primis
of life. A great quantity of blood is sent to the head, from the first
 fundamentis corporis jactis; scilicet quod debeat primum formari
foundations of the body being laid; as being what ought first to be formed
 et evolvi, que aptari suis muneribus: et profecto caput attingit
and evolved, and fitted for its functions: and indeed the head attains
 suam justam magnitudinem ante alias partes. Vero renixus
its proper size before the other parts. But the resistance
 auctus, que partes haud facillè dilatandæ amplius, divertunt
being increased, and the parts not easily to be dilated more, divert
 sanguinem alio: tum reliquum corpus, pro parte ratâ,
the blood elsewhere: then the rest of the body, in respect of the part considered
 crescit plus quam antea, et quædam organa, - prius admodum
grows more than before, and certain organs, before very
 imperfecta et quasi inutilia, perficiuntur et evolvuntur, facta
imperfect and as it were useless, are perfected and evolved, rendered
 idonea ad propria munera.
fit for their proper functions.

448. Effectus quoque cursûs sanguinis in infante mutati,
The effects also of the course of the blood in the infant being changed,
 observantur brevi post partum: scilicet quum nullus (sc. sanguis)
are observed shortly after birth: that is since none
 transit per umbilicum, et ideo plus mittitur per iliacas
passes by the umbilicus, and consequently more is sent by the iliac
 arterias ad inferiores artus: hi, enim, parvi et tenues in
arteries to the lower limbs: these, moreover, small and slender in
 fœtu, tum crescunt subito, ita ut infantes sæpe possint
the fetus, then grow suddenly, so that infants often are able

gestare debent. Par quoque videtur esse ratio, quod fœminæ ad plenitudinem corporis plus quam viri proclives sint. Huic quoque majori arteriarum capacitati et parvitati venarum eximius fœminarum vultus et cutis color tribuendus est, et elegantia brachiorum, nullis veis, ut in maribus, lividorum.

447. Quin et sanguis diversis partibus varia copia datur; iisdemque partibus alia proportione, alio vitæ tempore. A primis fundamentis corporis jactis, ingens copia ad caput mittitur; scilicet, quod primum formari et evolvi, suisque muneribus aptari, debeat: et profecto

caput ante alias partes justam suam magnitudinem attingit. Auctus vero renixus, partesque haud facile amplius dilatandæ, sanguinem alio divertunt: tum reliquum corpus, pro rata parte, plus quam antea crescit, et organa quædam, prius admodum imperfecta, et quasi inutilia, demum perficiuntur et evolvuntur, ad propria munera idonea facta.

448. Effectus quoque mutati sanguinis in infante cursûs brevi post partum observantur: scilicet, quum nullus per umbilicum transit, et ideo plus per iliacas arterias ad artus inferiores mittitur: hi enim, in fœtu parvi et te-

ante annum, nonnunquam ante sex menses, non modo insistere firmi
within the year, sometimes before six months, not only to stand firm(ly)
 propriis pedibus, sed ambulare haud malè.
upon their own feet, but to walk not badly.

449. Medici solent judicare de statu circuitûs
Physicians are accustomed to judge of the state of the circulation
 sanguinis a pulsu: autem ille est admodum varius, tum
of the blood from the pulse: but it is very various, as well
 quod attinet ad frequentiam ejûs, tum quod ad vim
what relates to the frequency of it, as also what relates to the force
 et æqualitatem ictuum et intervallorum.
and equality of the strokes and intervals.

450. Communis frequentia pulsuum est, in adulto et sano
The ordinary frequency of the pulsations is, in an adult and healthy
 homine, circiter septuaginta in minuto horæ. In fœtu, fortasse,
person, about seventy in the minute (of the hour). In the fœtus, perhaps,
 (est) velocior, duplo et amplius. In infante primis mensibus
it is more frequent, by double and more. In the infant in the first months
 vitæ, vix infra centum et viginti; fit paulatim lentior
of life, scarcely under a hundred and twenty; it becomes gradually slower
 (in) puero et adolescenti; in decrepito sene aliquando descendit
in the boy and young man; in the decrepit old man sometimes it sinks
 ad quinquaginta et infra.
to fifty and under.

451. Quin et multi, imprimis mobiliores, habent pulsus multo
Moreover many, especially the more irritable, have the pulse much
 frequentiores; dum alii, etiam florente ætate, (habent)
more frequent; whilst others, even in the flower of age, (have them)
 admodum lentos. Fœminis quoque solent plerumque esse
very slow. In women also they are accustomed generally to be
 nonnihil frequentiores quam viris.
somewhat more frequent than in men.

452. Fiunt frequentiores, cum in sano tum quoque in
They become more frequent, as well in the healthy as also in
 morbo corpore, propter multos stimulos admotos eidem.
the diseased body, on account of many stimuli applied to the same.
 Imprimis, exercitatio incitat pulsus in mirum modum, reditu
First of all, exercise quickens the pulse in a wonderful manner, by the return
 sanguinis, qui fuit in venis, expedito. Quoque variæ
of the blood, which was in the veins, being quickened. Also various
 irritaciones, quales afficiunt nervosum genus, affectus animi, ve
irritations, such as affect the nervous system, passions of the mind, or

nues, tunc crescunt subito, ita ut sæpe ante annum, nonnunquam ante sex menses, infantes non modo propriis pedibus firmi insistere, sed haud malè ambulare, possint.

449. A pulsu medici judicare solent de statu circuitus sanguinis: ille autem admodum varius est, tum quod ad ejus frequentiam attinet, tum quod ad vim et æqualitatem ictuum et intervallorum.

450. Communis pulsuum frequentia est, in homine adulto et sano, circiter septuaginta in horæ minuto. In fœtu fortasse duplo et amplius velocior. In infante, primis vitæ mensibus, vix infra centum et viginti; puero et

adolescenti paulatim lentior fit; in sene decrepito, aliquando ad quinquaginta et infra descendit.

451. Quin et multi, imprimis mobiliores, pulsus multo frequentiores; dum alii, florente etiam ætate, lentos admodum, habent. Fœminis quoque quam viris plerumque nonnihil frequentiores esse solent.

452. Frequentiores fiunt, cum in sano tum quoque in morbo corpore, propter multos stimulos eidem admotos. Exercitatio imprimis, reditu sanguinis qui in venis fuit expedito (427, 428,) pulsus mirum in modum incitat. Irritaciones quoque variæ, quales genus nervosum

vehemens cogitatio, dolor, calor, stimulantia medicamenta, vinum,
intense thinking, pain, heat, stimulating medicines, wine,
 aromata, et similia, præstant eundem effectum. Multi medici
aromatics, and the like, may produce the same effect. Many physicians
 quoque crediderunt acrimoniam sanguinis ipsius reddere pulsum
also have believed that the acrimony of the blood itself renders the pulse
 frequentiorem.
more frequent.

453. Pulsus est rarus matutinis horis, quum primo expergiscimur,
The pulse is slow in the morning time, when first we awake,
 evasurus paulatim frequentior, propter multa irritamenta
will become gradually more frequent, on account of the many irritations
 quibus objicimur; intenditur post cibum, imprimis ex carnibus,
to which we are exposed; it is increased after food, especially of meats,
 aut acrem aut conditum; sub vesperem, levis febricula
either acrid or seasoned; towards evening, slight feverishness
 quasi accedit, cui requies et somnus sunt remedio.
as it were comes on, to which rest and sleep bring relief.

Hæc, vix observanda in sano homine, produnt se
These things, scarcely to be observed in a healthy person, shew themselves
 manifeste satis in ægroto, febricitante, præsertim hectico (sc. homine).
evidently enough in the sick, the feverish, especially the hectic person.

454. Denique, debilitas ipsa, videtur sæpe reddere pulsum frequen-
Again, debility itself, seems often to render the pulse more
 tiorem, vel saltem conferre nonnihil ad hunc effectum; nimirum
frequent, or at least to contribute something to this effect; doubtless
 quia tum ventriculus cordis non depletus bene,
because then the ventricle of the heart not being emptied thoroughly,
 distenditur iterum citius, et denuo incitatur ad contractionem.
is distended again sooner, and is again incited to contraction.
 Quapropter medico nunquam licet (impersonaliter) judicare de
Wherefore the physician never can judge of
 impetu sanguinis a frequentia pulsum.
the impetus of the blood from the frequency of the pulsations.

455. Postremo, pulsus observantur nimis frequentes in omnibus
Lastly, the pulse are observed too frequent in all
 febribus, utcunque diveris inter se, partim fortasse, ob
fevers, however differing from each other, partly perhaps, because of
 debilitatem, partim ob acrimoniam humorum, partim ob
debility, partly on account of the acrimony of the fluids, partly on account of
 sanguinem repulsum a superficie corporis, et accumulatum in
the blood driven from the surface of the body, and accumulated in

afficiunt, animi affectus vel cogitatio vehemens, dolor, calor, stimulantia medicamenta, vinum, aromata, et similia, eundem effectum præstant. Acrimoniam quoque ipsius sanguinis multi medici crediderunt pulsum frequentiorem reddere.

453. Horis matutinis, quum primo expergiscimur, pulsus rarus est, paulatim frequentior evasurus propter multa quibus objicimur irritamenta; post cibum, ex carnibus imprimis, aut acrem, aut conditum, intenditur; sub vesperem, levis quasi febricula accedit, cui requies et somnus remedio sunt. Hæc, in sano homine vix observanda, in ægroto, febrici-

tante, hectico præsertim, satis manifeste se produnt.

454. Denique, ipsa debilitas pulsum sæpe frequentiore reddere, vel saltem ad hunc effectum nonnihil conferre, videtur; nimirum, quia tum ventriculus cordis non bene depletus, citius iterum distenditur, et ad contractionem denuo incitatur. Quapropter medico nunquam licet de impetu sanguinis judicare a frequentia pulsum.

455. Postremo, in omnibus febribus, utcunque inter se diversis, pulsus nimis frequentes observantur, partim fortasse ob debilitatem, partim ob humorum acrimoniam, partim ob san-

magnis vasis, que stimulantem eadem; partim quoque ob
the great vessels, and stimulating the same; partly also by reason of
 varias morbosas irritaciones, quæ nunquam desunt in corpore
various diseased irritations, which never are wanting in a body
 habente se tam male, et jam facto nimis irritabili; partim,
having itself so badly, and already become too irritable; partly,
 demum, per quædam conamina Naturæ ad liberandum corpus tanto
finally, by certain efforts of Nature to release the body from so great
 malo, quamvis sane subsit multum obscuri vel prorsus
a disorder, although indeed there may be much of obscurity or altogether
 ignoti hic: nec quis facile dixerit quomodo
of what is unknown here: nor could any one readily say in what manner
 autocrateia corporis agat hic; que necne tanta frequentia
the autocrateia of the body acts here; and whether or not so great frequency
 pulsuum sit referenda conatibus ejus (autocrateiæ).
of the pulse ought to be referred to the efforts of it.

456. Pulsus raro observantur nimis tardi, nisi a minutâ
The pulse seldom are observed too slow, except from a diminished
 mobilitate corporis, veluti in ultimo senio, vel a cerebro
mobility of the body, as in extreme old age, or from the brain
 compresso, vel aliter habente se male. Vero gravior
being compressed, or otherwise having itself badly. But more severe
 compressio cerebri solet efficere ingentem frequentiam pulsuum,
compression of the brain is accustomed to cause great frequency of the pulse,
 veluti in hydrocephalo, apoplexiâ, &c. Interdum pulsus fiunt mirabiliter
as in hydrocephalus, apoplexy, &c. Sometimes the pulse become wonderfully
 tardi in hydrope pericardii, que aliis morbis vel hujus sacci
slow in dropsy of the pericardium, and in other diseases either of this bag
 vel cordis ipsius. Aliquando pulsus observatur præter solitum
or of the heart itself. Sometimes the pulse is observed unusually
 tardus in convalescentibus a diuturnis febribus. Res sane haud
slow in convalescents from long-continued fevers. A thing truly of no
 magni momenti; cujus aliquis torpor videtur esse causa. Quædam
great moment; of which some torpor seems to be the cause. Certain
 medicamenta sedantis generis, et imprimis nonnulla narcotica,
medicines of the sedative class, and especially some narcotics,
 veluti digitalis, sæpe visa sunt reddere pulsus multo tardiores
as digitalis, often have seemed (seem) to render the pulse much slower
 solito.
than usual.

457. Vero frequentia pulsuum nihil mutatâ, singuli (sc.
But the frequency of the pulsations being in no way changed, each

guinem a superficie corporis repulsum, et in magnis vasis accumulatum, eandemque stimulantem; partim quoque ob varias irritaciones morbosas quæ in corpore tam male se habent et jam nimis irritabili facto nunquam desunt: partim demum per conamina quædam Naturæ (364, 368.) ad corpus tanto malo liberandum quamvis sane multum hic subsit obscuri, vel prorsus ignoti: nec facile quis dixerit quomodo autocrateia corporis hic agat; tantaque pulsuum frequentia referenda sit, necne, ejus conatibus.

456. Pulsus raro nimis tardi observantur, nisi a minuta corporis mobilitate, veluti in

ultimo senio, vel a cerebro compresso, aut aliter male se habente. Gravior vero cerebri compressio ingentem pulsuum frequentiam efficere solet, veluti in hydrocephalo, apoplexiâ, &c. Interdum in hydrope pericardii, aliisque morbis vel hujus sacci vel cordis ipsius, pulsus mirabiliter tardi fiunt. Aliquando in convalescentibus a febribus diuturnis, pulsus præter solitum tardus observatur. Res sane haud magni momenti; cujus torpor aliquis videtur esse causa. Medicamenta quædam sedantis generis, et imprimis narcotica nonnulla, veluti Digitalis, sæpe visa sunt reddere pulsus multo tardiores solito.

pulsus) possunt esse vel pleni, magni, validi, fortes, duri, vel parvi, may be either full, large, vigorous, strong, hard, or small, debiles, molles. Pulsus fit plenus, magnus, fortis, quum ventriculus weak, soft. The pulse becomes full, large, strong, when the ventricle deplet se fortiter et plene, que tradit magnam undam sanguinis empties itself strongly and thoroughly, and sends a large wave of blood in arterias, quæ probe distendat has, et incitet ad into the arteries, which fully distends them, and stimulates (them) to validam contractionem. Pulsus hujusmodi, raro habendus morbosus, powerful contraction. A pulse of this sort, seldom to be considered diseased, contingit validis et sanis hominibus. Quod, si evadit nimis belongs to strong and healthy persons. But, if it becomes too fortis, et ferit vehementer et acriter pulpam digiti explorantis strong, and strikes violently and sharply the pulp of the finger of the person tum, vocatur durus. Durities pulsûs oritur a examining them, it is called hard. Hardness of the pulse arises from subitâ et vehemente contractione ventriculi cordis et arteri- the sudden and violent contraction of the ventricle of the heart and of the arum, quæ nimis subito et acriter distendat remotiores arteries, which too suddenly and sharply distends the more remote ramos, veluti carpi, et incitet ad contractiones pariter subitas branches, as of the carpus, and excites them to contractions alike sudden et vehementes. Igitur, durus pulsus denotat nimiam actionem and violent. Therefore, a hard pulse denotes excessive action cordis et arteriarum. of the heart and arteries.

458. Vero oritur a variis causis: imprimis, a nimîâ tensione But it arises from various causes: first of all, from excessive tension arteriarum, veluti a nimîâ plenitudine, quâ hæ fiunt of the arteries, as from too great fulness, by which they become proniores ad motum, et aptiores ad suscipiendos vehementes motus; more disposed to motion, and more fitted for taking on violent motions; oritur quoque a nimîâ densitate seu firmitate solidarum partium; it arises also from too great density or firmness of the solid parts; hinc frequentior in frigidis regionibus et temporibus, et familiaris hence more frequent in cold climates and seasons, and common robustis et validis hominibus et assuetis laboribus; denique, potest to robust and strong persons and those accustomed to labours; indeed, it may oriri a variis irritamentis afficientibus vel totum nervosum arise from various irritants affecting either the whole nervous genus vel tantum cor et arterias. Postremo comitatur system or only the heart and arteries. Lastly, it accompanies

457. Pulsuum vero frequentia nihil mutata, singuli possunt esse vel pleni, magni, validi, fortes, duri; vel parvi, debiles, molles. Pulsus plenus, magnus, fortis fit, quum ventriculus, fortiter et plene se deplet, magnamque undam sanguinis arteriis tradit, quæ hæ probe distendat, et ad validam contractionem incitet. Hujusmodi pulsus contingit hominibus validis et sanis, raro morbosus habendus. Quod si nimis fortis evadit, et pulpam digiti explorantis vehementer et acriter ferit, tum durus vocatur. Durities pulsus oritur a subita et vehemente ventriculi cordis et arteriarum contractione, quæ ramos remotiores, veluti

carpi, nimis subito et acriter distendat, et ad contractiones pariter subitas et vehementes incitet. Denotat igitur pulsus durus nimiam actionem et arteriarum actionem.

458. Oritur vero a variis causis: Imprimis, a nimia arteriarum tensione, veluti a nimia plenitudine, qua hæ ad motum proniores fiunt, et ad vehementes motus suscipiendos aptiores (221, 222, 223); oritur quoque a nimia solidarum partium densitate seu firmitate; hinc in regionibus et temporibus frigidis frequentior, et hominibus robustis et validis, et laboribus assuetis, familiaris (88, 91); denique, a variis irritamentis oriri potest, vel totum genus ner-

multas febres et plerosque morbos qui habent inflammationem: sive
many fevers and most of the diseases which have inflammation: whether
 a generali stimulo admoto corpori, sive ab irritatione quarundam
from the general stimulus applied to the body, or from irritation of certain
 partium, quæ paulatim extenditur ad totum corpus. Talis conditio
parts, which by degrees is extended to the whole body. Such a state
 circuitûs qualem hic pulsus indicat sæpe eget detractio-
of the circulation as this pulse indicates often requires detraction
 sanguinis, et fere semper fert jacturam sanguinis bene.
of blood, and almost always bears the loss of blood well.

459. Parvus, debilis, mollis pulsus agnoscit causas fere contrarias,
A small, feeble, soft pulse acknowledges causes nearly opposite,
 que indicat contrarium conditionem circuitûs et nervosi
and indicates an opposite condition of the circulation and of the nervous
 generis; sæpe requirit stimulantia, plerumque neque postulat,
system; often requires stimulants, and for the most part neither requires,
 neque facile tolerat, detractio-
nor easily bears, abstraction of blood. But sometimes a pulse of this
 modi observatur, quamvis gravis inflammatio, veluti ventriculi aut
kind is observed, although severe inflammation, as of the stomach or
 intestinorum, urgeat. In his et similibus exemplis, oportet
of the intestines, may oppress. In these and similar examples, it behoves
 respicere ad naturam mali plus quam ad statum pulsûs.
to look to the nature of the disease more than to the state of the pulse.

460. Pulsus vocatur intermittens, siquando ictus non renovatur
The pulse is called intermitting, whenever the stroke is not repeated
 post solitum intervallum, et spatium intercedit longius sæpe duplo vel
after the usual interval, and a space intervenes longer often by double or
 triplo, vel nonnunquam quadruplo, soli solito (sc. spatio.)
triple, or even sometimes by four times, than the accustomed interval.

461. Pulsus hujûsmodi est fere et naturalis et perpetuus
A pulse of this kind is almost both natural and constant
 quibusdam animalibus; familiaris nonnullis hominibus fruentibus optimâ
to some animals; common to some persons enjoying the best
 sanitate; que pulsus interdum fit æqualis iisdem, donec
health; and the pulse sometimes becomes equal (regular) in the same, whilst
 febricitant, neque morbus solvitur priusquam intermittens
they are feverish, nor is the disease resolved before that the intermitting
 pulsus rediverit.
pulse shall (have) returned.

462. Porro nonnullis hominibus, quibus, dum sunt sani,
Moreover, in some persons, who, whilst they are healthy,

rosam, vel tantum cor et arterias, afficientibus. Postremo, multas febres, et plerosque morbos qui inflammationem habent, comitatur: sive a generali stimulo corpori admoto, sive ab irritatione partium quarundam, quæ paulatim ad totum corpus extenditur. Talis conditio circuitûs, qualem pulsus hic indicat, sæpe sanguinis detractio-
 nem requirit, et fere semper fert jacturam sanguinis bene.

459. Pulsus parvus, debilis, mollis, contrarias fere causas agnoscit, contrariamque sanguinis circuitûs et generis nervosi conditionem indicat; stimulantia sæpe requirit, neque sanguinis detractio-
 nem plerumque postulat, neque facile tolerat. Aliquando vero pulsus istiusmodi

observatur, quamvis gravis inflammatio urgeat, veluti ventriculi, aut intestinorum. In his et similibus exemplis ad naturam mali, plus quam ad statum pulsus, respicere oportet.

460. Pulsus intermittens vocatur, siquando post solitum intervallum ictus non renovatur, et spatium intercedit, sæpe duplo vel triplo, vel nonnunquam quadruplo, solito longius.

461. Hujusmodi pulsus quibusdam animalibus fere naturalis et perpetuus est; nonnullis hominibus optima sanitate fruentibus, familiaris; iisdemque, donec febricitant, pulsus interdum æqualis fit, neque prius solvitur morbus, quam pulsus intermittens rediverit.

est pulsus æqualis, si detinentur vel levissimo morbo, have the pulse equal, if they are affected even by the slightest disease, intermittens pulsus accedit. Alii, præsertim mobilioris habitûs the intermittent pulse comes on. Others, especially of a more irritable habit corporis, veluti hysterici aut hypochondriaci, vel qui laborant a of body, as hysterical or hypochondriacal (persons), or who suffer from stomacho, habent pulsum intermittentem a levi malo the stomach, have the pulse intermitting from slight disorder ventriculi, vel ab aliquo affectu animi, vel interdum a of the stomach, or from some affection of the mind, or sometimes from minore que ne observatâ causâ, quem (sc. puls. inter.) ipsi solent a less and unobserved cause, which they are accustomed scire, quamvis non exploraverint pulsus arteriarum, to know, although they should not have examined the pulse of the arteries, anxietate solâ quam sentiunt profundo in pectore, quoties by the anxiety alone which they feel deep (deeply) in the breast, as often as pulsus deficit. the pulse fails.

463. Denique, in quibusdam morbis pectoris, imprimis hydrope, et In fine, in certain diseases of the chest, especially dropsy, and gravi inflammatione pulmonis, et magnâ difficultate spirandi, et severe inflammation of the lungs, and great difficulty of breathing, and variis morbis cordis ipsiûs, que valvarum ejûs, aut majorum in various diseases of the heart itself, and of the valves of it, or of the larger vasorum, et sane in omnibus morbis, præsertim febribus prope finem, vessels, and truly in all diseases, especially fevers near the end, quum, viribus ægri jam exhaustis, mors pulsat arcem when, the strength of the patient being now exhausted, death batters the citadel ipsam vitæ, intermissio pulsûs observatur, tunc pessimum signum, sæpe itself of life, intermission of pulse is observed, then the worst symptom, often prænuncium lethi. the forerunner of death.

464. Igitur videtur oriri vel a nervosâ vi influente Therefore it appears to arise either from the nervous power flowing minus æqualiter in cor, que alia organa quæ promovent less equally (regularly) into the heart, and the other organs which promote circuitum, quod est omnino parvi momenti; vel a nervosâ the circulation, which is altogether of small moment; or from the nervous vi jam fractâ et exhaustâ, et corde vix amplius valente influence being now broken and exhausted, and the heart no longer able ad contractionem; neque deplente se, donec fuerit distentum for contraction; nor emptying itself, until it have been distended

462. Nonnullis porro hominibus, quibus, dum sani sunt, pulsus æqualis est, si vel levissimo morbo detinentur, intermittens pulsus accedit. Alii, præsertim habitus corporis mobilioris, veluti hysterici aut hypochondriaci, vel qui a ventriculo laborant, a levi malo ventriculi, vel ab aliquo animi affectu, vel interdum a minore neque observata causa, pulsus intermittentem habent, quem ipsi scire solent, quamvis pulsus arteriarum non exploraverint, sola anxietate quam profundo in pectore sentiunt, quoties pulsus deficit.

463. Denique, in quibusdam morbis pectoris, hydrope imprimis, et gravi pulmonis inflam-

matione, et magna spirandi difficultate, et variis vitiis cordis ipsius, ejusque valvarum, aut majorum vasorum; et in omnibus sane morbis, præsertim febribus, prope finem, quum, viribus ægri jam exhaustis, mors ipsam vitæ arcem pulsat, intermissio pulsus observatur. Signum tunc pessimum, sæpe lethi prænuncium.

464. Igitur videtur oriri, vel a vi nervosa in cor, aliisque organa quæ circuitum promovent, minus æqualiter influente; quod parvi omnino momenti est; vel a vi nervosa jam fracta et exhausta, et corde vix amplius ad contractionem valente, neque se deplente,

plus solito; vel, denique, a vitiis cordis ipsius que
more than usual; or, lastly, from disorders of the heart itself and
 vicinarum partium, vel a tumoribus, aut aquâ et similibus
of the neighbouring parts, or from tumours, or from water and the like
 prementibus, et impediendis actionem ejus, quod pessimum, et
oppressing, and impeding the action of it, which (is) very bad, and
 erit vix non lethale.
will be scarcely not (almost certainly) fatal.

465. Porro, medici descriperunt haud paucas alias varietates
Moreover, physicians have described not a few (many) other varieties
 pulsum, que crediderunt varios eventus morborum predicti
of the pulse, and have believed that the various issues of diseases might be predicted
 ex his: fides quarum rerum sit penes auctores.
from them: let the truth of which things be with the authors, (for the truth
 Enim nondum satis comprobatae sunt
of which I refer to the authors.) For they have not yet been sufficiently proved
 repetitis observationibus, saltem in nostris regionibus, ut tuto
by repeated observations, at least in our country, that we safely
 fidendum sit (sc. nobis) his; neque profecto ratio earum est
should trust them; nor truly has an explanation of them been
 reddita hactenus, neque est status circuitus sanguinis, qui
given hitherto, nor is the state of the circulation of the blood, which
 efficit eas, omnino cognitus.
produces them, at all known.

466. Motus sanguinis potest esse vel nimis vehemens vel nimis
The motion of the blood may be either too violent or too
 debilis, vel, denique, abnormis.
feeble, or, lastly, irregular.

467. Ratio nimis vehementis motus sanguinis facile redditur
The reason of the too violent motion of the blood is easily rendered
 ex prædictis. Frequens pulsus, cæteris paribus,
from the previous statements. A frequent pulse, other things being equal,
 efficit rapidiorem motum ejus; nimirum, quo citius ventriculus
causes a more rapid motion of it; that is to say, the quicker the ventricle
 cordis deplet sese, eo velocius sanguis projicitur in
of the heart empties itself, the more rapidly the blood is projected into
 arterias; que oportet actionem earum respondere huic
the arteries; and it behoves that the action of them correspond to this
 validiori stimulo. Quin et, magnus et validus pulsus, cæteris
more powerful stimulus. Moreover, a large and strong pulsation, other things
 paribus, intendit motum sanguinis. Igitur, variæ causæ
being equal, accelerates the motion of the blood. Therefore, the various causes

donec plus solito distentum fuerit; vel denique
 a vitiis ipsius cordis partiumque vicinarum,
 vel a tumoribus, aut aqua et similibus premen-
 tibus, et actionem ejus impediendis; quod
 pessimum, et vix non lethale erit.

465. Alias porro pulsum varietates haud
 paucas medici descriperunt, variosque mor-
 borum eventus ex his prædicti crediderunt:
 quarum rerum fides sit penes auctores. Non-
 dum enim repetitis observationibus satis com-
 probatae sunt, in nostris saltem regionibus, ut
 tuto his fidendum sit; neque profecto ratio
 earum hactenus reddita est, neque status san-

guinis circuitus, qui eas efficit, omnino cog-
 nitus est.

466. Motus sanguinis potest esse vel nimis
 vehemens, vel nimis debilis, vel denique ab-
 normis.

467. Motus sanguinis nimis vehementis ratio
 facile redditur ex prædictis (452, 458.) Pulsus
 frequens, cæteris paribus, rapidiorem ejus
 motum efficit: nimirum, quo citius ventri-
 culus cordis sese deplet, eo velocius sanguis in
 arterias projicitur; earumque actionem huic
 validiori stimulo respondere oportet. Quin et
 pulsus magnus et validus, cæteris paribus,

utriusque generis pulsus, vel singulæ vel plures junctæ simul,
of both kind of pulse, either single or several joined together,
 inducunt hoc vitium circuitus: exercitatio, calor, stimulantia,
bring on this disorder of the circulation; exercise, heat, stimulants,
 plenitudo, omnigena irritatio, dolor, excitantes affectus animi,
fulness, every kind of irritation, pain, exciting affections of the mind,
 febres.
fevers.

468. Vero nimius impetus sanguinis distendit vasa, excitat
But a too great impetus of the blood distends the vessels, excites
 totum corpus, calefacit, sæpe debilitat; auget sudorem, autem
the whole body, heats, often debilitates (it); increases sweat, but
 fere minuit reliquas secretiones, impedit atque perturbat
for the most part diminishes the other secretions, impedes and disturbs
 varias functiones, tam animi quam corporis: inducit
the various functions, as well of the mind as of the body: induces
 sitim, obest nutrimento, consumit adipem, favet putredini, ut
thirst, obstructs nutrition, consumes the fat, favours putrescency, as
 vulgo est receptum apud medicos. Ingens impetus sanguinis
commonly has been admitted by physicians. A great impetus of blood
 aliquando rumpit vasa, quæ sunt debilliora; unde effusiones,
sometimes breaks the vessels, where they are weaker; whence effusions,
 fluxus sanguinis, &c. (oriantur.) Vero minime prætereundum est (nobis)
flowings of blood, &c. (hæmorrhagies.) But by no means must we pass over
 silentio nimium motum sanguinis, utcunque vitiosus appareat,
in silence that the excessive velocity of the blood, however faulty it may seem,
 esse inter præstantissima auxilia quibus Natura utitur ad sanandos
is (one) amongst the most excellent aids which Nature uses for curing
 plurimos morbos.
many diseases.

469. Motus sanguinis sæpe languescit, imprimis ob
The motion of the blood often becomes languid, principally on account of
 debilitatem, torporem, defectum irritationis, veluti exercitationis: sicubi
debility, torpor, want of irritation, as of exercise: whenever
 vires vel deficiunt, vel non excitantur, aut possunt (non) excitari
the powers either fail, or are not excited, or cannot be excited
 ut decet. Porro, motus humorum languescit,
as becomes them (they ought.) Furthermore, the motion of the fluids grows languid,
 si fuerit obstructio vel quævis causa, qualis impediatur iter
if there should be obstruction or any cause, such as may impede the passage
 eorum vel reddat difficilis.
of them or render (it) more difficult.

motum sanguinis intendit. Variæ igitur causæ utriusque generis pulsus, vel singulæ, vel plures simul junctæ, hoc vitium circuitus inducunt: exercitatio, calor, stimulantia, plenitudo, irritatio omnigena, dolor, animi affectus excitantes, febres.

468. Nimius vero sanguinis impetus vasa distendit, totum corpus excitat, calefacit, sæpe debilitat; sudorem auget, reliquas autem secretiones fere minuit, varias functiones tam animi quam corporis impedit atque perturbat: sitim inducit, nutrimento obest, adipem consumit, putredini, ut vulgo apud medicos receptum est, favet. Ingens aliquando sanguinis impetus, vasa, quæ debilliora sunt,

rumpit; unde effusiones, sanguinis fluxus, &c. Minime vero silentio prætereundum est nimium sanguinis motum, utcunque vitiosus appareat, inter præstantissima auxilia esse, quibus Natura utitur ad plurimos morbos, sanandos.

469. Languescit sæpe sanguinis motus, imprimis ob debilitatem, torporem, defectum irritationis, veluti exercitationis: sicubi vires deficiunt, vel non, ut decet, excitantur, aut excitari possunt. Porro, motus humorum languescit, si obstructio vel causa quævis fuerit, qualis iter eorum impediatur, vel difficiliter reddat.

470. Hoc modo, si quis institerit diutiùs pedibus, humores
In this way, if any one should stand too long on his feet, the fluids
 redibunt tardiùs ab inferioribus artubus, ab pondere
will return more slowly from the lower extremities, from the weight
 ipso sanguinis. Porro, quodvis vitium cordis et arteriarum,
itself of the blood. Further, any disease of the heart and arteries,
 amplificatio, constrictio, conversio in os, potest non, non impedire
enlargement, constriction, conversion into bone, cannot, not (must) impede
 motum sanguinis. Quin et, quælibet obstructio afficiens venas,
the motion of the blood. Moreover, any obstruction affecting the veins,
 reddit motum sanguinis tardiorem; veluti si, quod sæpe fit,
renders the motion of the blood slower; as if, which often happens,
 jecur fuerit durum, et vix pervium sanguini affluenti
the liver should be hard, and scarcely pervious to the blood flowing
 per venam portarum; vel, denique, (si) respiratio impedita (fuerit)
through the vena portæ; or, lastly, if respiration be impeded
 quâ (sc. respiracione imp.) iter minus facile conceditur sanguini
by which a passage is less easily allowed to the blood
 per pulmores ad sinistrum latus cordis; sed in hoc statu aliæ
through the lungs to the left side of the heart; but in this state other
 noxæ videntur quoque concurrere.
injuries seem also to concur.

471. Cæterum quicquid fuerit causa quod sanguis moveatur
But, whatever may (have) be the cause that the blood is circulated
 languidiùs, malum incumbit maxime in venas, nimirum quia
more languidly, the evil falls most upon the veins, doubtless because
 motus sanguinis est semper tardior in his. Hinc varices vena-
the motion of the blood is always slower in them. Hence varices of the
 rum, et congestiones sanguinis, præsertim in iis partibus, venæ
veins, and congestions of blood, especially in those parts, the veins
 quarum carent valvis, et in quibus motus musculorum nequit juvare
of which want valves, and in which the motion of the muscles cannot assist
 cursum sanguinis.
the current of the blood.

472. Ratio est quoque par cur Hydrops sæpe oriatur ab
The reason is also similar why dropsy often arises from
 impedito aut languido motu sanguinis; scilicet renixu in
an impeded or languid circulation of the blood; because the resistance in
 venis aucto, sanguis recipitur ægrîus in eas ex
the veins being increased, the blood is received more difficultly into them from
 arteriis, et plus tenuis humoris impellitur in exhalantia vasa,
the arteries, and more (of) thin fluid is driven into the exhalant vessels,

470. Hoc modo, ab ipso pondere sanguinis si quis diutiùs pedibus institerit, humores tardiùs ab artubus inferioribus redibunt. Porro, vitium quodvis cordis et arteriarum, amplificatio, constrictio, conversio in os, motum sanguinis non impedire non potest. Quin et obstructio quælibet, venas afficiens, motum sanguinis tardiorem reddit; veluti si jecur quod sæpe fit, durum fuerit, et sanguini per venam portarum affluenti vix pervium; vel denique, respiratio impedita, qua minus facile, per pulmores, ad sinistrum cordis latus, iter sanguini conceditur: sed in hoc statu aliæ quoque noxæ concurrere videntur.

471. Cæterum, quicquid causa fuerit quod sanguis languidiùs moveatur, malum in venas maxime incumbit; nimirum, quia in his sanguinis motus semper tardior est (432). Hinc varices venarum, et congestiones sanguinis, præsertim in iis partibus, quarum venæ valvis carent, et in quibus motus musculorum sanguinis cursum juvare nequit.

472. Par quoque ratio est, cur ab impedito aut languido sanguinis motu Hydrops sæpe oriatur; scilicet, aucto in venis renixu, sanguis ægrîus ex arteriis in eas recipitur, et plus humoris tenuis in vasa exhalantia (435) impel-

et deponitur ex iis, haud adeo facilè hauriendum per resorbentia
and is deposited by them, not so easily to be taken up by the absorbent
 vasa.
vessels.

473. Vero hæc, et haud pauca reliqua mala, quæ profuunt
But these, and not a few other disorders, which proceed
 a languido motu humorum, sanantur lentius et difficilius,
from the languid motion of the fluids, are cured more slowly and more difficultly,
 eo quod omnes vires naturæ deficiunt simul. Vero aut
because all the powers of nature fail at the same time. But either
 cita mors aut læta victoria brevi imponit finem iis quæ
speedy death or a joyful victory quickly puts an end to those which
 proveniunt a nimio impetu humorum.
proceed from a too great impetus of the fluids.

474. Quin et, vitium circuitus sæpissime accidit, sicubi plus
Moreover, a disorder of circulation very often occurs, as when more
 sanguinis justo qui debet deferri ad singulas partes in
blood than proper which ought to be conveyed to the several parts in
 certâ copiâ, defertur ad quasdam partes, et impetu majore
a certain ratio, is conveyed to some parts, and with an impetus greater
 quam decet: unde defectus in aliis partibus, quæ defraudantur
than it ought: whence a deficiency in other parts, which are defrauded
 suo penu.
of their due proportion.

475. Talis abnormis distributio vitalis humoris sæpe oritur
Such an irregular distribution of the vital fluid frequently arises
 à stimulo admoto vel cuilibet parti, vel aliis, quamvis fortasse
from a stimulus applied either to any one part, or to others, although perhaps
 admodum remotis; primo afficiente vel cerebrum vel demum animum,
very remote; at first affecting either the brain or at length the mind,
 qui tamen efficit certam et definitam distributionem sanguinis
which nevertheless produces a certain and definite distribution of the blood
 secundum leges consensûs.
according to the laws of sympathy.

476. Oritur quoque haud raro a spasmò inducto aliis et
It arises also not unfrequently from spasm induced in other and
 satis remotis partibus; scilicet, qui dirigat sanguinem, pulsum a
tolerably remote parts; that is, which can direct the blood, driven from
 solitis viis, in novas.
the ordinary channels, into new ones.

477. Prout abnormis distributio hujusmodi fuerit major ve
In proportion as an irregular distribution of this sort shall be greater or

litur, et ex iis deponitur, haud adeo facile per
 vasa resorbentia hauriendum.

473. Hæc vero, et reliqua haud pauca, quæ a
 languido humorum motu profuunt, mala, eo
 lentius et difficilius sanantur, quod omnes
 simul naturæ vires deficiunt. Quæ vero a ni-
 mio humorum impetu proveniunt, iis aut mors
 cita, aut victoria læta, brevi finem imponit.

474. Quin et vitium circuitus sæpissime
 accidit, sicubi sanguinis, qui certa copia ad
 singulas partes deferri debet, plus justo ad
 quasdam defertur, et majore quam decet im-
 petu: unde defectus in aliis partibus, quæ suo
 penu defraudantur.

475. Talis distributio abnormis humoris vita-
 lis oritur sæpe a stimulo, vel parti cuilibet
 admoto, vel aliis, quamvis fortasse admodum
 remotis; vel cerebrum, vel demum animum
 primo afficiente, qui tamen, secundum consen-
 sus leges (355, 363) certam et definitam san-
 guinis distributionem efficit.

476. Oritur quoque haud raro a spasmò aliis et
 satis remotis partibus inducto; scilicet, qui
 sanguinem a solitis viis pulsum in novas
 dirigat.

477. Prout major minorve fuerit hujusmodi
 distributio abnormis, eo plura et graviora, vel
 pauciora et leviora mala ex ea proveniunt;

minor, eo plura et graviora, vel pauciora et leviora,
less, in that the more and severer, or the fewer and slighter,
 mala proveniunt ex eâ (distributione, &c.): calor, tumor, rubor,
disorders proceed from it: heat, swelling, redness,
 inflammatio, lacerationes vasorum, profluvia sanguinis, effusiones, et
inflammation, lacerations of the vessels, profusions of blood, effusions, and
 solutio, destructio, corruptio, suppuratio reticulatæ telæ, que
solution, destruction, corruption, suppuration of the cellular tissue, and
 vicinarum partium.
contiguous parts.

478. Natura quoque sæpe utitur hoc, ut primo intuitu videtur,
Nature also often uses this, as at first sight it seems (to be),
 vitio, neque frustra, et vertit in optimum remedium. Neque
disorder, nor in vain, and converts it into the best remedy. Nor
 medici dedignati sunt premere ejus vestigia, et mutare et
have physicians disdained to tread her footsteps, and to change and
 dirigere, quantum potuerint, distributionem sanguinis in variis morbis:
direct, as far as they could, the distribution of blood in various diseases:
 neque penituit fecisse. Scilicet jam sunt
nor did it repent (them) to have done (this). Because already they have
 probe experti distributionem sanguinis mutatam esse sæpe
fully experienced that the distribution of the blood, (when) changed, was often
 præstantissimum auxilium tum ad sanandos morbos tum ad levanda
a most excellent auxiliary as well for curing diseases as for relieving
 indicia eorum quæ urgent maximè.
the symptoms of them which trouble most.

479. Postremo, quædam vitia motus cordis ipsius, adhuc
Lastly, certain derangements of the action of the heart itself, as yet
 supersunt consideranda, neque profecto adeo levia aut simplicia ut non
remain to be considered, nor truly so slight or simple as not
 mereantur attentionem medicorum: nimirum, palpitatio, et syncope, seu
to deserve the attention of physicians: namely, palpitation, and syncope, or
 animi defectio.
fainting.

480. Vehemens abnormis actio cordis vocatur palpitatio; qualis
A violent irregular action of the heart is called palpitation; such as
 plerumque sentitur et ab ægro ipso, non sine gravi
generally is felt both by the patient himself, not without an oppressive
 anxietate in pectore, et ab adstantibus, si admoverint manum
anxiety in the chest, and by the bystanders, if they (should) apply the hand
 pectori; quin potest quodammodo et spectari, scilicet, costæ
to the breast; but it may in some degree even be seen, that is, the ribs

calor, tumor, inflammatio, lacerationes vasorum, sanguinis profluvia, effusiones, et telæ reticulatæ partiumque vicinarum solutio, destructio, corruptio, suppuratio.

478. Hoc quoque, ut primo intuitu videtur, vitio, Natura sæpe neque frustra utitur, et in optimum remedium vertit. Neque medici dedignati sunt ejus vestigia premere, et sanguinis distributionem in variis morbis, quantum potuerint, mutare atque dirigere; neque fecisse penituit. Scilicet, jam probe experti sunt mutatam sanguinis distributionem sæpe præstantissimum esse auxilium tum ad sanan-

dos morbos, tum ad levanda eorum indicia quæ maxime urgent.

479. Postremo, supersunt adhuc consideranda vitia quædam motus ipsius cordis, neque profecto adeo levia aut simplicia ut medicorum attentionem non mereantur: palpitatio nimirum, et syncope, seu animi defectio.

480. Palpitatio vocatur actio cordis vehemens, abnormis; qualis plerumque, et ab ipso ægro non sine gravi anxietate in pectore sentitur, et ab adstantibus, si manum pectori admoverint; quin et interdum spectari quodammodo potest, tanta scilicet vi costæ aliquando

aliquando feriuntur tantâ vi ut totum pectus moveatur.
sometimes are struck with so much violence that the whole chest is moved.

Dum cor palpitât, pulsus arteriarum observantur ple-
Whilst the heart palpitates, the pulsations of the arteries are observed for the
 rumque debiles, inæquales, et intermittentes.
most part weak, unequal, and intermitting.

481. Malum, naturâ spasmus, inducitur variis causis,
The disorder, in its nature a spasm, is brought on by various causes,
 tum quæ afficiunt totum nervosum genus, tum quæ
as well (those) which affect the whole nervous system, as (those) which
 (afficiunt) cor solum. Vitia omnigena, cordis ipsius, que
affect the heart alone. Diseases of every kind, of the heart itself, and
 valvarum que vasorum ejûs, constrictio, amplificatio, conversio
of the valves and vessels of it, constriction, enlargement, conversion
 in os, polypus, impediendo liberam actionem et exinanitionem
into bone, polypus, by preventing the free action and emptying
 cordis, incitant ipsum (cor) ad insolitam et vehementem contractionem
of the heart, excite it(self) to unusual and violent contraction.

Quoque nimia abundantia sanguinis vel nimius impetus, veluti a
Also an over abundance of blood or excessive impetus, as from
 cursu, &c. potest præstare eundem effectum.
running, &c. may produce the same effect.

482. Quin et cor, organum insignis mobilitatis, sæpe
Moreover the heart, an organ of remarkable mobility, frequently
 palpitât a statu nervosi generis vehementer affecti, et
palpitates from the state of the nervous system (when) violently affected, and
 præternaturam mobilis. Hinc palpitatio aliquando ab affectu
unnaturally irritable. Hence palpitation sometimes from an affection
 animi: hinc malum familiare hystericis.
of the mind: hence a disorder common to hysterical (persons).

483. Sæpe quoque oritur a ventriculo habente se male,
Often also it arises from the stomach having itself badly,
 stimulatô, distento, gravato, vermibus, multo onere crudi
being stimulated, distended, oppressed, by worms, a great load of crude
 aut corrupti cibi, aère copiose extricato per minus sanam
or corrupted food, by gas abundantly disengaged during less-(un)- healthy
 concoctionem, que variis acribus.
digestion, and by various acrid things.

484. Palpitatio sæpe comitatur podgram repulsam aut prodeuntem
Palpitation often accompanies gout when repelled or coming out
 male. Aliquando oritur a debilitate, qualiscunque fuerit
badly (irregular). Sometimes it arises from debility, whatsoever may have been

feriuntur, ut totum pectus moveatur. Dum palpitât cor, pulsus arteriarum plerumque debiles, inæquales, et intermittentes observantur.

481. Malum, natura spasmus, variis causis inducitur, tum quæ totum genus nervosum afficiunt, tum quæ solum cor. Vitia omnigena cordis ipsius, ejusque valvarum vasorumque, constrictio, amplificatio, conversio in os, polypus, liberam cordis actionem et exinanitionem impediendo, ipsum ad insolitam et vehementem contractionem incitant. Sanguinis quoque nimia abundantia, vel nimius impetus, veluti a cursu, &c. eundem effectum præstare potest.

482. Quin et cor, insignis mobilitatis organum, a statu generis nervosi vehementer affecti, et præter naturam mobilis, sæpe palpitât. Hinc aliquando ab animi affectu palpitatio: Hinc malum hystericis familiare.

483. Sæpe quoque oritur a ventriculo male se habente, vermibus, multo onere cibi crudi aut corrupti, aère per concoctionem minus sanam copiose extricato, variisque acribus, stimulatô, distento, gravato.

484. Podagram repulsam, aut male prodeuntem, sæpe comitatur palpitatio. Aliquando a debilitate oritur, qualiscunque ejus causa fue-

causa ejûs; sæpe etiam ab omni difficultate spirandi.
the cause of it; often also from every kind of difficulty of breathing.

Variae causæ palpitationis possunt quoque conjungi simul, et
The various causes of palpitation may also be combined together, and
 aliæ (possunt) producere alias.
some produce others.

485. Hinc patet cur, sæpe immedicabile malum, ocyus vel serius
Hence appears why, often an incurable disease, sooner or later
 evasurum lethale; cur sæpe leve et fugax; sæpe
to (it will) become fatal; why frequently slight and transient; often
 rediens per intervalla, sæpe accedens et ingravescens omni
returning at intervals, often coming on and increasing by every kind of
 irritatione et exercitatione; vero aliquando leniendum aut summovendum
irritation and exercise; but sometimes to be relieved or removed
 stimulantibus remediis et exercitatione.
by stimulating remedies and exercise.

486. Vocatur syncope seu defecto animi, (cui medici imposuerunt
It is called syncope or fainting, (to which physicians have given
 varia nomina, prout fuerit gravius vel levius malum,) *various names, according as it shall be a severer or slighter disorder,)*
 siquando actio cordis, et simul cum eâ arteriarum,
whenever the action of the heart, and together with it of the arteries,
 multum et subito deficit; unde animales vires, sensus, que
greatly and suddenly fails; whence the animal powers, sensation, and
 voluntarius motus statim collabuntur.
voluntary motion instantly collapse.

487. Fere omnes causæ palpitationis possunt aliquando quoque
Almost all the causes of palpitation can sometimes also
 inducere syncopen; scilicet quicquid queat turbare et convellere
induce syncope; because whatever can disturb and convulse
 motum cordis, potest nonnunquam debilitare vel suspendere
the motion of the heart, may sometimes debilitate or even suspend
 eundem.
the same.

488. Igitur vitiata fabrica cordis ipsiûs, graves affectus
Therefore a faulty mechanism of the heart itself, severe affections
 animi, tum deprimentes, tum qui subito et vehementer
of the mind, as well depressing, as those which suddenly and violently
 incitant, varia vitia nervosi generis, quidam morbi ventriculi,
excite, various disorders of the nervous system, certain diseases of the stomach,
 omnigena debilitas, omnis exinanitio, imprimis jactura sanguinis,
every kind of debility, every sort of evacuation, especially loss of blood,

rit; sæpe etiam ab omni spirandi difficultate. Variæ quoque palpitationis causæ simul conjungi possunt, et aliæ alias producere.

485. Hinc patet, cur malum sæpe immedicabile, serius ocyus lethale evasurum; cur sæpe leve et fugax; sæpe per intervalla rediens, sæpe omni irritatione et exercitatione accedens et ingravescens; aliquando vero stimulantibus remediis, et exercitatione, leniendum aut summovendum.

486. Syncope, seu animi defectio (cui varia nomina, prout gravius vel levius fuerit malum, medici imposuerunt) vocatur, si quando actio

cordis, et arteriarum simul cum ea, subito et multum deficit; unde vires animales, sensus, motusque voluntarius, statim collabuntur.

487. Omnes fere causæ palpitationis syncopen quoque aliquando inducere possunt; scilicet, quicquid motum cordis turbare et convellere queat, eundem nonnunquam debilitare vel suspendere potest.

488. Fabrica igitur ipsius cordis vitiata, graves animi affectus, tum deprimentes, tum qui subito et vehementer incitant, varia generis nervosi vitia, quidam morbi ventriculi, debilitas omnigena, omnis exinanitio, sanguinis im-

excessus laboris, que ejûs non intermissi, diuturna vigilia,
excess of labour, and of it (that) not intermitted, long continued watching,
 calor, dolor, multa venena, &c. faciunt hominem linqui
heat, pain, many poisons, &c. cause a person to be left

animo.
by the mind (to faint).

489. Quicquid reddit motum sanguinis per arterias cerebri
Whatever renders the motion of the blood through the arteries of the brain
 debiliorem, (potest) inducere syncopen; quicquid expedit eundem
weaker, may bring on syncope; whatever expedites the same
 potest reficere hominem vel jam deficientem.
may recover a person even already fainting.

490. Hinc ratio est in promptu cur situs solus
Hence the explanation is at hand (ready) why the position alone
 corporis, sæpe vel inducat syncopen vel impediât, vel depellat,
of the body, often either may induce syncope or prevent it, or drive it off,
 jam inductam.
even (when) induced.

491. Quoque patet, malum aliquando esse pessimi ominis,
It is also evident, that the disorder sometimes may be of the worst omen,
 que ipsum ne carere suo periculo; nimirum quod sæpe
and that it itself does not want its own danger; truly because often
 est continuatum morti; vero aliquando esse levissimum, discessurum
it is continued to death; but that sometimes it is very slight, will depart
 sponte, neque requirere auxilium medici; denique
of its own accord, nor requires the aid of the physician; in fine
 nonnunquam optari haud absurde, et induci arte a
that sometimes it is wished for not absurdly, and is induced by art by
 solerte medico, imitatore atque æmulo Naturæ ipsiûs, ut
the skilful physician, the imitator and rival of Nature herself, that
 præstet ægrum incolumem a vehemente dolore,
he may preserve (to preserve) the patient secure from violent pain,
 aut immani impetu sanguinis, vel profluvio vix temperando
or violent impetus of blood, or a profluvium scarcely to be governed
 aliter.
otherwise.

primis jactura, excessus laboris, ejusque non intermissi, diuturni vigilia, calor, dolor, multa venena, &c. hominem animo linqui faciunt.

489. Quicquid sanguinis motum per arterias cerebri debiliorem reddit, syncopen inducere; quicquid eundem expedit, hominem vel jam deficientem reficere potest.

490. Hinc ratio in promptu est, cur solus corporis situs syncopen sæpe vel inducat, vel impediât, vel jam inductam depellat.

491. Patet quoque, malum aliquando pessimi

omniis esse, neque ipsum suo periculo carere; nimirum quod sæpe morti continuatum est; aliquando vero levissimum esse, sponte discessurum, neque medici auxilium requirere; nonnunquam, denique a solerte medico, Naturæ ipsiûs imitatore atque æmulo, haud absurde optari, et arte induci, ut ægrum a vehemente dolore, aut immani sanguinis impetu, vel profluvio, vix aliter temperando, incolumem præstet.

CAP. XVI.

CHAP. XVI.

De naturâ sanguinis ipsiûs; et (ejûs) varietatibus et vitiis.
 Of the nature of the blood itself; and its varieties and disorders.

492. Multum abest ut sanguis ipse, motus et ditributio
It is very far from that the blood itself, the circulation and distribution
 cuiûs sunt adeo necessaria ad vitam, sit simplex humor que semper
of which are so essential to life, be a simple fluid and always
 idem. Continet varias partes, que, ut videtur, variâ
the same. It contains different parts, and, as it seems, of different
 utilitatis; et ipse est obnoxius suis varietatibus et vitiis.
utility; and itself is liable to its peculiar changes and disorders.

493. Missus e venis et receptus in idoneum vas, mani-
Drawn from the veins and received into a proper vessel, it mani-
 feste prodit, aliquatenus, suam naturam et compositionem,
festly sets forth, in some degree, its peculiar nature and composition,
 dummodo mutationes, quas subit sponte, attente
provided the changes, which it undergoes spontaneously, be attentively
 spectentur.
looked to.

494. Primo exhalat tenuem, fere aquosum, levissimè olidum
At first it exhales a thin, almost watery, slightly smelling
 vaporem, sed admodum parçâ quantitate; brevi cogitur in
vapour, but in very small quantity; it quickly is coagulated into
 profunde rubram, tremulam, mollissimam, massam, quiete, frigore, aère
a deeply red, tremulous, very soft, mass, by rest, cold, air
 admissio: paulo post, citiùs si massa fuerit secta,
being admitted: a little after, more quickly if the mass should be cut,
 quædam guttulæ tenuis, subflavi, pellucidi humoris exiliunt ex
some small drops of a thin, yellowish, pellucid fluid go out from
 superficie ejûs, quæ prodeuntes plures tandem coëunt
the surface of it, which coming forth many (numerously) at length run together
 que circumdant crassiorem partem, et separant a parietibus vasis.
and surround the thicker part, and separate it from the walls of the vessel.

495. Crassior pars, quæ sola rubet, accuratius explorata,
The thicker part, which alone is red, more accurately examined,
 ostendit ulteriorem compositionem: continet multum tenuioris partis,
shews an ulterior composition: it contains much of the thinner part,

CAP. XVI.—*De sanguinis ipsius natura; et varietatibus, et vitiis.*

492. MULTUM abest, ut sanguis ipse, cujus motus et distributio ad vitam adeo necessaria sunt, humor sit simplex, semperque idem. Varias partes, variæque, ut videtur, utilitatis, continet; et ipse suis varietatibus et vitiis obnoxius est.

493. E venis missus, inque idoneum vas receptus, suam naturam et compositionem aliquatenus manifeste prodit, dummodo quas sponte subit mutationes attente spectentur.

494. Tenuem vaporem primo exhalat, fere

aquosum, levissime olidum, sed parçâ admodum quantitate; quiete, frigore, admissio aère, brevi cogitur in massam profunde rubram, tremulam, mollissimam: paulo post, ex ejus superficie, citius si secta fuerit massa, guttulæ quædam humoris tenuis, subflavi, pellucidi, exiliunt, quæ plures prodeuntes coëunt tandem, partemque crassiorem circumdant, et a vasis parietibus separant.

495. Pars crassior, quæ sola rubet, accuratius explorata, ulteriorem ostendit compositionem: multum continet partis tenuioris, quæ vocatur serum: probe elota, ruborem suum amittit,

quæ vocatur serum: probe elota amittit suum ruborem, glutinosâ,
which is called serum: well washed it loses its redness, the glutinous,
 tenace, albidâ parte tamen superstite; hæc pars, nunc dicta
 tenacious, *whitish part however remaining; this part, now called*
fibrina a chemicis, olim habuit varia nomina, fibram sanguinis,
fibrine by chemists, formerly had various names, fibre of the blood,
 coagulabilem lympham, gluten.
coagulable lymph, gluten.

496. Crassamentum, præterea, continet innumeras rubras particulas,
The crassamentum, besides, contains innumerable red particles,
 vulgo dictas globulos, quæ impertiunt colorem universo sanguini.
commonly called globules, which impart their colour to the whole blood.
 Hæc, si explorantur ope microscopii, singulæ ostendunt
These, if they are examined by means of the microscope, each shew
 pulcherrimam fabricam, quæ tamen differt, haud parum, in
 a very beautiful structure, which however differs, not a little, in
 diversis animalibus.
different animals.

497. In homine, et plerisque aliis animalibus, sunt rotundæ et
In man, and most other animals, they are circular and
 planæ, instar nummi. Exterior pars, quæ sola rubet, est
flat, like money. The exterior part, which alone is red, is
 mantica seu vesicula, quæ continet centram partem, solidum globulum
a little bag or vesicle, which contains the central part, a solid globule
 ut videtur, multo minorem se.
as it appears, much smaller than itself.

498. Tenuis pars sanguinis, quæ vocatur serum, idoneo calore
The thin part of the blood, which is called serum, a proper heat
 admoto, quoque coit in albidam tenacem massam, dictam
being applied, also coagulates into a whitish tenacious mass, called
 albumen, satis similem fibrinæ, seu coagulabili lymphæ, quæ coit
albumen, pretty similar to fibrine, or coagulable lymph, which coagulates
 sponte: unde tenuior latex, dicitur serositas, potest exprimi;
spontaneously: from whence a thinner fluid, called serosity, can be pressed out;
 quæ continet aliquantum gelatinæ.
which contains a little (of) gelatine.

499. Demum, sanguini insunt (pro habet) varii sales soluti in ipsius
Lastly, the blood has various salts dissolved in its
 sero: imprimis phosphas sodæ, phosphas calcis, murias sodæ,
serum: especially phosphate of soda, phosphate of lime, muriate of soda,
 pura soda, et nonnihil hydrosulphureti ammoniæ.
pure soda, and a little (of) hydrosulphuret of ammonia.

superstite tamen parte glutinosa, tenace, al-
 bida; hæc pars, *fibrina a chemicis* nunc dicta,
 olim varia habuit nomina, fibram sanguinis,
 lympham *coagulabilem*, gluten.

496. Continet præterea crassamentum innumeras particulas rubras, vulgo globulos dictas, quæ colorem impertiunt universo sanguini. Hæc, si ope *microscopii* explorantur, singulæ pulcherrimam ostendunt fabricam, quæ tamen haud parum differt in diversis animalibus.

497. In homine, et plerisque aliis animalibus rotundæ sunt, et planæ, instar nummi. Exterior pars, quæ sola rubet, mantica seu vesicula

est, quæ partem centram, globulum ut videtur solidum, continet, multo se minorem.

498. Tenuis pars sanguinis, quæ vocatur serum, idoneo calore admoto, coit quoque in massam albidam, tenacem, *albumen* dictam, *fibrinæ* seu lymphæ *coagulabili*, quæ sponte coit, satis similem: unde tenuior latex, *serositas* dicitur, exprimi potest; quæ aliquantum *gelatinæ* continet.

499. Varii demum sales insunt sanguini, in sero ipsius soluti: *phosphas* imprimis *sodæ*, *phosphas calcis*, *murias sodæ*, *soda* pura, et nonnihil *hydrosulphureti ammoniæ*.

500. Totus sanguis, nedum coagulatus, qualis fluit e venâ,
The entire (of) the blood, not yet coagulated, such as it flows from a vein,
 coit calore multo minore quam qui sufficiat ad cogendum
coagulates at a heat much less than what suffices to coagulate
 serum; vero majore quam unquam accidit vivo homini.
the serum; but greater than ever occurs in the living man.

501. Rubræ particulæ, dum natant in sero, vel quovis simili
The red particles, whilst they swim in the serum, or any similar
 humore, qui continet aliquid salis solutum in se, aliquandiu
fluid, which contains something of salt dissolved in it, for some time
 bene conservant propriam figuram. Sed, dilutæ purâ aquâ,
perfectly preserve their proper figure. But, diluted with pure water,
 brevi tument, exterior vesicula distenditur in formam globi,
they quickly swell, the external vesicle is distended into the shape of a globe,
 et tandem rumpitur et solvitur, et centralis particula elabatur
and at length is broken and dissolved, and the central particle escapes
 ex eâ. Igitur hic videtur esse unus usus, neque forsitan
from it. Therefore this seems to be one use, nor perhaps
 minimus, seri que salium quos continet, diluere totam
the least, of the serum and of the salts which it contains, to dilute the entire
 massam sanguinis, et reddere mobilem, et conservare rubras
mass of blood, and render it moveable, and to preserve the red
 particulas integras, et figurâ quâ decet.
particles entire, and of the figure which it becomes (them).

502. Origo et finis et usus rubrarum particularum pariter
The origin and end (object) and use of the red particles (are) alike
 incerta atque obscura. Sunt qui opinantur centrales
uncertain and obscure. There are (those) who imagine that the central
 particulas formari in conglobatis glandulis resorbentium vasorum,
particles are formed in the conglobate glands of the absorbing vessels,
 et primâ ætate in thymo, resorberi in sanguinem,
and at the first age in the thymus, are reabsorbed into the blood,
 deferri ad varia organa corporis, et indui exteriore
are carried to the various organs of the body, and are clothed with the exterior
 rubrâ parte a splene, et demum reduci per resorbentia
red part by the spleen, and at length are brought back by the absorbing
 vasa ejus, ad cor. Sed hæc, et commenta hujusmodi, videntur
vessels of it, to the heart. But these, and expositions of such sort, seem
 parum firma.
no way certain.

503. Est non dubitandum quin particulæ fabricatæ tantâ curâ,
It is not to be doubted but that particles fabricated with so great care,

500. Totus sanguis, qualis e vena fluit nedum, coactus, calore coit multo minore quam qui ad serum cogendum sufficit; majore vero quam vivo homini unquam accidit.

501. Particulæ rubræ, dum in sero, vel simili quovis humore, natant, qui salis aliquid in se solum continet, propriam figuram aliquandiu bene conservant. Sed pura aqua dilutæ, brevi tument, vesicula exterior distenditur in formam globi, et rumpitur tandem, et solvitur, et particula centralis ex ea elabatur. Hic igitur videtur esse unus, neque forsitan minimus, usus seri saliumque quos continet, totam massam sanguinis diluere, et mobilem reddere, particu-

lasque rubras integras, et qua decet figurâ, conservare.

502. Origo, et finis, et usus particularum rubrarum pariter incerta atque obscura. Sunt qui opinantur, particulas centrales in glandulis conglobatis vasorum resorbentium, et prima ætate in thymo formari, in sanguinem resorberi, ad varia corporis organa deferri, et a splene parte exteriore rubra indui, et per ejus vasa resorbentia ad cor demum reduci.— Sed hæc et hujusmodi commenta parum firma videntur.

503. Non est dubitandum, quin particulæ tanta cura fabricatæ, insigni in corpore usui

inserviant insigni usui in corpore, quamvis hic sit hactenus
serve for an important use in the body, although this be hitherto
 parum cognitus. Non defuerunt qui opinati sunt,
little understood. There have not been wanting they who have imagined,
 nimirum, Iatro-mathematici, eas conferre quodammodo ad
namely, the Iatro-mathematicians, that they contributed in some way to
 gignendum animalem calorem; sed haud satis ratione. Certè
generate animal heat; but not with sufficient reason. Truly
 implent et distendunt majora vasa, neque intrant minora
they fill and distend the larger vessels, neither do they enter the smaller
 neque facile elabuntur e corpore. Videntur prodesse quodam-
(ones) nor easily escape from the body. They seem to avail in some
 modo ad nutrimentum corporis, repertæ quam plurimæ in valido
measure to the nutrition of the body, being found very numerous in a strong
 et bene pasto animale, paucissimæ in famelico et exhausto.
and well fed animal, very few in the starved and exhausted one.

504. Fibrina et albumen et gelatina quoque probe distendunt et
Fibrine and albumen and gelatine also fully distend and
 implent vasa, et impediunt ne vitalis humor effluat:
fill the vessels, and prevent that the vital fluid escape (from escaping):
 enim prorsus tenuis humor, instar aquæ, non sufficisset
for an altogether thin fluid, like water, would not have sufficed
 ad munera vitæ, quippe quem vasa patula innumeris
for the functions of life, as being one which vessels open with numberless
 ostiis non potuissent continere. Ista principia videntur imprimis
mouths would not have been able to retain. These principles seem especially
 conferre ad nutrimentum; quoniam et ipsa nutriunt
to contribute to nutrition; because both they themselves nourish
 multum, et omnia alimenta vertuntur, per duplicem concoctionem
very much, and all the aliments are converted, by a twofold concoction
 in corpore, primo in ventriculo et intestinis, postea in pulmonibus,
in the body, first in the stomach and intestines, afterwards in the lungs,
 in eadem (principia) priusquam impendantur ad alendum corpus,
into the same (principles) before that they are expended to support the body,
 et reparandam jacturam solidarum partium.
and to repair the waste of the solid parts.

505. Usus universæ massæ sunt varii, et maximi momenti.
The uses of the whole mass are various, and of the greatest moment.
 Imprimis probe distributa, excitat nervosum genus; videtur
First of all properly distributed, it excites the nervous system; seems
 conferre haud parum ad gignendum animalem calorem, que
to contribute not a little to generate animal heat, and

inserviant, quamvis hic parum hactenus cognitus sit. Non defuerunt qui opinati sunt, Iatro-mathematici nimirum, eas ad calorem animalem gignendum quodammodo conferre; sed haud satis valida ratione. Vasa majora certe implent atque distendunt, neque minora intrant, neque facile e corpore elabuntur. Ad nutrimentum corporis quodammodo prodesse videntur, in valido et bene pasto animale quam plurimæ, in famelico et exhausto paucissimæ repertæ.

504. Fibrina et albumen et gelatina quoque vasa probe distendunt et implent, et ne humor vitalis effluat impediunt: humor enim prorsus te-

nuis, instar aquæ, ad vitæ munera non sufficisset, quippe quem vasa innumeris ostiis patula non potuissent continere. Ad nutrimentum imprimis conferre videntur principia ista; quoniam et ipsa multum nutriunt, et omnia alimenta, per duplicem in corpore concoctionem, primo in ventriculo et intestinis, postea in pulmonibus, in eadem prius vertuntur, quam ad alendum corpus, et partium solidarum jacturam reparandam, impendantur.

505. Universæ massæ usus varii et maximi momenti sunt. Genus nervosum imprimis excitat, probe distributa; ad calorem animalem gignendum, eundemque per totum corpus dif-

diffundendum eundem per totum corpus; quin et sanguis est
to diffuse . the same through the whole body; moreover the blood is
 penus unde varil humores, apti varii muniis,
the store from whence the various fluids, fitted for their various offices,
 derivantur vel secernuntur.
are derived or secreted.

506. Partes sanguinis jam descriptæ, raro desunt; aliæ
The parts of the blood already described, rarely are wanting; (any) others
 raro reperiuntur in sanguine. Vero in quibusdam exemplis, fuit
rarely are found in the blood. But in some examples, there was
 aut nulla fibrina, aut tam parum ejus, aut ipsa adeo corrupta,
either no fibrine, or so little of it, or itself so corrupted,
 ut sanguis missus e venis non coiret, et rubræ particulæ,
that blood drawn from the veins did not coagulate, and the red particles,
 instar arenæ, peterent fundum vasis. Res pessimi
like sand, sought (fell to) the bottom of the vessel. A thing of the worst
 ominis.
omen.

507. Serum aliquando observatur album, instar lactis, quod
The serum is sometimes observed white, like milk, which
 videtur oriri ab adipe resumpto, que ne iterum redacto
seems to arise from the fat being taken up, and not again reduced
 in gluten. Serum etiam sæpe observatur præternaturam
(converted) into gluten. The serum also often is observed unnaturally
 flavum, propter bilem redeuntem in sanguinem.
yellow, on account of the bile returning into the blood.

508. Sanguis sæpe cogitur allâ minus solitâ ratione, et
The blood often is coagulated in another less usual manner, and
 crassamentum obducitur albâ tenace crustâ, instar corii.
the crassamentum is covered with a white tenacious crust, like leather.
 Hæc crustâ est nihil præter puram fibrinam coactam tardiùs
This crust is nothing except (but) pure fibrine coagulated more slowly
 solito, quo fit ut rubræ colorantes particulæ quodam-
than usual, whence it happens that the red colouring particles in some
 modo subsident.
degree subside.

509. Indicat nullum lentorem, densitatem, spissitatem, tenacitatem
It indicates no lentor, density, thickening, tenacity
 sanguinis ut diu fuit creditum, sed
of the blood (it does not indicate any, &c.), as for a long time was believed, bu
 potius tenuitatem, saltem minorem proclivitatem ad coagulationem.
rather a tenuity, at least a less tendency to coagulation.

fundendum, haud parum conferre videtur;
 quin et sanguis penus est, unde varii humores,
 variis muniis apti, derivantur vel secernuntur.

506. Sanguinis partes jam descriptæ raro desunt; raro aliæ in sanguine reperiuntur. In quibusdam vero exemplis, aut nulla fuit fibrina, aut tam parum ejus, aut ipsa adeo corrupta, ut sanguis e venis missus non coiret, et particulæ rubræ, instar arenæ, fundum vasis peterent. Res pessimi ominis.

507. Serum aliquando album, instar lactis, observatur, quod ab adipe resumpto, neque iterum in gluten redacto, oriri videtur. Sæpe

etiam præter naturam flavum observatur serum, propter bilem in sanguinem redeuntem.

508. Sæpe alia minus solita ratione cogitur sanguis, et crassamentum obducitur crusta albâ, tenace, instar corii. Hæc crusta nihil est præter puram fibrinam tardiùs solito coactam, quo fit ut particulæ rubræ colorantes quodammodo subsident.

509. Nullum, ut diu creditum fuit, sanguinis lentorem, densitatem, spissitatem, tenacitatem, indicat, sed potius tenuitatem, saltem minorem ad coagulationem proclivitatem. Oritur plerumque a vehementiore sanguinis intra corpus

Oritur, plerumque, a vehementiore agitatione seu conquassatione
It arises, for the most part, from a very violent agitation or shaking
 sanguinis intra corpus; hinc comitatur multas febres et
of the blood within the body; hence it accompanies many fevers and
 fere omnes inflammationes, et aliquando profluvia sanguinis,
almost all (kinds of) inflammations, and sometimes profluvia of blood,
 et febres quas eruptio super cutem comitatur, interdum
and fevers which an eruption upon the skin accompanies, sometimes
 plenitudinem corporis, aut dolorem, que multas irritaciones. Neque est
fulness of habit, or pain, and many irritations. Nor is
 talis crusta semper habenda morbosa, quippe quæ aliquando
such a crust always to be considered diseased, as being one which sometimes
 contingat sanissimis, veluti fœminis donec gerunt
belongs to the most healthy, as to women while they are carrying
 uterum, etiam a primis mensibus, et quibusdam validis
(a child in) the womb, even from the first months, and some strong
 laboriosis viris viventibus lautè, et sane omnibus hominibus,
labouring men living luxuriously, and indeed all persons,
 frequentius hiemale et verno tempore, quo robur
more frequently in the winter and spring time, in which the vigour
 solidarum partium, et actio vasorum quæ vehunt sanguinem,
of the solid parts, and the action of the vessels which carry the blood,
 est maxima. Quin et potest induci aut impediri a levissimis
greatest. Moreover it may be induced or be prevented by very slight
 causis, dum sanguis fluit, vel postquam receptus est in
causes, whilst the blood is flowing, or after it has been received into
 pateram, veluti formâ ipsius: ita ut sæpe nulla crusta obser-
the cup; as by the form of it: so that often no crust can be
 vetur in alterâ paterâ, in alterâ densissima et tenacissima.
observed in the one cup, in the other a very thick and tenacious one.

510. Hinc ratio redditur, cur sæpe conveniat mittere
Hence the explanation is given, why often it may be proper to let
 sanguinem dum talis crusta observatur, que corpus solet
blood whilst such a crust is observed, and the body is accustomed
 ferre jacturam ejus bene: quoque patet quantus et
to bear the loss of it well: (hence) also it is evident how great and
 quam plenus periculi fuit error eorum qui erant auctores
how full of danger was the error of those who were the authors
 mittendi sanguinem iterum que iterum, donec nulla crusta apparet
of drawing blood again and again, until no crust appeared
 amplius super eum, scilicet quam crediderunt morbosam partem
longer upon it, as being what they believed the diseased part

agitatione, seu conquassatione; hinc multas febres, et inflammationes fere omnes, et aliquando sanguinis profluvia, et febres quas eruptio super cutem comitatur, interdum corporis plenitudinem, aut dolorem, multasque irritaciones, comitatur. Neque semper morbosa habenda est talis crusta, quippe quæ sanissimis aliquando contingat; veluti fœminis, donec uterum gerunt, a primis etiam mensibus; et viris quibusdam validis, laboriosis, laute viventibus; et omnibus sane hominibus, frequentius tempore hiemale et verno, quo robur solidarum partium et actio vasorum quæ sanguinem

vehunt, maxima est (467). Quin et a levissimis causis, dum fluit sanguis, vel postquam in pateram receptus est, veluti ipsius forma, induci aut impediri potest: ita ut sæpe in altera patera nulla, in altera densissima et tenacissima crusta observetur.

510. Hinc ratio redditur cur sæpe, dum talis crusta observatur, sanguinem mittere conveniat, ejusque jacturam corpus bene ferre solet: patet quoque quantus eorum error fuit, et periculi quam plenus qui auctores erant sanguinem iterum iterumque mittendi, donec nulla amplius crusta super eum apparet; scilicet

sanguinis. Profecto est utilissimum signum medico, quamvis
of the blood. Truly it is a most useful sign to the physician, although
 multum absit ut debeat respicere ad illud solum.
it is very far from that he ought to look to it alone.

511. Eadem fibrina sanguinis, nonnunquam dum homo vivit, vero
The same fibrine of the blood, sometimes while the man lives, but
 sæpius post mortem, imprimis si adfuerit aliquod vitium
oftener after death, especially if there have been any disorder
 organi, amplificatio, obstructio, &c. coit in tenacem massam,
of the organ, enlargement, obstruction, &c. congeals into a tenacious mass,
 in magnis vasis prope cor, aut in sacculis cordis
in the great vessels near the heart, or in the cavities of the heart
 ipsiûs, quæ vocatur Polypus. Similes massæ quoque formantur
itself, which is called Polypus. Similar masses also are formed
 haud raro in utero, et vocantur Molæ.
not unfrequently in the uterus, and are called Moles.

512. Quantitas universæ massæ, et singularum partium san-
The quantity of the whole mass, and of the individual parts of the
 guinis, haud facillè reducitur ad mensuram. Potest variare multum,
blood, is not easily reduced to measure. It may vary much,
 sanitate adhuc salvâ: quod si fuerit vel nimium, vel
the health still being safe: but if there should be either too much, or
 nimis parum sanguinis in corpore, vel proportio partium ejûs
too little (of) blood in the body, or the proportion of the parts of it
 fuerit facta aliena, demum vitium erit non leve,
should be made irregular, at length the disorder will be no slight one,
 et sæpe causa multorum et gravium morborum.
and often a cause of many and severe diseases.

513. Nimia copia sanguinis colligitur usu multi validi,
Too great a quantity of blood is collected by the use of much strong,
 pinguis cibi, præsertim ex carnibus, et validi potûs, (modo
rich food, especially of flesh, and of strong drink, (provided
 concoctio sit bona,) et otiososo et sedentario genere vitæ, et
the digestion be good,) also by an idle and sedentary kind of life, and
 multo somno, præsertim in iis qui prius solebant exercere
by much sleep, especially in those who before were accustomed to exercise
 sese multum; solitis exinanitionibus cohibitis; consuetudine
themselves very much; by the usual evacuations being restrained; by the habitual
 exinanitionum, qualescunque fuerint, nimirum quæ
use of evacnants, whatever kind they may be, that is (those) which
 minuant vitalem vim, et faciant excretiones languere; præ
diminish the vital power, and cause the excretions to languish; above

quam morbosam sanguinis partem credebant. Utilissimum profecto medico signum est, quamvis multum absit, ut ad illud solum respicere debeat.

511. Eadem fibrina sanguinis, nonnunquam dum vivit homo, sæpius vero post mortem, imprimis si vitium aliquod organi, amplificatio, obstructio, &c. adfuerit, in magnis vasis prope cor, aut in ipsius cordis sacculis, coit in massam tenacem, quæ vocatur Polypus. Similes massæ quoque haud raro in utero formantur, et Molæ vocantur.

512. Quantitas universæ massæ, et singularium partium sanguinis, haud facile ad men-

suram reducitur. Multum variare potest, salva adhuc sanitate: quod, si vel nimium sanguinis vel nimis parum in corpore fuerit, vel aliena ejus partium proportio facta fuerit, vitium demum erit, non leve, et sæpe multorum et gravium morborum causa.

513. Nimia sanguinis copia colligitur usu multi cibi, validi, pinguis, ex carnibus præsertim, et potus validi (modo concoctio bona sit), et vitæ genere otioso et sedentario, et multo somno, præsertim in iis qui prius multum sese exercere solebant; exinanitionibus quibusvis solitis cohibitis; consuetudine exinanitionum, qualescunque fuerint, nimirum quæ vim vita-

omnibus, exhalatione per cutem vel sudorē,
all, by the exhalation by the skin (insensible perspiration) or the-sweat,
 aut suppressis aut paulatim deficientibus. Homines laxi et
either being suppressed or gradually failing. Persons lax and
 debiles (quoad) constitutionem corporis, sunt præ aliis obnoxii
weak (as to) their constitution of body, are more than others subject
 huic vitio.
to this disorder.

514. Multa mala oriuntur a nimia plenitudine. Homo
Many diseases arise from excessive fulness. A person
 nonnunquam fere opprimitur, fit hebes, languidus, debilis, neque
sometimes is almost borne down, becomes dull, languid, weak, nor
 organa ipsa quæ movent sanguinem, valent ad impellendum
are the organs themselves which move the blood, able to drive forward
 tantum onus. Pulsus languet, et syncope, et vertigo, et
so great a load. The pulse languishes, even syncope, and vertigo, and
 palpitation aliquando observantur. Vero sæpius vasa nimis
palpitation sometimes are observed. But more frequently the vessels being over
 distenta, fiunt proclivia ad præter solitum vehementes et abnormes motus.
distended, become disposed to unusually violent and irregular motions.

515. Hinc proclivitas (oritur) ad febres, inflammationes, inæqualem
Hence a tendency to fevers, inflammations, irregular
 distributionem sanguinis, insolitas congestiones ejûdem, lacerationes
distribution of blood, unusual congestions of the same, ruptures
 vasorum, et profuvia sanguinis. Porro, ob arctum nexum
of vessels, and flowings of blood. Moreover, because of the close connexion
 inter vasa vehentia sanguinem et nervosum genus, nimia
between the vessels carrying blood and the nervous system, excessive
 mobilitas, et proclivitas ad spasmos et alios morbos ejûdem generis,
irritability, and tendency to spasms and other diseases of the same kind,
 oriuntur a plenitudine.
arise from fulness.

516. Hinc intelligitur cur aliquando obscurus pulsus, aliquando
Hence is understood why sometimes an obscure pulse, sometimes
 validus vel durus comitetur plenitudinem; cur ipsa (plenitudo)
a strong or hard one accompanies fulness; why it is
 causa et pars tot morborum; cur sæpe (est) effectus prosperæ
a cause and part of so many diseases; why often it is the effect of good
 valetudinis; quâ ratione optime adimatur; vel novis exinanitionibus
health: by what means it may be best removed; whether by new evacuations

lem minuant, et excretiones languere faciant; præ omnibus, exhalatione per cutem vel sudore aut suppressis, aut paulatim deficientibus. Homines corporis constitutionem laxi et debiles, præ aliis, huic vitio sunt obnoxii.

514. Multa mala a nimia plenitudine oriuntur. Homo nonnunquam fere opprimitur, hebes, languidus, debilis fit, neque ipsa quæ sanguinem movent organa ad tantum onus impellendum valent. Pulsus languet, et aliquando *syncope*, et vertigo, et palpitation observantur. Sæpius vero vasa nimis distenta, ad motus præter solitum vehementes et abnormes proclivia fiunt.

515. Hinc proclivitas ad febres, inflamma-

tiones, inæqualem sanguinis distributionem, insolitas ejusdem congestiones, vasorum lacerationes, et sanguinis profuvia. Porro, ob arctum inter vasa sanguinem vehentia et *genus nervosum* nexum, mobilitas nimia, et proclivitas ad *spasmos*, et alios ejusdem generis morbos, a plenitudine oriuntur.

516. Hinc intelligitur cur aliquando pulsus obscurus, aliquando validus vel durus plenitudinem comitetur: cur ipsa tot morborum causa et pars; cur sæpe prosperæ valetudinis effectus; quâ ratione optime adimatur; vel uovis institutis exinanitionibus, vel antiquis et suppressis resitutis, vel diætâ tenui et parca, et valida et crebra corporis exercitatione.

institutis, vel antiquis et suppressis restitutis, vel tenui
being instituted, or the old and suppressed ones being restored, or by a slender
 et parvâ diætâ, et validâ et crebrâ exercitatione.
and spare diet, and by powerful and frequent exercise.

517. Medici crediderunt se perspexisse quoque haud paucas
Physicians have believed that they had observed also not a few
 alias species plenitudinis diversas ab hac verâ et absolutâ de
other kinds of fulness differing from this true and absolute (one) about
 quibus ratiocinati sunt multum, quamvis sæpe nimiam subtilitate.
which they have reasoned a great deal, although often with too much subtlety.

518. Vocatur plenitudo ad spatium, siquando copia sanguinis
It is called plethora ad spatium (of space), whenever the quantity of blood
 que mole ejus auctis nihil præter solitum,
and the bulk (volume) of it being increased nothing beyond what is usual,
 vasa quæ continent eum (sanguinem) constringuntur, coarctantur, ita
the vessels which contain it are constricted, straitened, so
 ut ægrè, nec sine incommodo, contineant
that difficultly, nor without inconvenience, can they hold (so as with difficulty,
 nor without inconvenience, to hold) solitam copiam et molem sanguinis,
like as the extreme and minute vessels being constricted by fever attacking,
 aut subito terrore, aut magno frigore: vel vasis ipsi
or by sudden terror, or by great cold: or the vessels themselves
 demum concretescentibus, que nonnullis eorum factis imperviis,
at length growing together, and some of them having become impervious,
 veluti in senibus; vel, denique, corpore ipso mutilato membro
as in old persons; or, lastly, the body itself being mutilated by a limb
 amputato.
being amputated.

519. Alia spuria plenitudo, dicta ad molem dicitur accidere
Another spurious plethora, named ad molem (of volume) is said to happen
 sicubi sanguis ipse, non auctus quantitate, expanditur, augetur
whenever the blood itself, not increased in quantity, is expanded, is increased
 mole, que distendit vasa continentia non secus ac vera
in volume, and distends the vessels containing it in like manner as real
 plenitudo. Ingens calor, vel externus, vel a febre, aut exercitatione,
fulness. Great heat, either external, or from fever, or exercise,
 aut stimulantibus (oriens), fertur induxisse hoc genus mali,
or stimulants, is said to have induced this kind of disorder,
 nimirum, sanguine, pro parte rata rarefacto plus quam vasa
that is, the blood, in respect of the part being rarefied more than the vessels

517. Alias quoque haud paucas plenitudinis species, ab hac vera et absoluta diversas, medici crediderunt se perspexisse, de quibus multum, quamvis sæpe nimia subtilitate, ratiocinati sunt.

518. Plenitudo ad spatium vocatur, siquando, copia sanguinis ejusque mole nihil præter solitum auctis, vasa quæ eum continent, constringuntur, coarctantur, ita ut solitam sanguinis copiam et molem ægre, nec sine incommodo, contineant: veluti vasis extremis et minutis multum constrictis, ingruente febre, aut subito terrore, aut magno frigore; vel de-

mum vasis ipsis, veluti in senibus, concretescentibus, eorumque nonnullis imperviis factis: vel denique, ipso corpore, amputato membro, mutilato.

519. Plenitudo alia, spuria, ad molem dicta, accidere dicitur, sicubi sanguis ipse, quantitate non auctus, expanditur, mole augetur, vasaque continentia non secus ac vera plenitudo distendit. Ingens calor, vel externus, vel a febre, aut exercitatione, aut stimulantibus, hoc mali genus induxisse fertur sanguine nimirum pro parte plus rarefacto, quam vasa relaxata essent. Quin et insolita, præ-

essent relaxata. Quin et, insolita, præsertim subita levitas
 were relaxed. Moreover, an unusual, especially sudden lightness (rarity)
 æris, qualis accidit a magnâ mutatione tempestatis
 of the air, such as occurs from a great change of the temperature (of the
 weather), or happens to persons who ascend high mountains,
 est dicta rarefacere sanguinem, aëre quem habet expanso.
 has been said to rarefy the blood, by the air which it contains being expanded.
 Annon Iatro-mathematici aliquando hallucinati sunt nonnihil de his
 (Have) not the Iatro-mathematicians occasionally mistaken a little on these
 rebus, credentes molem sanguinis augeri, quum auctus
 subjects, believing that the volume of the blood was increased, when the increased
 impetus ejûs, propter calorem, vehementem exercitationem, que alia
 impetus of it, through heat, violent exercise, and other
 stimulantia, potius esset in vitio?
 stimulants, rather was in fault?

520. Talis abundantia sanguinis qualis opprimat moventis vires vocatur
 Such an abundance of blood as oppresses the moving powers is called
 plenitudo ad vires. Plenitudo hujûsmodi semper efficit ingens incommodum,
 plethora ad vires. Plethora of this kind always causes great inconvenience,
 et igitur potest dici ad vires. Tamen, vitium
 and therefore it may be named against the strength. However, a disorder
 istiusmodi frequenter observatur, si vires ægri fuerint
 of the same sort is frequently observed, if the strength of the sick have been
 multum fractæ quâcunque causâ, vel ab exiguo excessu
 much broken (reduced) by any cause, even from a trifling excess
 sanguinis, qualem validus homo tulisset impunè.
 of blood, such as a strong person would have borne with impunity.

521. Facilè patebit varia genera plenitudinis posse simul
 It will easily appear that the different kinds of fulness may at the same
 accidere eidem homini, que graviora mala sæpe proflux-
 time occur to the same person, and that very severe evils often will pro-
 ura esse tali conjunctione.
 ceed from such a combination.

522. Inopia sanguinis quoque nocet multum: debilitat hominem,
 Scarcity of blood also injures very much: it debilitates a person,
 reddit impotentem ad munera vitæ, facit motum sanguinis
 renders him unable for the duties of life, causes the motion of the blood
 languere, et tandem inducit syncopen, convulsiones, mortem: si
 to languish, and at length brings on syncope, convulsions, death: if

sertim subita, æris levitas, qualis a magna tempestatis mutatione accidit, vel hominibus contingit qui altos montes ascendunt, sanguinem rarefacere, expanso quem habet aëre, dicta est. Annon aliquando de his rebus nonnihil hallucinati sunt, Iatro-mathematici molem sanguinis credentes augeri, quum auctus ejus impetus (452, 458, 467) propter calorem, exercitationem vehementem, aliaque stimulantia, potius in vitio esset?

520. Plenitudo ad vires vocatur, talis sanguinis abundantia, qualis vires moventes opprimat (514). Ingens plenitudo hujusmodi incommodum semper efficit, et igitur ad vires

dici potest. Frequenter tamen observatur istiusmodi vitium, vel ab exiguo sanguinis excessu, qualem validus homo impune tulisset, si vires ægri quacunque causa multum fractæ fuerint.

521. Facile patebit varia plenitudinis genera eidem homini simul accidere posse, gravioraque mala a tali conjunctione sæpe esse profluxura.

522. Inopia sanguinis multum quoque nocet; hominem debilitat, ad omnia vitæ munera impotentem reddit, motum sanguinis languere facit, syncopen, convulsiones, et mortem tandem inducit: si levior fuerit defectus et diuturnior,

defectus fuerit leuior, et diuturnior, corpus marcescit ob
the deficiency should be less, but longer continued, the body emaciates through
 defectum nutrimenti, que functiones ipsius vitiantur variis modis.
deficiency of nutriment, and the functions of it are vitiated in various ways.

523. Talis inopia oritur a longâ inediâ, pravo cibo, parum
Such a dearth arises from long fasting, bad food, no way
 nutriente, pravâ concoctione vel boni cibi, aut itinere
nourishing, depraved concoction even of good food, or the passage
 nutrimenti parati ex eo in sanguinem impedito; aut feбри-
of the nutriment prepared from it into the blood being obstructed; or from
 bus, que aliis morbis qui exhauriunt corpus et impediunt
fevers, and other diseases which exhaust the body and impede
 nutrimentum; vel demum a variis exinanitionibus, præsertim
(its) nourishment; or at length from various evacuations, chiefly
 sanguinis, imprimis si hæ fuerint subitæ; enim vasa accommodant
of blood, especially if they should be sudden; for the vessels accommodate
 se in mirum modum lentis exinanitionibus: præterea, si
themselves in a wonderful manner to slow evacuations: besides, if
 corpus depletur lente, excretiones minuuntur propter defectum
the body is emptied slowly, the excretions are diminished through defect
 vitalis vis, ita ut insolitum dispendium, pro parte saltem, facile
of vital power, so that the unusual expenditure, in part at least, is easily
 compensetur insolita retentione. Quod si exinanitio fuerit subita
compensated by unusual retention. But if the evacuation should be sudden
 et magna, potest vel esse brevi lethalis vel frangere ita ho-
and great, it may either be (prove) quickly fatal or break up so the
 minem ut nunquam plene convalescat.
person (constitution,) that he never perfectly recovers.

524. Magna aut diuturna inopia sanguinis potest vix non
Great or long-protracted deficiency of blood can scarcely not
 vitiare qualitates ejus humoris. Nimirum, tenuior pars facile
vitiates the qualities of that fluid. Without doubt, the thinner part is easily
 et citò reparatur; vero crassa pars, fibrina, et rubræ particulae,
and quickly repaired; but the thick part, the fibre, and red particles,
 haud ita facilè (reparantur). Hinc (est) tenuis, pallidus, vix rubens
not so easily. Hence the thin, pale, scarcely red
 sanguis, neque bene concrescens neque bene nutriens corpus.
blood, neither perfectly concreting nor perfectly nourishing the body.

525. Porro, sanguis fit nimis tenuis multo præsertim aquoso
Moreover, the blood becomes too thin by much especially watery
 potu, tenui et parum nutriente cibo, pravâ concoctione in ventriculo,
drink, poor and no way nourishing diet, depraved concoction in the stomach,

corpus marcescit, ob defectum nutrimenti, et functiones ipsius variis modis vitiantur.

523. Talis inopia oritur a longa inedia, cibo pravo, parum nutriente, vel boni cibi prava concoctione, aut impedito nutrimenti ex eo parati in sanguinem itinere; aut febris, aliisque morbis qui corpus exhauriunt et nutrimentum impediunt; vel demum a variis exinanitionibus, sanguinis præsertim, imprimis si hæ subitæ fuerint: lentis enim exinanitionibus vasa mirum in modum se accommodant: præterea, si lente depletur corpus, excretiones minuuntur, propter vis vitalis defectum, ita ut retentione insolita, insolitum

dispendium pro parte saltem facile compensetur. Quod si subita et magna fuerit exinanitio, vel brevi lethalis esse potest, vel hominem ita frangere, ut nunquam plene convalescat.

524. Inopia sanguinis magna aut diuturna qualitates ejus humoris vix potest non vitiare. Nimirum, pars tenuior facile et cito reparatur; pars vero crassa, fibrina, et particula rubræ, haud ita subito. Hinc sanguis, tenuis, pallidus, vix rubens, neque bene concrescens, neque corpus bene nutriens.

525. Fit porro nimis tenuis sanguis, multo potu, præsertim aquoso, cibo tenui, et parum nutriente, prava concoctione in ventriculo, vel

vel forsitan in pulmonibus; que organis ipsis, quæ fingunt
or perhaps in the lungs; and the organs themselves, which elaborate
 crassiores partes, habentibus se male; solitis tenuibus excretionibus,
the thicker parts, having themselves badly; the usual thin excretions,
 scilicet sudore et urinâ, suppressis, veluti frigore aut vitio
for instance the sweat and urine, being suppressed, as by cold or disorder
 organorum; vel, demum, ut fere omnes medici putarunt,
of their organs; or, lastly, as almost all physicians have thought,
 putridâ corruptione universi corporis, et præsertim humorum: sed
by a putrid corruption of the whole body, and especially of the fluids: but
 est controversia de hac re; et si opinio sit ita
there is a controversy upon this subject; and if the opinion should be like
 ut fuit olim, tum est perspicuum alia vitia præter meram
as it was formerly, then it is manifest that other disorders besides mere
 tenuitatem sanguinis plerumque concurrere.
attenuation of the blood for the most part concur.

526. Nimis tenuis vel aquosus sanguis facit vultum pallidum,
A too thin or watery blood renders the countenance pale,
 corpus debile, languidum, torpidum, solidas partes laxas, flaccidas,
the body weak, languid, torpid, the solid parts lax, flaccid,
 ob defectum nutrimenti, et nimiam quantitatem humidæ materia
through defect of nourishment, and the excessive quantity of fluid material
 in compage, inducit aquosas hydropicas effusiones in omni parte
in the system, brings on watery dropsical effusions in every part
 corporis; nimirum, exhalatione tenuis humoris, qui irrorat
of the body; that is, the exhalation of the thin fluid, which bedews
 omnia cava organa corporis, auctâ, partim ob sanguinem
all the hollow organs of the body, being increased, partly because of the blood
 ipsum nimis solutum, et elabentem facilius et copiosius
itself being too much dissolved, and escaping more easily and more copiously
 justo, partim ob vasa præter solitum relaxata,
than proper, partly on account of the vessels (being) unusually relaxed,
 neque renitentia ut decet: quin et, tantum abest ut resorbentes
nor resisting as they ought: moreover, so far is it from that the absorbing
 venæ in hoc statu hauriunt plus quam solent illius exhalati
veins in this state take up more than they are accustomed of that exhaled
 humoris, ut hæ quoque participes generalis debilitas, vix valeant
fluid, that they also partakers of the general debility, scarce are able
 ad sua solita munera.
for their ordinary functions.

527. Verum enimvero Natura ipsa plerumque præcavit a
But indeed Nature herself for the most part has provided against

forsitan in pulmonibus; ipsisque organis quæ partes crassiores fingunt male se habentibus; suppressis excretionibus solitis tenuibus, sudore acilicet et urina, veluti frigore, aut vitio organorum; vel demum, ut omnes fere medici putarunt, putrida universi corporis, et humorum præsertim, corruptione: sed de hac re controversia est; et si ita sit ut olim opinio fuit, tum præter meram tenuitatem, perspicuum est alia plerumque sanguinis vitia concurrere.

526. Sanguis nimis tenuis vel aquosus facit vultum pallidum, corpus debile, languidum, torpidum, partes solidas laxas, flaccidas, ob defectum nutrimenti, et nimiam humidæ ma-

teris in compage quantitatem (82, 88); effusiones aquosas hydropicas in omni corporis parte inducit, aucta nimirum exhalatione humoris tenuis qui omnia cava corporis organa irrorat, partim ob sanguinem ipsum nimis solutum, et facilius et copiosius justo elabentem, partim ob vasa præter solitum relaxata, neque ut decet renitentia: quin et tantum abest ut venæ resorbentes in hoc statu plus quam solent illius exhalati humoris hauriant, ut hæ quoque, generalis debilitatis participes, vix ad solita sua munera valeant.

527. Verum enimvero, Natura ipsa a tot tantisque malis simplicissimo plerumque modo

tot que tantis malis simplicissimo modo; neque
so many and such great evils in a most simple manner; nor does
 sanguis fit nimis tenuis adeo facillè ut multi crediderunt: neque, si
the blood become too thin so easily as many have believed: nor, if
 fuerit factus ita, idoneum remedium deest. Nam, si corpus
it should have become so, is a proper remedy wanting. For, if the body
 est alioquin sanum, tenuiores excretiones multum augmentur, fere
is otherwise sound, the thinner excretions are greatly increased, almost
 statim, et tota massa sanguinis, sæpe, brevi tempore, denuo
immediately, and the entire mass of blood, often, in a short time, is again
 reducitur ad justam spissitatem.
reduced to a proper thickness.

528. Aliud et oppositum vitium sanguinis huic, scilicet, nimia
Another and an opposite disorder of the blood to this, namely, excessive
 spissitudo, qualem medici sæpe finxerunt, est observatum
spissitude, such as physicians often have imagined, has been observed
 rarissimis, si in ullis, exemplis. Asseruerunt (medici) tale vitium
in very few, if in any, examples. They have asserted that such a disorder
 oriri a spisso, sicco, tenaci, glutinosa cibo, vel a defectu
arose from thick, dry, tenacious, glutinous food, or from deficiency
 potûs, vel ab excessu tenuium excretionum, puta, a calore,
of drink, or from excess of the thin excretions, for instance, by heat,
 exercitatione, &c. Tamen, exempla talis vitii, vel compositorum
exercise, &c. However, examples of such a disorder, or of the compound
 morborum quæ deriventur ex eo, haud facillè ostenduntur. Profecto
diseases which are derived from it, are not easily shown. Truly
 quorundam, imprimis febrium et inflammationum, quos placuit
of some, especially of fevers and inflammations, which it has pleased
 medicis referre huc, est plane alia ratio.
physicians to refer to this head, there is evidently a different explanation.

529. Quin, humanum corpus est ita constitutum a sapiente
Moreover, the human body has been so constituted by the wise
 Opifice rerum, ut, quamprimum sanguis fuerit redactus ad
Fabricator of things, that, as soon as the blood has been reduced to
 justam spissitatem, vel minimum quam ultra, tenues excretiones
its due consistency, or the least possible beyond it, the thin excretions
 vel supprimantur vel minuuntur, et corpus simul trahat plus
either are suppressed or are diminished, and the body at the same time abstracts more
 humoris ab aëre; tunc sitis quoque oritur, et quantum
moisture from the air (atmosphere); then thirst also arises, and as much as
 fuerit opus ad diluendum sanguinem bibitur. Quod si aqua
was necessary to dilute the blood is drunk. But if the water

præcavit; neque adeo facile, ut multi crederent, sanguis nimis tenuis fit: neque si ita factus fuerit, deest idoneum remedium. Nam statim fere, si corpus alioquin sanum est, excretiones tenuiores multum augmentur, et tota sanguinis massa, sæpe brevi tempore, ad justam spissitatem denuo reducitur.

528. Aliud et huic oppositum sanguinis vitium, nimia scilicet spissitas, qualem medici sæpe finxerunt, rarissimis si in ullis in exemplis observatum est. Tale vitium a cibo spisso, sicco, tenace, glutinoso, vel a defectu potus, vel ab excessu excretionum tenuium, puta a calore, exercitatione, &c. oriri asseruerunt.

Haud facile tamen ostenduntur exempla talis vitii, vel morborum compositorum qui ex eo deriventur. Quorundam profecto, febrium imprimis, et inflammationum, quos medicis huic referre placuit, alia plane ratio est.

529. Ita enim corpus humanum a sapiente rerum Opifice constitutum est, ut quamprimum sanguis ad justam spissitatem, vel quam minimum ultra, redactus fuerit, excretiones tenues vel supprimantur vel minuuntur, et corpus simul plus humoris ab aëre trahat; sitis quoque tunc oritur, et quantum opus fuerit ad sanguinem diluendum bibitur. Quod si ipsa aqua deficit, neque miseri importunissimæ sitis,

ipsa deficit, neque possunt miserī indulgere inportu-
itself fails, nor can the wretched persons indulge (satisfy) the very
 uissimæ siti quæ urget eos ad bibendum, demum tum tantum
urgent thirst which urges them to drink, even then so far is it
 abest ut sanguis spissetur, ut auctoribus ipsis qui stre-
from that the blood be inspissated, that the authors themselves who most
 nuissimè tuentur commenta hujusmodi de vitiiis humorum
strenuously defend theories of this kind concerning the disorders of the fluids
 fatentibus, putredine ortâ vel auctâ, (sanguis) multum
confessing, putridity having arisen or being increased, it is much
 solvatur, et fit acer que tenuis, ægre continendus suis
dissolved, and becomes acrid and thin, with difficulty to be retained in its
 vasis.
vessels.

530. Medici scripserunt multum de acrimoniâ humorum, et
Physicians have written a great deal on the acrimony of the fluids, and
 conati sunt ædificare ingentem molem super hoc tenue et lubricum
have endeavoured to build a mighty structure upon this slender and slippery
 fundamentum.
foundation.

531. Profecto, pleraque commenta medicorum de acrimoniâ
Indeed, most (of the) theories of physicians concerning the acrimony
 humorum jam obsoluerunt, et merito negliguntur tanquam
of the fluids have now grown obsolete, and deservedly are neglected as
 falsa, vel saltem incerta, et nihil conducentia ad medicum usum;
false, or at least uncertain, and in no way conducing to medical practice;
 et nunc graves controversiæ existunt etiam de iis acrimoniis
and now serious controversies exist even about those acrimonies
 quæ, consensu fere omnium, sunt diu habitæ certæ et
which, by the consent of almost all, were long considered certain and
 manifestæ. Et fatendum est esse adhuc locum dubitandi
evident. And we must confess that there is still room for doubting
 etiam de his, verbi gratiâ, de putredine humorum. Vero
even about them, for example, about the putridity of the fluids. But
 interim, dum lis est sub judice, decet cavere,
in the mean time, whilst the dispute is under the judge, it becomes us to take care,
 dum vitamus unum errorem, ne curramus in alium vix
whilst we avoid one error, that we do not run into another hardly
 minorem, et male negligamus rem alicujus momenti, saltem in
less, and badly neglect a matter of some moment, at least in
 medicâ re, quamvis non tanti ut fuit opinio olim.
medical practice, although not (of) so great as was the opinion formerly.

quæ eos ad bibendum urget, indulgere possunt, tum demum, tantum abest ut sanguis spissetur, ut fatentibus ipsis auctoribus qui hujusmodi commenta de vitiiis humorum strenuissime tuentur, orta vel aucta putredine, multum solvatur, et acer tenuisque fiat (525), ægre suis vasis continendus.

530. De acrimonia humorum multum scripserunt medici, et super hoc tenue et lubricum fundamentum, ingentem molem ædificare conati sunt.

531. Obsoluerunt profecto jam, et merito negliguntur, pleraque medicorum commenta

de humorum acrimoniis, tanquam falsa, vel incerta saltem, et nihil ad usum medicum conducentia: et graves nunc existunt controversiæ de iis etiam acrimoniis quæ diu, omnium fere consensu, certæ et manifestæ sunt habitæ. Et fatendum est, de his etiam, verbi gratia, de humorum putredine, adhuc locum esse dubitandi. Interim vero, dum lis sub judice est, cavere decet, ne dum unum errorem vitamus, in alium curramus, vix minorem, et rem alicujus saltem momenti in re medica, quamvis non tanti ut olim opinio fuit, male negligamus. Juvabit certe novisse quæ de

Certe, juvabit novisse quæ visa sunt aut certa aut maxime
At least, it will benefit to know what have seemed either certain or most
 verisimilia de hac re.
probable concerning this matter.

532. Sanguis, aliquantulum acer in sanissimo homine, potest fieri
The blood, a little acrid in the most healthy person, may become
 nonnihil acrior variis causis, et facere multa que ne levia
somewhat more acrid from various causes, and produce many and no slight
 mala: incitata actio cordis, aut arteriarum, aut secretorum
evils: the quickened action of the heart, or arteries, or secreting
 organorum, ab acris ingestis, docet: humores præter solitum
organs, from acrids being ingested, teaches: humours unusually
 acres secreti, et vasa aliquando multum stimolata, nonnunquam
acrid being secreted, and the vessels sometimes very much stimulated, occasionally
 planè inflammata, vel demum erosa, docent.
outright inflamed, or even eroded, teach.

533. Plurima acria revera ingeruntur quotidie in corpus: autem
Very many acrids indeed are ingested daily into the body: but
 hæc vel corriguntur, concoquuntur, permutantur in ventriculo, et
these either are corrected, are digested, are changed in the stomach, and
 pulmone, priusquam veniunt in sanguinem aortæ, diffundenda
lungs, before that they come into the blood of the aorta, to be diffused
 per totum corpus; vel saltem diluta plurimâ aquâ, vel
through the whole body; or at least diluted with a great deal of water, or
 obtusa fibrinâ, albumine, gelatinâ, deponunt multum suæ
blunted with fibrine, albumen, gelatine, lay aside (lose) much of their
 acritudinis, et assidue excernuntur, tanquam noxia, e corpore.
acrimony, and are constantly excreted, as noxious, from the body.

534. Hoc modo, ingens copia acidi, alcalini, medii,
In this manner, a great quantity of acidulous, alkaline, neutral,
 veluti, communis salis, potest transire per corpus, valetudine
for example, common salt, may pass through the body, the health
 parum vel nihil affectâ. Quod, si quantitas ejus fuerit
being little or not at all affected. But, if the quantity of it should be
 nimia, que hæc ne probe diluta, neque excreta, tum demum
excessive, and this not properly diluted, nor excreted, then indeed
 nocebit.
it will hurt.

535. Videtur quoque verisimile, quamvis medici non desint
It seems also probable, although physicians are not wanting
 qui dubitant de hoc, hominem, etiam usque dum (is) vivit, putrescere,
who doubt of this, that man, even so long as he lives, putrefies,

hac re aut certa aut maxime verisimilia visa sunt.

532. Sanguis in sanissimo homine aliquantulum acer, variis causis nonnihil acrior fieri potest, et multa neque levia mala facere: docet incitata cordis, aut arteriarum, aut organorum secretorum, actio, ab acris ingestis: docent humores secreti præter solitum acres, et vasa aliquando multum stimolata, nonnunquam planè inflammata, vel demum erosa.

533. Plurima acria revera ingeruntur quotidie in corpus: autem ingeruntur: hæc autem in ventriculo, et intestinis, et pulmone, vel corriguntur, conco-

quantur, permutantur, priusquam in sanguinem aortæ veniunt, per totum corpus diffundenda; vel saltem plurimâ aquâ diluta, vel fibrinâ, albumine, gelatinâ, obtusa, multum suæ acritudinis deponunt, et assidue e corpore tanquam noxia excernuntur.

534. Hoc modo ingens copia salis acidi, alcalini, medii, veluti communis, per corpus transire potest, valetudine parum vel nihil affectâ. Quod si nimia quantitas ejus fuerit, neque hæc probe diluta, neque excreta, tum demum nocebit.

535. Verisimile quoque videtur, quamvis non desint medici qui de hoc dubitant, hominem

que gignere sive evolvere multum salem sui generis,
and generates or evolves much salt of its own (a peculiar) kind,
 qui possit non inepte dici animalis: scilicet magna
which may not improperly be called the animal (salt): because a great
 pars omnium (victuum?) quos ingerimus vertitur in hunc salem, et
part of all the things which we ingest is changed into this salt, and
 exit e corpore cum urinâ. Vero ista proclivitas ad putridam
goes out of the body with the urine. But that tendency to a putrid
 conditionem, si fuerit nimia, dabit quoque nimium hujus
condition, if it should be too great, will produce also too much of this
 salis, præsertim si multum salis fuerit assumptum cum cibo, et
salt, especially if much (of) salt should be taken with the food, and
 parum aquæ vel aliûs potûs fuerit in promptu, qui primo
little (of) water or other drink should be at hand, which at first
 dilueret, et tandem elueret salem e corpore. Quod genus
might dilute, and at last wash out the salt from the system. Which kind
 mali navales socii solent satis que super experiri
of disorder ships' crews are accustomed sufficiently and above to experience
 quum vivendum est (iis) plures menses nautico comæatu solo.
when they are obliged to live many months on ship provision; alone.

536. Autem Natura suggerit idoneum remedium huic corruptioni
But Nature suggests a suitable remedy for this corruption
 corporis, si revera qua sit, quæ supervenit sponte; nempe,
of the body, if indeed any there be, which comes on spontaneously; namely,
 recentem, acescentem cibum, et imprimis comparatum frugibus,
fresh, acescent food, and especially that prepared from vegetables,
 qui corrigit putridam corruptionem, et præbet salubre nutrimentum
which corrects the putrid corruption, and affords wholesome nutriment
 corpori.
to the body.

537. Vero si cibus hujusmodi deficit, corpus videtur citius corrumpi,
But if food of this kind fails, the body appears more quickly to be cor-
 que insignis acrimonia et tenuitas humorum dicuntur
rupted, and a remarkable acrimony and tenuity of the fluids are said
 gigni; præsertim si aqua deest simul, aut excre-
to be generated; especially if water is wanting at the same time, or the ex-
 tiones, quæ vehunt putrida et acria e corpore, languent,
cretions, which carry the putrid and acrid things out of the body, are languid,
 veluti a frigore, ignaviâ, torpore, deprimentibus affectibus animi,
as from cold, idleness, torpor, depressing affections of the mind,

etiam dum vivit putrescere usque; multumque salem (399) sui generis, qui non inepte animalis dici possit, gignere sive evolvere: scilicet in hunc salem magna pars omnium quos ingerimus vertitur, et cum urina e corpore exit. Ista vero ad putridam conditionem proclivitas, si nimia fuerit, nimium quoque hujus salis dabit, præsertim si multum salis cum cibo assumptum fuerit, et parum aquæ, vel alius potus, in promptu fuerit, qui salem dilueret primo, et tandem e corpore elueret. Quod mali genus socii navales satis superque experiri solent, quum plures menses solo comæatu nautico vivendum est.

536. Huic autem corruptioni corporis (535) si qua revera sit, quæ sponte supervenit, Natura idoneum remedium suggerit; cibum nempe recentem, et frugibus imprimis comparatum, acescentem, qui putridam corruptionem corrigit, et salubre nutrimentum corpori præbet.

537. Hujusmodi vero cibus si deficit, corpus citius corrumpi videtur, et insignis humorum acrimonia et tenuitas gigni dicuntur; præsertim si aqua simul deest, aut excretiones, quæ putrida et acria e corpore vehunt, languent, veluti a frigore, ignavia, torpore, deprimentibus animi affectibus, morbisque qui corpora

que morbis qui frangunt vires corporis; et demum si magnus calor adfuerit, qui semper favet tali corruptioni. *and diseases which break down the strength of the body; and finally if great heat should be present, which always favours such a corruption.*

538. Porro, medici crediderunt humores aliquando putrescere *Moreover, physicians have believed that the fluids sometimes putrefied* velocius, nimirum, putrido fermento recepto in corpus; *more speedily, that is, by a putrid ferment being received into the body;* veluti in quibusdam febribus ortis contagio, imprimis calore juvante, *as in certain fevers arising from contagion, especially heat assisting,* victu ex carnibus, quibusdam salibus, debilitate, immunditiâ. *a diet of meat, certain salts, debility, want of cleanliness.*

539. Denique, singularis pars corporis sæpe plane putrescit *Lastly, a particular part of the body often evidently putrefies* variis causis, veluti inflammatione, gangrænâ, algore; et nonnunquam *from various causes, as inflammation, gangrene, cold; and sometimes* inficit totum corpus: quamvis morbus hujusmodi plerumque evadat *infects the whole system: although a disease of this sort for the most part becomes* lethalis priusquam rapiat totum corpus in putredinem. *fatal before that it can hurry the whole body into putridity.*

540. Diu fuit sanctissimè persuasum, fere omnibus medicis, *It long has been most firmly persuaded, almost to all physicians,* massam sanguinis, quandocunque putresceret multum, non modo *that the mass of blood, whensoever it putrefied very much, not only* fieri acrem, sed quoque solvi, cogi ægre, et *became acrid, but also was dissolved, was congealed with difficulty, and* ostendere tenue et rarum crassamentum, et rubras particulas *shewed a thin and scanty crassamentum, and that the red particles* ipsas dilabi et frangi; vero sanguinem, sic solutum *themselves were decayed and broken down; but that the blood, so dissolved* et acrem, tum propter salem ipsius evolutum tum propter *and acrid, as well on account of the salt of itself being evolved as because of* suam fibrinam rancidam et putridam, stimulare et erodere omnia *its fibrine being rancid and putrid, stimulated and eroded all* vasa, et elabi ex his, et efficere maculas primo rubras, *the vessels, and escaped from them, and produced spots at first red,* postea livescentes vel nigrescentes, tumores, ulcera vix sanabilia, *afterward becoming livid or blackening, tumours, ulcers scarcely curable,* nisi tempestive occurreretur putredini, *except it be seasonably resisted to the putridity (the putridness be resisted),* profuvia sanguinis, ab omni parte corporis, vix compescenda, *profuvia of blood, from every part of the body, scarcely to be restrained,*

vires frangunt; et demum si magnus calor adfuerit, qui tali corruptioni semper favet.

538. Porro, medici crediderunt humores velocius aliquando putrescere, putrido nimirum fermento in corpus recepto; veluti in febribus quibusdam contagio ortis, juvante imprimis calore, victu ex carnibus, salibus quibusdam, debilitate, immunditiâ.

539. Denique, pars singularis corporis variis causis plane sæpe putrescit, veluti inflammatione gangrænâ, algore; et totum corpus nonnunquam inficit: quamvis plerumque lethalis evadat hujusmodi morbus, priusquam totum corpus in putredinem rapiat.

540. Medicis fere omnibus diu sanctissime persuasum fuit massam sanguinis, quandocunque multum putresceret, non modo acrem fieri, sed solvi quoque, ægre cogi, et tenue et rarum crassamentum ostendere, et ipsas particulas rubras dilabi et frangi; sanguinem vero sic solutum et acrem, tum propter salem ipsius evolutum, tum propter fibrinam suam rancidam et putridam, vasa omnia stimulare et erodere, et ex his elabi, et maculas primo rubras, postea livescentes, vel nigrescentes, tumores, ulcera vix sanabilia nisi tempestive putredini occurreretur, sanguinis profuvia ab omni corporis parte vix compescenda, et factorem

et insignem et intolerabilem fætorem halitûs, et omnium
and a remarkable and intolerable factor of the breath, and of all
 excretionum, qualla sæpe observantur in scorbuto, vel in quibusdam
the excretions, such as often are observed in the scurvy, or in some (of)
 pessimis febribus; et inducere laxitatem solidarum partium, que
the worst fevers; and brought on laxity of the solid parts, and
 summam debilitatem, (scilicet, nervosâ vi ipsâ læsâ tali
the greatest debility, (that is, the nervous power itself being injured by such
 putredine, tanquam veneno,) et tandem mortem.
putridness, as if by poison,) and at length death.

541. Acida acrimonia vix unquam videtur contingere humano
An acidulous acrimony scarcely ever seems to belong to human
 sanguini, neque ulli humorum quum primum secernitur ex
blood, nor to any one of the humours when first it is secreted from
 eo, quamvis profecto unus ex iis jam secretus, scilicet lac, sponte
it, although indeed one of them when secreted, namely milk, spontaneously
 et brevi acescat.
and quickly becomes acid.

542. Neque sanguis videtur infici magis alcalinâ acrimoniâ.
Nor does the blood seem to be infected more with an alkaline acrimony.
 Revera putredo vergit ad hanc, et tandem desinit in hanc, autem
Truly putridness tends to this, and at length ends in it, but
 vix vitâ durante; autem quidam humor secretus a
scarcely (while) life remaining; but a certain fluid secreted from
 sanguine, scilicet urina, etiam recens, sæpe distat parum ab
the blood, namely the urine, even recent, often differs little from
 alcalinâ naturâ; et aliquando, ut fertur, est reddita plane
an alkaline nature: and sometimes, as it is said, has been voided quite
 alcalina.
alkaline.

543. Variæ acrimoniæ possunt fortasse inesse sanguini, veluti
Various (kinds of) acrimonies may perhaps exist in the blood, as
 a nimio usu multorum acrium, puta, aromatum, meracioris
from the excessive use of many acrid things, for instance, of spices, of strong
 potûs: sed nihil certi est notum de his.
drink: but nothing certain is known of these.

544. Tamen, variæ morbosæ acrimoniæ plane existunt, quæ sæpe
However, various morbid acrimonies without doubt exist, which often
 videntur quodammodo inficere corpus et corrumpere quibusdam gravibus
seem in some degree to infect the body and corrupt it with some severe
 morbis: cujûsmodi sunt acrimoniæ variolæ, morbillorum, carcinomatis,
diseases: of which sort are the acrimonies of small-pox, of measles, cancer,

insignem et intolerabilem halitus, et omnium
 excretionum, qualia in scorbuto, vel in pessimis
 quibusdam febribus sæpe observantur, efficere;
 et laxitatem solidarum partium, summamque
 debilitatem (læsa scilicet ipsa vi nervosa tali
 putredine tanquam veneno) et mortem tandem,
 inducere.

541. Acrimonia acida vix unquam sanguini
 humano contingere videtur, neque humorum
 ulli quum primum ex eo secernitur, quamvis
 profecto unus ex iis jam secretus, lac scilicet,
 sponte et brevi acescat.

542. Neque magis videtur sanguis alcalina
 acrimonia infici. Putredo revera ad hanc

vergit, et in hanc tandem desinit, vix autem
 durante vita: humor autem quidam a sanguine
 secretus, urina scilicet, sæpe parum distat,
 etiam recens, ab alcalina natura; et nonnun-
 quam, ut fertur, plane alcalina reddita est.

543. Variæ fortasse acrimoniæ sanguini in-
 esse possunt, veluti a nimio usu multorum
 acrium, puta aromatum, aut potus meracioris;
 sed de his nihil certi notum est.

544. Variæ tamen plane existunt acrimoniæ
 morbosæ; quæ corpus sæpe quodammodo in-
 ficere videntur, et gravibus quibusdam morbis
 corrumpere: cujûsmodi sunt acrimoniæ variolæ,
 morbillorum, carcinomatis, luis venereæ, quarum

*luis venereæ, natura et origo quarum, et modus quo
of lues venerea, the nature and origin of which, and the manner in which
adeo nocent, sunt parum intellecta, vero effects satis que
they so hurt, are little understood, but the effects (are) sufficiently and
super noti.
more (too well) known.*

545. Vero Natura præcavit a plerisque acrimoniis haud minore
*But Nature has guarded against many (of the) acrimonies with no less
curâ quam a nimîâ spissitate sanguinis; antidoto dato
care than against too great spissitude of the blood; an antidote being given
nonnullis, vel siti excitatâ, ut diluantur probe
for some, either by thirst being excited, that they may be washed out thoroughly
bibendo; vel, idoneis excretionibus auctis, ut ejiciantur;
by drinking; or, the proper excretions being increased, that they may be
ejected; or, lastly, various motibus et actionibus excitatis,
by which they become subdued, and changed, or harmless, or
quibus fiant domitæ, et permutatæ, vel innocuæ, vel
are expelled from the body, by new and unusual channels and excretions.*

CAP. XVII.

CHAP. XVII.

*De respiratione, que usibus et varietatibus, et vitiis ejûs; voce,
Of respiration, and the uses and varieties, and disorders of it; (of) the
loquelâ, nixu, suspirio, oscitatione, risu, fletu, singultu,
voice, speech, straining, sighing, yawning, laughter, weeping, hiccup,
dyspnœâ, tussi, sternutatione.
dyspnœa, cough, sneezing.*

546. Superest adhuc et alia functio consideranda, nempe,
*There remains yet also another function to be considered, namely,
respiratio, quæ jure habetur vitalis; quoniam in homine et
respiration, which rightly is considered vital; since in man and
animalibus, quæ habent similem structuram corporis, est adeo necessaria
animals, which have a similar structure of body, it is so necessary*

natura, et origo, et modus quo adeo nocent parum intellecta, effectus vero satis superque noti sunt.

545. A plerisque vero acrimoniis Natura præcavit haud minore cura quam a nimia spissitate sanguinis; nonnullis antidoto dato, vel excitata siti, ut probe diluantur bibendo; vel auctis idoneis excretionibus, ut ejiciantur; vel denique variis excitatis motibus et actionibus, quibus domitæ et permutatæ, vel innocuæ

fiant, vel novis et insolitis viis et excretionibus e corpore expellantur.

CAP. XVII.—*De respiratione, ejusque usibus, et varietatibus, et vitiis; voce, loquela, nixu, suspirio, oscitatione, risu, fletu, singultu, dyspnœa, tussi, sternutatione.*

546. SUPEREST et alia functio adhuc consideranda, respiratio nempe, quæ jure vitalis habetur; quoniam in homine, et animalibus quæ

ad vitam, ut possit ne suspendi, quidem per brevissimum spatium
to life, that it cannot be suspended, even for a very short space
 temporis, sine maximo incommodo aut instante periculo.
of time, without the greatest inconvenience or instant danger.

547. Est nulla in fœtu; incipit statim a partu;
There is none in the fœtus; it begins immediately after birth;
 perficitur duplici motu, nimirum, inspiratione et expiratione,
it is performed by a twofold motion, namely, inspiration and expiration,
 alterâ quarum aër recipitur in pulmonem, alterâ vicissim
by the one of which the air is admitted into the lung, by the other in turn,
 expellitur ex eo.
it is expelled from it.

548. Jam satis constat ex observationibus medicorum pulmo-
It is now sufficiently established by the observations of physicians, that the
 nem jacere proxime sub pleurâ costarum; scilicet, nullo aëre
lungs lie close under the pleura of the ribs; that is, no air
 interposito, ut olim fuit opinio: igitur, thorace ampliato,
being interposed, as formerly was the opinion: therefore, the thorax being enlarged,
 oportet vel vacuum fiat inter pleuram et pulmonem, vel
it behoves either that a vacuum be made between the pleura and lung, or
 hic quoque sic distendatur, ut iterum accurate impleat
that the latter also be so distended, that again it accurately fills up
 cavum thoracis.
the cavity of the thorax.

549. Vis resiliendi, et igitur aucta moles aëris qui inest
The elasticity, and therefore the increased volume of the air which is in
 pulmoni, vetat ne vacuum fiat, et pondus
the lung, prevents that a vacuum take place, also the weight (pressure)
 externi aëris intrantis per asperam arteriam, que habentis liberum
of the external air entering by the aspera arteria, and having a free
 commeatum cum aëre qui est in pulmone; et igitur prementis
communication with the air which is in the lungs; and therefore pressing
 hunc aëra, jam nonnihil expansum sub inspirationem, et ideo
this air, now somewhat expanded during inspiration, and consequently
 renitentem minus, quoquoversum per pulmonem.
resisting less, in every direction through the lung.

550. Vero machinatio, quâ solemus ampliari cavum
But the mechanism, by which we are accustomed to enlarge the cavity
 thoracis, est duplex; aut transverso septo contrahente se,
of the thorax, is twofold; either the transverse septum contracting itself,
 descendente, trahente suum centrum deorsum, et, a concavo
descending, drawing its centre downwards, and, from being concave

similem corporis structuram habent, ad vitam adeo necessaria est, ut ne quidem per brevissimum temporis spatium sine maximo incommodo aut instante periculo suspendi possit (5).

547. In fœtu nulla est; statim a partu incipit: duplici motu perficitur, inspiratione nimirum et expiratione, quarum altera aër in pulmonem recipitur, altera ex eo vicissim expellitur.

548. Medicorum observationibus jam satis constat, pulmonem proxime sub pleura costarum jacere, nullo scilicet interposito aëre, sicut olim opinio fuit: ampliatio igitur thorace oportet, vel vacuum, inter pleuram, pulmonemque

fiat, vel hic quoque sic distendatur, ut cavum thoracis iterum accurate impleat.

549. Ne vacuum fiat, vetat resiliendi vis et aucta igitur moles aëris qui pulmoni inest, et pondus aëris externi per asperam arteriam intrantis, liberumque cum aëre qui in pulmone est commeatum habentis; et hunc igitur aëra jam sub inspirationem nonnihil expansum, et ideo minus renitentem, quoquoversum per pulmonem prementis.

550. Duplex vero machinatio est, qua cavum thoracis ampliari solemus: aut septo transverso se contrahente, descendente, centrum suum deorsum trahente, et a concavo abdomen

versus abdomen, verso fere in planum; aut musculis qui
towards the abdomen, changed almost into a flat; or the muscles which
 jacent inter costas contrahentibus se, que elevantibus costas:
lie between the ribs contracting themselves, and elevating the ribs:
 autem hæ, propter obliquum situm et nexum quem
but these, on account of the oblique position and joining (articulation) which
 habent cum spinâ dorsî, nequeunt elevari, quin ipsæ
they have with the spine of the back, cannot be elevated, but that themselves
 simul protrudantur, et quoque protrudent sternum, et
are at the same time protruded, and also protrude the sternum, and
 dimoveant aliquantum opposita latera pectoris invicem a
move apart to some extent the opposite sides of the chest mutually from
 se.
each other.

551. Igitur thorax ampliatur quoquoersum his viribus,
Wherefore the thorax is enlarged in every direction by these powers,
 quibus solemus uti vel singulis aut omnibus junctis simul
which we are accustomed to use either single (y) or all joined together
 prout res postulaverit; nimirum, fit
(conjointly) according as the occasion shall require; that is, it becomes
 longior, et latior, et profundior.
longer, and broader, and deeper.

552. Vero alii musculi quoque conspirant in validissimâ aut difficili
But other muscles also co-operate in a very strong or difficult
 inspiratione, scilicet, quotquot possint vel elevare vel firmare supe-
inspiration, namely, as many as are able either to elevate or fix the
 riores costas, ut inferiores trahantur validius et certius
superior ribs, that the inferior ones may be drawn more powerfully and certainly
 ad eas.
to them.

553. Thorax sic dilatatus brevi reducit ad pristinam amplitudi-
The thorax thus dilated is quickly reduced to its former capacity;
 nem; imprimis omnibus musculis inspirationis relaxatis, ita ut
first by all the muscles of inspiration being relaxed, so that
 propria vis resiliendi dimotarum partium conducat haud parum
the proper elasticity of the separated parts may contribute not a little
 ad hunc effectum. Enim costæ junctæ, ope cartilaginum et fortium
to this effect. Moreover the ribs joined, by means of cartilages and of strong
 ligamentorum, cum sterno et dorso, fere statim redeunt
ligaments, with the sternum and back, almost immediately return
 hoc modo ad pristinum situm; et quidem sponte et facillime,
by this means to their former position; and even spontaneously and very easily,

versus in planum fere verso; aut musculis qui
 inter costas jacent se contrahentibus costasque
 elevantibus: hæ autem, propter obliquum quem
 cum spina dorsî habent situm et nexum, elevari
 nequeunt, quia simul protrudantur ipsæ et
 sternum quoque protrudent, et latera pectoris
 opposita a se invicem aliquantum dimoveant.

551. His itaque viribus, quibus vel singulis,
 vel omnibus simul junctis, uti solemus, prout
 res postulaverit, thorax quoquoersum ampliatur;
 nimirum longior et latior, et profundior fit.

552. In validissima vero aut difficili inspira-

tionem, alii quoque musculi conspirant, quotquot
 scilicet costas superiores vel elevare possint,
 vel firmare, ut inferiores validius et certius ad
 eas trahantur.

553. Thorax sic dilatatus ad pristinam ampli-
 tudinem brevi reducit; relaxatis imprimis
 omnibus musculis inspirationis, ita ut propria
 partium dimotarum vis resiliendi haud parum
 ad hunc effectum conducat. Costæ enim, ope
 cartilaginum, et fortium ligamentorum, cum
 sterno et dorso junctæ, statim fere ad primum
 situm hoc modo redeunt; et quidem sponte et
 facillime, scilicet sine ullo hominis ipsius

sine ullo voluntario conatu, hominis ipsiùs, aut ullâ invitâ
without any voluntary effort, the man himself, or any unwilling (forced)
 contractione cujùsvis musculi. Mediastinum quoque dicitur trahere
contraction of any muscle. The mediastinum also is said to draw
 centrum transversi septi sursum; vero musculi abdominis
the centre of the transverse septum upwards; but the muscles of the abdomen
 distenti per inspirationem, non modo resilièntes, sed contracti quoque
distended by inspiration, not only rebounding, but contracted also
 vitali vi, premunt transversum septum sursum, et trahunt
by a vital power, press the transverse septum upwards, and draw
 costas deorsum: àër iterum expellitur hoc modo e pulmone,
the ribs downwards: the air is again expelled in this manner from the lung,
 contractione musculosarum fibrarum, quibus bronchia instruuntur,
the contraction of the muscular fibres, with which the bronchia are furnished,
 simul juvante.
at the same time assisting.

554. Autem alii musculi quoque adjuvant in valida expiratione:
But other muscles also assist in a strong expiration:
 nimirum, qui queant deprimerè costas; aut, demum, musculi
namely, those which can depress the ribs; or, lastly, the muscles
 ipsi abdominis, qui, parentes voluntati, possunt contrahi
themselves of the abdomen, which, obeying the will, can be contracted
 insigni vi.
with great force.

555. Igitur respiratio absolvitur his alternis viribus. Fuit
Therefore respiration is performed by these alternate powers. It has been
 diu et multum disputatum inter medicos quantum thorax
long and much disputed amongst physicians how much the thorax
 ampliaretur sub inspirationem, vel quanta mensura externi
was enlarged during inspiration, or how great a quantity of the external
 àëris descenderet in pulmonem singulis inspirationibus; neque est
air descended into the lungs at single (each) inspiration(s); nor has
 lis hactenus prorsus composita. Autem non desunt
the dispute hitherto been completely settled. But there are not wanting
 multæ observationes et experimenta instituta variis auctoribus, quæ
numerous observations and experiments instituted by various authors, which
 faciunt verisimile adultum hominem solitæ magnitudinis, (nam
render it probable that an adult person of the usual size, (for
 amplitudo thoracis ipsiùs valet multum hic,) accipere circiter
the capacity of the thorax itself avails much here,) takes in about
 quadraginta cubicos pollices (metaph. ponitur) àëris in communi inspiratione;
forty cubic thumbs (met. for inches) of air in a common inspiration;

conatu voluntario, aut ulla musculi cujusvis contractione invita. Mediastinum quoque dicitur centrum septi transversi sursum trahere; musculi vero abdominis, per inspirationem distenti, non modo resilièntes, sed vi quoque vitali contracti (306, 321) septum transversum sursum premunt, et costas deorsum trahunt: hoc modo àër iterum e pulmone expellitur, juvante simul contractione fibrarum musculosarum quibus bronchia instruuntur.

554. In valida autem expiratione alii quoque musculi adjuvant; nimirum qui costas deprimerè queant; aut demum ipsi musculi abdominis, qui voluntati parentes, insigni vi contrahi possunt.

555. His igitur alternis viribus respiratio absolvitur. Diu multumque inter medicos disputatum fuit quantum sub inspirationem ampliaretur thorax, vel quanta mensura externi àëris in pulmonem singulis inspirationibus descenderet; neque hactenus de his rebus prorsus composita lis est. Non desunt autem multæ observationes et experimenta, a variis auctoribus instituta, quæ verisimile faciunt hominem adultum, solitæ magnitudinis (nam multum hic valet ipsius thoracis amplitudo) in communi inspiratione, quadraginta circiter pollices cubicos àëris in pulmones accipere; post naturalem expirationem, centum et amplius pollices cubicos àëris in iis superesse;

centum cubicos pollices et amplius aëris superesse in iis post
that a hundred cubic inches and more of air remain in them after
 naturalem expirationem; post validissimam expirationem vix
a natural expiration; after a very strong expiration that scarcely
 quinquaginta cubicos pollices aëris fortasse includi in iis. et
fifty cubic inches of air are perhaps inclosed in them: and
 demum per fortissimam expirationem, post talem inspirationem fere
lastly by the strongest expiration, after such an inspiration that nearly
 ducentos cubicos pollices aëris expelli e pulmonibus.
two hundred cubic inches of air are expelled from the lungs.

556. Respiratio tenet fere medium locum inter actiones
Respiration holds nearly an intermediate place between the actions
 quæ pendent a voluntate, et eas quæ perficiuntur homine
which depend upon the will, and those which are performed by the person
 inscio aut invito. Quatenus sit necessaria ad vitam, Natura
while unconscious or involuntary. As far as it is necessary to life, Nature
 probe curavit ut semper exerceatur; vero quatenus inserviat
has specially provided that it always should be exercised; but so far as it is subservient
 plurimis, et admodum diversis, neque perpetuis muneribus vivi
to the many, and very different, nor constant functions of the living
 corporis, permisit eandem (sc. respirationem) quodammodo nostro
body, she has left the same in some measure to our own
 voluntati et arbitrio. Omnes musculi respirationis, ut videtur,
will and pleasure. All the muscles of respiration, as it appears,
 subjiciuntur imperio voluntatis; autem Natura suggerit idoneum
are subjected to the control of the will; but Nature supplies a suitable
 perpetuum stimulum, qui cieat eos ad idoneam actionem, homine
incessant stimulus, which excites them to a proper action, the person
 etiam inscio vel interdum invito aut nitente contra.
being even unconscious or sometimes unwilling or endeavouring against it.

557. Quis iste stimulum fuerit medici quæsiverunt multum
What that stimulus may (have) be(en) physicians have enquired very much,
 et cur infans, qui, donec lateret in utero, nunquam
and why the infant, who, while it was lying hid in the uterus, had never
 spiraverat, statim inciperet spirare, quamprimum objiceretur
breathed, immediately began to breathe, as soon as it was exposed
 aëri.
to the air.

558. Alii tribuunt respirationem incipientem statim a partu
Some attribute respiration beginning immediately after birth
 singulari naturali instinctui; alii generali nixui quem novum
to a particular natural instinct; others to a general struggle which the new

post validissimam expirationem, vix quinquaginta pollices cubicos aëris in pulmonibus manere; per fortissimam inspirationem, ducentos et quinquaginta fortasse pollices cubicos aëris in iis includi: et demum, per fortissimam expirationem, post talem inspirationem, ducentos fere pollices cubicos aëris e pulmonibus expelli.

556. Medium fere locum tenet respiratio inter actiones quæ a voluntate pendent, et eas quæ inscio aut invito homine perficiuntur. Quatenus ad vitam necessaria sit, probe curavit Natura ut semper exerceatur; quatenus vero plurimis, et admodum diversis, neque perpe-

tuis, vivi corporis muneribus inserviat, eandem voluntati atque arbitrio nostro quodammodo permisit. Musculi omnes, ut videtur, respirationis, voluntatis imperio subjiciuntur; suggerit autem Natura idoneum atque perpetuum stimulum, qui eos, etiam inscio vel interdum invito aut contra nitente homine, ad idoneam actionem cient

557. Quis fuerit iste stimulum, medici multum quæsiverunt, et cur infans, qui donec in utero lateret, nunquam spiraverat, quamprimum aëri objiceretur, statim spirare inciperet.

558. Respirationem statim a partu incipientem alii singulari instinctui naturali tribuunt; alii

animal edit, (et profecto est opus inspiratione ad omnem
animal makes, (and indeed there is need of inspiration for every
 validiorem nixum, ut partes quibus magni musculi corporis
more powerful effort, that the parts to which the large muscles of the body
 annectuntur rite firmentur:) demum, alii tribuunt primum
are attached may be properly fixed;) lastly, others attribute the first
 spiritum contractioni transversi septi ipsiûs, quod, quamvis
breathing to the contraction of the transverse septum itself, which, although
 maxime distentum, et daturum (sit) validissimam contractionem primâ
very much distended, and would produce a very powerful contraction on the first
 occasione, potuit efficere nihil omnino, dum infans latebat in
opportunity, could effect nothing at all, while the infant was lying hid in
 utero; quia non aër, sed aquosus latex circumdabat eum, et hic
the uterus; because not air, but a watery liquor surrounded it, and this
 nequit transire glottidem, sed contra, arctissime claudit
cannot pass through the glottis, but on the contrary, it very closely shuts up
 ejûs rimam, forti contractione excitatâ ibi.
its aperture, by the powerful contraction excited there.

559. Expiratio, facta viribus jam recensitis, succedit
An expiration, made by the powers already enumerated, succeeds
 primæ inspirationi; et huic iterum inspiratio, cum forsitan
the first inspiration; and to this again an inspiration, as well perhaps
 simplice contractione transversi septi pressi sursum, nec
by the simple contraction of the transverse septum pressed upwards, nor
 parum distenti actione musculorum abdominis; tum
a little distended (and greatly) by the action of the muscles of the abdomen; as
 quoque fortasse stimulo quem sanguis collectus in arteriis et
also perhaps by the stimulus which the blood collected in the arteries and
 venis dat; vero maxime illo peculiari stimulo, quem aër
veins produces; but most of all by that peculiar stimulus, which the air
 retentus in pulmone ipso, que inquinatus variis materiis per
retained in the lung itself, and adulterated with different matters through
 spiritum, et forsân quoque aliter vitiatus, impertit, per
the breathing, and perhaps also otherwise vitiated, imparts, by
 aliquem consensum, ut videtur, omnibus musculis inspirationis:
some (kind of) consent, as it appears, to all the muscles of inspiration:
 vix percipimus hunc stimulum in communi respiratione, quippe
we scarcely perceive this stimulus in ordinary respiration, as being
 qui sit familiaris nobis; verum, si cohibemus spiritum
that which is familiar to us; but, if we restrain the breathing

nixi generali quem novum animal edit, (et profecto ad omnem nixum validiorem inspiratione opus est, ut partes quibus magni musculi corporis annectuntur rite firmentur); alii demum ipsius septi transversi contractioni primum spiritum tribuunt, quod, quamvis maxime distentum, et prima occasione validissimam daturum contractionem, dum in utero latebat infans, nihil omnino efficere potuit; quia non aër, sed aquosus latex, eum circumdabat, et hic glottidem transire nequit, sed contra rimam ejus arctissime claudit, forti contractione ibi excitata.

559. Primæ inspirationi expiratio succedit,

viribus jam (553) recensitis facta; et huic iterum inspiratio, cum forsitan simplice contractione septi transversi sursum pressi, nec parum distenti, actione musculorum abdominis; tum quoque fortasse stimulo quem sanguis in arteriis et venis pulmonis collectus dat; maxime vero stimulo illo peculiari, quem aër in ipso pulmone retentus, variisque materiis per spiritum inquinatus (559, 564), forsân et aliter quoque vitiatus (565), per consensum (358) aliquem, ut videtur, omnibus inspirationis musculis impertit: hunc stimulum, quippe qui nobis familiaris sit, in communi respiratione vix percipimus; verum, si diutius spiritum

diutius, sentimus eundem esse molestum et quidem validissimum, a long time, we feel the same to be troublesome and even very powerful, et quali possumus non resistere. and such as we can not resist.

560. Porro aliquid conatûs cuius simus consciî requiritur ad inspirationem: expiratio perficitur sponte et sine conatu. *Moreover something of an effort of which we are conscious is required for inspiration: expiration is performed spontaneously and without effort.* Hinc inspiratio est ultimus nisus in moribundo; efflat *Hence inspiration is the last struggle in the dying person; he breathes out animam sine conatu; nam omnes moriuntur in expiratione. his soul without an effort; for all die in an expiration.*

561. Respiratio inservit variis usibus. Plerique medici existimarunt *Respiration serves for various uses. Most physicians have imagined hanc esse non modo utilem, sed prorsus necessariam, scilicet quia that it was not only useful, but absolutely necessary, that is, because esset opus eâ, ut crederent, ad promovendum circuitum there was need of it, as they believed, to promote the circulation sanguinis per pulmonem. Enim pulmo, donec est collapsus of the blood through the lung. For the lung, whilst it is collapsed et compressus, veluti in fœtu, vel etiam in adulto homine, (ut and compressed, as in the fœtus, or even in the adult person, (as quidam putarunt,) sub expirationem, nequit recipere tantum sanguinis some supposed,) during expiration, cannot admit so much of blood quantum dextrum cor tradat ipsi. Igitur alia via as the right (ventricle of the) heart delivers to it. Therefore another course patet huic sanguini in fœtu: vero in adulto homine, ubi lies open to this blood in the fœtus: but in the adult person, where est nulla alla, medici putarunt sanguinem accumulari there is none other, physicians supposed that the blood was accumulated quodammodo in pulmone, (quod) primo (sit) daturum in- in some degree in the lung, (which) at first (would) (to) produce an gratum, quamvis levem, sensum molestiæ cum cupiditate inspirandi; unpleasant, although slight, sense of uneasiness with a desire inspiring; vero postea, nisi homo prius traxerit spiritum, horrendum sensum but afterwards, unless the person first drew breath, a horrible feeling suffocationis. Quoque persuaserunt sibi sanguinem transire vix of suffocation. Also they persuaded themselves that the blood passed scarcely melius per pulmonem etiam sub inspirationem: enim quamvis better through the lung even during inspiration: for although aliquanto major copia sanguinis posset recipi in pulmonem a somewhat greater quantity of blood might be admitted into the lung*

cohibemus, eundem molcstum et quidem validissimum esse sentimus, et quali non possumus resistere.

560. Ad inspirationem porro conatus aliquid cuius consciî simus requiritur: expiratio sponte et sine conatu (553) perficitur. Hinc ultimus in moribundo nisus inspiratio est; animam sine conatu efflat; nam omnes in expiratione moriuntur.

561. Respiratio variis usibus inservit. Plerique medici existimarunt hanc non utilem modo esse, sed prorsus necessariam, scilicet quia ea opus esset, ut crederent, ad sanguinis circuitum per pulmonem promovendum. Pulmo enim, donec

collapsus et compressus est, veluti in fœtu, vel etiam in adulto homine (ut quidam putarunt) sub expirationem, tantum sanguinis recipere nequit, quantum cor dextrum ipsi tradat. In fœtu igitur alia huic sanguini patet via: in adulto vero homine, ubi nulla alia est, medici putarunt sanguinem in pulmone quodammodo accumulari, primo ingratum quamvis levem molestiæ sensum, cum inspirandi cupiditate; postea vero, nisi prius homo spiritum traxerit, horrendum suffocationis sensum daturum. Sibi quoque persuaserunt sanguinem etiam sub inspirationem vix melius per pulmonem transire: quamvis enim aliquanto major san-

in hoc statu, putarunt hanc (copiam) transmitti ægre
in this state, they thought that it was transmitted with difficulty
 per eum (pulmonem) propter minutissimos ramulos pulmonalis
through it because of the very minute ramifications of the pulmonary
 arteriæ nimis compressos distentis cellulis pulmonis. Sed
artery being too much compressed by the distended cells of the lung. But
 omnia hæc, quamvis non prorsus falsa, sunt saltem minus
all these things, although not utterly false, are at least not
 firma, et minoris momenti, quam multi et graves auctores
established, and of less moment, than many and grave authors
 existimarunt.
have imagined.

562. Quod si res habet se ita ut hi auctores
But if the matter has itself so as (like as) these authors
 docuerunt, potest non fieri, quin quidam status pulmonis,
have taught, it cannot happen but that a certain state of the lung,
 medius quasi inter compressionem et maximam amplificationem,
intermediate as it were between compression and the greatest enlargement,
 et libere accipiat et transmittat sanguinem: nempe, qui reddet
both freely should receive and transmit the blood: that is, which will render
 vasa vehentia sanguinem maxime capacia quam. Et profecto,
the vessels carrying the blood the most capacious possible. And, indeed,
 jam constat per idonea experimenta, scilicet, aquâ infusâ in
it is now established by suitable experiments, namely, water poured into
 thoracem vivi animalis, compressionem pulmonis multo majorem
the thorax of a living animal, that a compression of the lung much greater
 quam quæ fit in communi expiratione, parum impedire motum
than what takes place in common expiration, little hinders the motion
 sanguinis per eum, neque lædere spiritum adeo ut fuit
of the blood through it, nor hurts the breathing so much as was
 olim opinio.
formerly the opinion.

563. Vero Natura potuit evitare istam necessitatem, si revera qua
But Nature could have avoided that necessity, if indeed any
 sit vel nullo pulmone dato homini, vel homine
be (any such there be) either by no lung being given to man, or by man
 instructo simplice corde et pulmone fere arbitrario,
being furnished with a simple (single) heart and a lung almost arbitrary,
 qui accepisset totum suum sanguinem a ramo aortiæ,
which might have received the whole of its blood from a branch of the aorta,
 qualem fabricam spectamus in amphibis, et (in) plerisque animalibus
such a mechanism as we observe in amphibia, and in most animals

guinis copia in hoc statu in pulmonem recipi
 posset, hæc putarunt ægre per eum transmitti,
 propter ramulos minutissimos arteriæ pulmona-
 lis, distentis cellulis pulmonis, nimis compres-
 sos. Sed hæc omnia, quamvis non prorsus
 falsa, saltem minus firma sunt, et minoris mo-
 menti, quam multi et graves auctores existi-
 marunt.

562. Quod si ita res se habet ut hi auctores
 docuerunt, fieri non potest, quin status quidam
 pulmonis, medius quasi inter compressionem
 et amplificationem maximam, sanguinem et
 accipiat et transmittat libere: nempe, qui vasa

sanguinem vehentia quam maxime capacia
 reddet. Et profecto constat jam per idonea ex-
 perimenta, aqua scilicet in thoracem vivi ani-
 malis infusa, multo majorem pulmonis compres-
 sionem, quam quæ in communi expiratione
 fit, motum sanguinis per eum parum impedire,
 neque spiritum adeo lædere, ut olim opinio fuit.

563. Istam vero necessitatem (561), si qua
 revera sit, Natura evitare potuit, vel nullo
 homini dato pulmone, vel homine corde sim-
 plice instructo, et pulmone fere arbitrario, qui
 totum suum sanguinem a ramo aortiæ accepisset,
 qualem in amphibis, et plerisque frigidis san-

frigidi sanguinis. Præterea, leges philosophandi vetant (nos) fingere
of cold blood. Besides, the laws of philosophising forbid us to devise
vel querere plures causas quam quæ sufficient ad explicandam
or seek more causes than what are sufficient to explain
rem: et sunt aliæ (causæ) neque dubiæ cur spiritus
the subject: and there are others nor doubtful why the breath
interclusus, vel sub inspirationem, vel expirationem, vel demum
stified, either during inspiration, or expiration, or lastly
sub medium statum, quo vasa debent esse capacissima
during the intermediate state, in which the vessels ought to be most capacious
et liberrima, brevi extingueret hominem.
and free, would quickly destroy a person.

564. Scilicet docemur alios usus respirationis ex effectibus ejus.
Indeed we are taught other uses of respiration from the effects of it.
Omne spirans, præter aquosum halitum, usque exhalat
Every breathing animal, besides a watery vapour, continually exhales
plurimum carbonicum acidum e pulmone, quod foret lethali
a great deal of carbonic acid from the lungs, which would be a deadly
veneno vel ipsi vel aliis (animalibus) si esset retentum in
poison either to itself or to others if it were retained in
pulmone vel iterum receptum in eum. Excernere hoc noxium
the lung or again received into it. To void this noxious principle
certe, est non minimus usus respirationis.
indeed, is not the least (important) use of respiration.

565. Constat quoque per innumera experimenta, insignem
It is established also by innumerable experiments, that a remarkable
mutationem sanguinis ipsius, et summi momenti, fieri per
change of the blood itself, and of the greatest moment, is caused by
spiritum in pulmone. Enim ille redux per venas cavas ab
the air in the lung. For it returning by the venæ cavæ from
omni parte corporis, impellitur, nigricans colore, per dextrum
every part of the body, is driven, blackish in colour, by the right
cor in pulmones, et dum animal spirat rubens
heart (ventricle) into the lungs, and whilst the animal breathes reddening
lætius (quod notum est diu) et aliter mutatus
more brightly, (which has been known a long time) and otherwise changed
reddit ex his ad sinistrum cor, et probe excitat hoc
returns from these to the left (side of the) heart, and powerfully excites this
ad suum munus. Vero spiritu intercluso, sanguis transmissus
to its proper duty. But the breathing being stopped, the blood transmitted
per pulmones neque rubet solito more, neque satis
through the lungs neither reddens in the usual manner, nor sufficiently

gulis animalibus, fabricam spectamus. Præterea, leges philosophandi vetant plures causas fingere vel querere, quam quæ ad rem explicandam sufficient: et aliæ sunt neque dubiæ, cur spiritus interclusus, vel sub inspirationem, vel expirationem, vel demum sub medium statum, quo vasa capacissima et liberrima esse debent, hominem brevi extingueret.

564. Alios scilicet respirationis usus ex effectibus ejus docemur. Omne spirans, præter halitum aquosum, plurimum acidum carbonicum e pulmone usque exhalat, quod vel ipsi, vel aliis, lethali veneno foret, si in pulmone reten-

tum, vel iterum in eum receptum esset. Non minimus certe respirationis usus est, hoc noxium excernere.

565. Constat quoque per innumera experimenta, insignem, et summi momenti sanguinis ipsius, mutationem (per spiritum in pulmone fieri. Ille enim per venas cavas ab omni parte corporis redux, colore nigricans, per cor dextrum in pulmones impellitur, et, dum spirat animal, ex his lætius rubens (quod diu notum est) et aliter mutatus ad cor sinistrum redit, et hoc ad suum munus probe excitat. Intercluso vero spiritu, sanguis per pulmones

irritat sinistrum cor, motus cujus statim fatiscit, (et) irritates the left heart, the motion of which immediately fails, and periturus (est) brevi. Animale iterum spirante, sanguis advectus will be destroyed quickly. The animal again breathing, the blood brought a pulmone ad cor denuo rubescit, et hoc simul from the lung to the heart again becomes red, and this at the same time integrat suum motum et vitam moribundo. Hæ chemicæ restores its own motion and life to the dying (animal.) These chemical mutationes sanguinis in pulmone videntur pendere maxime ab changes of the blood in the lung seem to depend principally upon oxygenio (quod est tantum exigua pars communis aëris oxygen (which is (forms) only a small portion of the common air quem solemus spirare) accepto quodammodo in sanguinem et which we are accustomed to breathe) received in some way into the blood, and probe permisto cum eo. thoroughly mixed with it.

566. Porro exhalatio, carbonici acidi istiusmodi qualis fit Moreover an exhalation of carbonic acid of that sort such as takes place e pulmonibus, habetur apud chemicos certum signum cuiusdam from the lungs, is considered by chemists a certain sign of some mutationis compositionis in corpore unde ipsa oritur. Et est change of composition in the body whence it arises. And it is satis verisimile, sanguinem subire quandam aliam chemicam very probable, that the blood undergoes some other chemical mutationem ibi loci, cuius exhalatio istius acidi est signum change in that place, of which the exhalation of that acid is a sign et effectus; præsertim si attendamus animum ad hoc and effect; especially if we apply the mind to this (when we reflect) nimirum, omne nutrimentum transire per pulmonem, prius quam namely, that all the nourishment passes through the lung, before that intret majorem circuitum, nec crudum unquam conspici, saltem it enters the greater circulation, nor is any crude thing ever seen, at least in sano homine, in eo sanguine quem sinistrum cor miserit in a healthy person, in that blood which the left heart has sent ad reliquum corpus. Fortasse cruda materies, qualis defertur to the rest (of the) body. Perhaps the crude matter, such as it is conveyed ex intestinis, oleosa, subdulcis, acescens, mediæ naturæ from the intestines, oily, sweetish, acescent, of an intermediate nature quasi, inter fruges et carnes, subigitur in pulmone, vertitur as it were, between vegetables and flesh, is reduced in the lung, is changed in verum sanguinem, penitus concoquitur, demum induit animale in into true blood, is completely concocted, at length it puts on the animal

transmissus neque more solito rubet, neque cor sinistrum satis irritat, cujus motus statim fatiscit, brevi periturus. Spirante iterum animale, sanguis a pulmone ad cor advectus denuo rubescit, et hoc simul motum suum, et vitam moribundo, integrat. Hæ mutationes chemicæ sanguinis in pulmone maxime pendere videntur ab oxygenio (quod exigua tantum pars est communis aëris quem spirare solemus) in sanguinem quodammodo accepto, et probe cum eo permisto.

566. Porro, istiusmodi acidi carbonici exhalatio, qualis e pulmonibus fit (568), apud chemicos certum signum habetur mutationis cuiusdam com-

positionis, in corpore unde ipsa oritur. Et satis verisimile est, sanguinem aliam quandam mutationem chemicam ibi loci subire, cuius acidi istius exhalatio signum sit et effectus; præsertim si animum ad hoc attendamus, nimirum nutrimentum omne prius per pulmonem transire, quam majorem circuitum intret, nec unquam, saltem in sano homine, crudum in eo sanguine conspici, quem cor sinistrum ad reliquum corpus miserit. Cruda fortasse materies, qualis ex intestinis defertur, oleosa, subdulcis, acescens, mediæ quasi naturæ inter fruges et carnes, in pulmone subigitur, in verum sanguinem (492, et seq.) vertitur, concoquitur

naturam, facta putrescens neque postea
character, (having) become putrescent (capable of putrefying) nor afterwards
 distinguenda a pristinis humoribus corporis.
to be distinguished from the former humours of the body.

567. Denique, sunt qui credunt calorem animalium quodammodo
Lastly, there are who believe that the heat of animals is in some way
 gigni in pulmone. Nam in aliis exemplis, dum calor fit,
generated in the lungs. For in other examples, whilst heat takes place,
 plurimum carbonicum acidum formatur; nimirum oxygenio aëris
a great deal (of) carbonic acid is formed; truly the oxygen of the air
 consumpto et conjuncto cum carbone. Discimus hoc imprimis
being consumed and combined with carbon. We learn this first of all
 ex flammâ, ubi est magnus calor, et, simul,
from flame, where (in which) there is great heat, and, at the same time,
 ingens vis istius acidi avolat. Ille lenis calor qui oritur
a great quantity of that acid passes off. That gentle heat which arises
 inter fermentandum, in multis exemplis docet idem.
during fermenting (fermentation), in many examples teaches the same.

568. Iste venenatus halitus, undecunque derivatus, videtur esse similis,
That poisoned vapour, whencesoever derived, seems to be similar
 sive evolutus spiritu, sive igne, sive
(the same), whether evolved by the breathing, or by fire (combustion), or
 fermentando. Extinguit pariter vitam et flammam:
by fermenting (fermentation). It extinguishes alike life and flame (com-
 pars ejus, scilicet, carbonicum acidum, attrahitur vivâ calce:
bustion): a part of it, namely, the carbonic acid, is attracted by quick lime:
 vero quod superest, nimirum azotium, sine oxygenio, redditur non
but what remains, namely the azote, without the oxygen, is rendered not
 minus eo (acido carb.), infestum vitæ et flammæ.
less than it, destructive to life and flame.

569. Autem animalia quo sunt calidioris sanguinis eo,
But animals by what they are of warmer blood by that,
 observantur, citius corrumpere aëra quem spirant,
they are observed, the more quickly to corrupt the air which they breathe,
 et consumere oxygenium; et quo habent respirationem perfectiorem
and to consume the oxygen; and by what they have respiration more perfect
 eo (observantur) plus calere. Sic vermes, qui spirant per
by that to grow more warm. Thus worms, which breathe through
 spiracula in cute, vix calent unum gradum thermometri
spiracles in the skin, scarcely warm one degree of the thermometer
 Fahrenheitiani supra elementum quod habitant; pisces qui itant
of Fahrenheit above the element which they inhabit; fishes which move

penitus, naturam animale demum induit, putrescens facta, neque postea a pristinis corporis humoribus distinguenda.

567. Denique, sunt qui credunt calorem animalium in pulmone quodammodo gigni. Nam, in aliis exemplis, dum calor fit, plurimum acidum carbonicum formatur; consumpto uimirum aëris oxygenio et cum carbone conjuncto. Hoc ex flamma imprimis discimus; ubi magnus calor est, et simul ingens vis istius acidi avolat. Idem docet calor ille lenis qui in multis exemplis inter fermentandum oritur.

568. Halitus iste venenatus, undecunque deri-

vatus, similis fere esse videtur, sive spiritu, sive igne, sive fermentando evolutus. Vitam pariter et flammam extinguit: pars ejus, acidum scilicet carbonicum, calce viva attrahitur; quod superest vero, azotium nimirum, sine oxygenio, non eo minus vitæ et flammæ infestam redditur.

569. Animalia autem, quo calidioris sanguinis saut, eo citius aëra quem spirant corrumpere, et oxygenium consumere, observantur; et quo perfectiorem respirationem habent, eo plus calere. Sic vermes, qui per spiracula in cute spirant, vix unum gradum thermometri Fahrenheitiani supra elementum quod habitant calent;

branchias duos ve tres gradus; amphibia quæ utuntur
(breathe by) gills two or three degrees; amphibia which use
 arbitrario pulmone paulo plus. Omnibus his est simplex cor,
a voluntary lung a little more. All these have a single heart,
 et pulmonalis arteria derivata ab aortâ, et spiritus,
and the pulmonary artery derived (given off) from the aorta, and the breath,
 qui tarde corrumpit aëra vel aquam ubi degunt, et sanguis
which slowly corrupts the air or water where they live, and the blood
 frigidus, saltem multo frigidior nostro. Calor quoque multorum,
cold, at least much colder than ours. The heat also of many,
 fortasse omnium animalium hujusmodi, variat plurimum secundum
perhaps of all animals of this class, varies very much according to
 calorem aquæ vel aëris in quo ipsa vivunt: ut experimenta,
the heat of the water or air in which they live: as the experiments,
 haud pauca, instituta a claro viro, Joanne Hunter, docent.
by no means few, instituted by a celebrated man, John Hunter, teach.

570. Vero animalia, quotquot instruntur duplici corde,
But, the animals, as many as are furnished with a double heart;
 totus sanguis quorum transit per pulmones priusquam redeat
the whole blood of whom passes through the lungs before that it returns
 iterum in aortam a venis cavis, quibus spiritus constans,
again into the aorta from the venæ cavæ, to whom the breathing is constant,
 onustus multo carbonico acido, potest ne intercludi quidem per
loaded with much carbonic acid, can not be interrupted even for
 breve spatium sine discrimine vitæ, omnia, ad unum,
a short time without danger of life, all, to one (without excep-
 tion) homo, quadrupedia, aves, genus cetæ, phocæ, sive
tion) man, quadrupeds, birds, the tribe of the whale, of the seal, whether
 habitant terras sive aquas, sunt calidi sanguinis: scilicet
they inhabit the land or the waters, are of warm blood: that is,
 calent circiter centum gradus, secundum instrumentum
they have a heat of about one hundred degrees, according to (of) the instrument
 jam dictum. Neque profecto calor horum variat multum,
already mentioned. Nor truly does the heat of these alter much,
 utcumque varius calor aquæ vel aëris quem habitant fuerit.
however altered the heat of the water or air which they inhabit shall be.

571. Denique, quædam insecta spirantia, vel saltem multum et
Lastly, some insects breathing, or at least much and
 cito corrumpentia aëra, sunt ejusdem caloris: hoc est
speedily corrupting the air, are of the same temperature; this is
 præsertim verum de apibus, calor quarum singularum vix
especially true of bees, the temperature of which individuals is scarcely

pisces, qui branchias agitant duos tresve gradus; amphibia, quæ arbitrario utuntur pulmone, paulo plus. His omnibus cor simplex est, et arteria pulmonalis ab aorta derivata, et spiritus qui aëra vel aquam ubi degunt tarde corrumpit, et sanguis frigidus, nostro saltem multo frigidior. Multorum quoque, fortasse omnium, hujusmodi animalium, calor plurimum variat, secundum calorem aquæ vel aëris in quo ipsa vivunt: ut docent experimenta haud pauca a claro viro Joanne Hunter instituta.

570. Animalia vero quotquot corde duplici instruntur, quorum totus sanguis prius per pulmones transit quam a venis cavis in aortam

iterum redeat, quibus spiritus constans, multo acido carbonico onustus, ne quidem per breve spatium, siue vitæ discrimine, intercludi potest, ad unum omnia, homo, quadrupedia, aves, genus cetæ, phocæ, sive terras sive aquas habitant, calidi sanguinis sunt: calent scilicet centum circiter gradus, secundum instrumentum jam dictum. Neque profecto multum variat horum calor, utcumque varius fuerit calor aquæ vel aëris quem habitant.

571. Denique, insecta quædam spirantia, vel saltem aëra multum et cito corrumpentia, ejusdem caloris sunt: de apibus præsertim hoc verum est, quarum singularum calor vix explo-

explorandus; vero calor examinis earundem est vix minor
to be examined; but the heat of the swarm of the same is hardly less (inferior to) than the temperature of the human body.

572. Vero hæc (sc. opinio) non secus ac aliæ opiniones
But this not otherwise than as the other opinions
 de ortu caloris animalium, non caret suis difficultatibus;
of the production of the heat of animals, does not want its own difficulties;
 quoniam hic calor semper est fere idem, sive aër qui
because this heat always is nearly the same, whether the air which
 circumdat et (is) quem trahimus, fuerit frigidissimus sive
surrounds and that which we breathe, (shall) be very cold or
 fervidissimus; scilicet, quo egemus majore subsidio caloris
very hot; that is, by what we require a greater supply of heat
 eo comparamus plus caloris nobismet; quo est opus
by that we provide more heat for ourselves; by what there is need
 minore eo gignimus minus. Quin et, quo calidior aër fuerit,
of a less by that we generate less. Moreover, the hotter the air (shall) be,
 et quo plus homo ipse caluerit eo frequentius et
and the more man himself shall become warm the more frequently and
 plenius reciprocatur spiritum.
fully he returns back the air (respires).

573. Denique, sunt qui contendunt, totis viribus,
Lastly, there are they who contend, with all their main,
 corpus aliquando non modo gignere nullum calorem, sed,
that the body sometimes not only generates no heat, but,
 reverà, (gignere) frigus, et sic servare semet multo frigidius
in fact, (that it generates) cold, and thus keeps itself much cooler
 calido aëre qui circumdat; veluti si quis permanserit,
than the warm air which surrounds it; as if a person should remain,
 parum calefactus, haud exiguum spatium temporis in clibano aut
little heated, no short space of time in an oven or
 vaporario.
stove bath.

574. Est non dubitandum, vaporationem tum a cute, sed
It is not to be doubted, that the evaporation as well from the skin, but
 multo magis ab pulmone ipso, multum temperare calorem
much more from the lung itself, greatly moderates the temperature
 corporis, quacunq; ratione is fuerit genitus: neque est in-
of the body, in whatever way it have been generated: nor is it in-

rândus; examinis earundem vero calor humani corporis calore vix minor est.

572. Hæc vero, non secus ac aliæ de ortu animalium caloris opiniones, suis difficultatibus non caret; quoniam hic calor semper fere idem est, sive aër qui circumdat, et quem trahimus, frigidissimus fuerit (570) sive fervidissimus; scilicet, quo majore caloris subsidio egemus, eo plus caloris nobismet comparamus; quo minore opus est, eo minus gignimus. Quin et quo calidior aër fuerit, et quo plus ipse caluerit, eo frequentius et plenius spiritum reciprocatur.

573. Denique, sunt qui totis viribus contendunt, corpus aliquando non modo nullum gignere calorem, sed revera frigus gignere, et sic semet multo frigidius servare aëre calido qui circumdat; veluti si quis spatium temporis haud exiguum in clibano, aut vaporario, parum calefactus permanserit.

574. Non est dubitandum, vaporationem tum a cute, sed multo magis ab ipso pulmone, calorem corporis, qua ratione cunq; is fuerit genitus, temperare multum: neque incredibile est, hanc vaporationem aliquando calorem re-

credibile hanc vaporatlonem aliquando plus quam compensare
credible that this evaporation sometimes more than compensates
 calorem genitum respirando, et itaque revera reddere corpus frigidius.
the heat produced by respiring, and thus in fact renders the body cooler.

575. Tamen, oportet fateri multum adhuc requiri, ut hæc
However, it behoves us to confess that much as yet is required, that this
 opinio recipiatur pro certâ et stabilitâ doctrinâ. Sane multa
opinion be admitted as a certain and established doctrine. Truly many
 et pulcherrima experimenta instituta sunt nostris temporibus
and very beautiful experiments have been instituted in our own times
 de hac re, quæ faciant fidem chemicos tandem ingres-
upon this subject, which cause the belief that chemists at length have en-
 sos esse idoneam viam, quam nuper et olim mathematici et
tered upon the proper path, which lately and formerly mathematicians and
physiologi quæsiverant frustra, ut detegerent et patefacerent hoc
physiologists had sought after in vain, to detect and lay open this
 arcanum Naturæ. Neque profecto mirum latissimum
secret of Nature. Nor indeed is it wonderful that this most extensive
 campum, adeo nuper patefactum, nondum esse ita explorata
field, so lately laid open, should not yet have been so far explored
 ut habeamus plenam notitiam ejûs.
that we should have a full knowledge of it.

576. Fuerunt, et nuper et olim, multi qui crediderunt
There have been, both lately and formerly, many who believed
 sanguinem, calefactum alibi, potius frigescere in pulmone: enim
that the blood, heated elsewhere, rather grew cold in the lung: for
 aër, quem traxeramus frigidum, emissus spiritu calet.
the air, which we had drawn in cold, sent forth by the breath is warm.

577. Medici scriptores quoque imposuerunt haud pauca alia officia
Medical writers also have assigned not a few other duties
 pulmوني; scilicet, fingendi et tornandi rubros globulos sanguinis,
to the lung; namely, of moulding and polishing the red globules of the blood,
 et hauriendi ab aëre multa necessaria ad vitam, imprimis
and of drawing in from the air many things necessary to life, especially
 oxygenium et similia. Vero nihil certi constat de his,
oxygen and the like. But nothing certain is established upon these sub-
 habemus ne quidem multum verisimilis.
jects, we have not even much of probable (respecting them).

578. Naturalis respiratio fere absolvitur hac lege, ut circiter
Natural respiration mostly is performed by this law, that about
 quatuor ictus cordis et arteriarum fiant tempore uniûs
four strokes of the heart and arteries are made in the time of one

spirando genitum plus quam compensare, et corpus itaque revera frigidius reddere.

575. Tamen fateri oportet, multum adhuc requiri, ut hæc opinio pro certa et stabilita doctrina recipiatur. Multa sane et pulcherrima de hac re nostris temporibus instituta sunt experimenta, quæ fidem faciant, *chemicos* tandem idoneam ingressos esse viam, quam frustra nuper et olim quæsiverant mathematici et *physiologi*, ut hoc Naturæ arcanum detegerent et patefacerent. Neque profecto mirum, latissimum campum, adeo nuper patefactum, nondum ita exploratum esse, ut plenam ejus notitiam habeamus.

576. Multi et nuper et olim fuerunt, qui crediderunt potius sanguinem alibi calefactum in pulmone frigescere: calet enim aër spiritu emissus quem frigidum traxeramus.

577. Alia quoque officia haud pauca scriptores medici pulmوني imposuerunt; globulos scilicet rubros sanguinis fingendi et tornandi, multa-que ad vitam necessaria, *oxygenium* imprimis, ab aëre hauriendi, et similia. De his vero nihil certi constat, ne quidem multum verisimilis habemus.

578. Respiratio naturalis hac fere lege absolvitur, ut quatuor circiter cordis et arteriarum ictus fiant tempore unius respirationis. Lucif-

respirationis. Pulsu incitato, spiritus plerumque fit
respiration. The pulse being quickened, the breathing generally becomes
 celerior, temperato, tardior (fit). Sed talis convenientia non
quicker, being moderated, slower. But such a correspondence is not
 semper observatur: enim spiritus est non adeo celer in infantibus,
always observed: for the breathing is not so quick in infants,
 quibus est pulsus velocissimus: idem nonnunquam observatur
who have the pulse very quick: the same thing sometimes is observed
 in febribus. Vero in difficill et laboriosâ respiratione, duodecim
in fevers. But in difficult and laborious respiration, twelve
 pulsus et amplius aliquando observantur (in) tempore unius
pulsations and more sometimes are observed in the time of one
 respirationis. Quin et, possumus facile efficere, imperio solo
respiration. Moreover, we can easily effect, by the control alone
 voluntatis, ut pulsus fiant plures triplo vel quadruplo
of the will, that the pulsations be made more (exceed) by triple or quadruple
 solito, antequam reciprocemus spiritum. Vero urinatores, ut ferunt,
than usual, before that we reciprocate the breath. But divers, as they say,
 discunt cohibere suum spiritum fere decies diutius quam alii
learn to restrain their breathing almost ten times longer than other
 homines.
persons.

579. Habemus imperium in omnes musculos respirationis, quippe
We have control over all the muscles of respiration, as being
 qui inserviant variis usibus præterquam spiritui.
what serve for various uses besides the breathing.

580. Igitur, imprimis, omne animal cui pulmo datur,
Therefore, in the first place, every animal to which a lung is given,
 edit vocem, quâ exprimat suas varias
utters a word (is gifted with voice), by which it can express its various
 cupiditates, que alios affectus animi. Vero hæc fit aere
desires, and other affections of its mind. But this is caused by the air
 transeunte per glottidem, nunc magis nunc minus constrictam, tantâ
passing through the glottis, now more now less constricted, with so much
 vi, ut coniciat cartilagine et ligamenta laryngis in tremores,
force, as to throw the cartilages and ligaments of the larynx into tremors,
 quales faciunt sonum, et quorum aer ipse fiat particeps.
such as cause a sound, and of which the air itself becomes a partaker.

Vox quoque fit fortior, clarior, gratior, dum transit
The voice also becomes stronger, louder, more agreeable, while it passes
 per os et nares, ossa quarum partium et cartilagine
through the mouth and nose, the bones of which parts and the cartilages

tato pulsus, celerior plerumque fit spiritus, temperato tardior. Sed non semper talis convenientia observatur: in infantibus enim, quibus pulsus velocissimus est, spiritus non adeo celer: idem in febribus nonnunquam observatur. In respiratione vero difficili et laboriosa, pulsus aliquando duodecim et amplius observantur tempore unius respirationis. Quin et solo voluntatis imperio facile efficere possumus, ut pulsus triplo vel quadruplo plures solito fiant, antequam spiritum reciprocemus. Urinatores vero, ut ferunt, decies fere diutius, quam alii homines, spiritum suum cohibere discunt.

579. Imperium in omnes respirationis musculos habemus, quippe qui variis usibus, præterquam spiritui, inserviant (331, 334, 556).

580. Imprimis igitur omne animal cui pulmo datur vocem edit, qua varias suas cupiditates, aliosque animi affectus, exprimat. Hæc vero fit transeunte aere per glottidem, nunc magis nunc minus constrictam, tanta vi, ut cartilagine et ligamenta laryngis in tremores coniciat, quales sonum faciunt, et quorum aer ipse particeps fit. Vox quoque fortior, clarior, gratior fit, dum per os et nares transit, quarum partium ossa, et cartilagine, membranæque

que demum membranæ ipsæ juvant, sono quem
and even the membranes themselves assist, by the sound which
 acceperant repercusso et aucto. Vox insuper, variat,
they had received being reverberated and increased. The voice moreover, varies,
 non modo secundum variam aperturam glottidis, sed prout
not only according to the varied aperture of the glottis, but according as
 tota larynx fuerit strictior vel laxior, depressa vel elevata:
the whole larynx shall be more constricted or lax, depressed or elevated:
 et plurimi minuti muscoli conspirant in hos fines. Fabrica
and many minute muscles conspire for these purposes. The mechanism
 partium ipsarum explorata per scalpellum, et quidem visus et
of the parts themselves explored by the scalpel, and indeed the sight and
 tactus gutturis vel nasi dum aliquis edit vocem, et
touch of the throat or nose whilst any one utters words (speaks), and
 vox ipsa corrupta variis et miris modis, propter
the voice itself corrupted in various and wonderful ways, on account of
 quæ dicta sunt vitia partium, docent omnia hæc.
what have been named disorders of the parts, shew all these things.

581. Loquela datur homini soli, quippe qui solus noverit
Speech is given to man alone, as being who alone would (have)
 uti mirabili dono. Profecto, multa animalia didicerunt
know how to use the admirable gift. Indeed, many animals have learned
 loqui, vero nulla uti loquelâ; scilicet, quia mens deest.
to speak, but none to use speech; that is, because the mind is wanting.
 Loquela fit ope linguæ, labiorum, gingivarum, dentium,
Speech is effected by means of the tongue, of the lips, gums, teeth,
 veli penduli palati, ossis palati et nasi, et demum
velum pendulum palati, the bone of the palate and of the nose, and lastly
 gutturis conspirantium variis modis; quâ machinatione tandem,
of the throat contributing in various ways; by which mechanism at length,
 vox, interrupta et mutata, formatur in distinctas literas seu
the voice, interrupted and changed, is formed into distinct letters or
 elementa; discimus has primâ ætate, quasi per instinctum et
elements; we learn these at the first age, as it were by instinct and
 imitationem, nedum conscii laboris, nec modi quo
imitation, (while) not yet conscious of the labour, nor of the manner in which
 efficimus singulas literas.
we form (articulate) single letters.

582. Vero ratio proferendæ uniuscujusque literæ, et machinatio
But the method of pronouncing every single letter, and the mechanism
 partium quâ formatur, sunt detectæ sedulâ observatione,
of the parts by which it is formed, have been detected by sedulous observation,

demum ipsæ, juvant, sono quem acceperant repercusso et aucto. Variat insuper vox non modo secundum variam glottidis aperturam, sed prout larynx tota strictior vel laxior, depressa vel elevata fuerit: et in hos varios fines plurimi minuti muscoli conspirant. Hæc omnia plane docent ipsarum partium fabrica per scalpellum explorata, et quidem visus et tactus gutturis vel nasi dum vocem edit aliquis, et vox ipsa variis et miris modis corrupta, propter vitia quæ dicta sunt partium.

581. Soli homini loquela datur, quippe qui solus mirabili dono uti noverit. Multa pro-

fecto animalia loqui didicerunt, nulla vero loquela uti; scilicet quia mens deest. Fit autem loquela ope linguæ, labiorum, gingivarum, dentium, veli penduli palati, ossis palati, et nasi, et demum gutturis, variis modis conspirantium; qua tandem machinatione, vox interrupta et mutata, in literas distinctas seu elementa formatur: has prima ætate per instinctum quasi et imitationem discimus, nedum conscii laboris, nec modi quo singulas literas efficimus.

582. Uniuscujusque vero literæ ratio proferendæ, et machinatio partium qua formatur,

neque tantus labor fuit prorsus inutilis humano generi: enim
nor has so great labour been wholly useless to the human race: for
 docemur corrigere varia vitia loquelæ hac notitiâ.
we are taught to correct the various disorders of speech by this knowledge.
 Immo, sunt quibus est unum opus docere mutos
Nay, there are those to whom it is the sole labour to teach the dumb
 sermonem. Plerique hi nascuntur tantum surdi, non manci aut
speech. Most (of) these are born only deaf, not deficient or
 imperfecti organis loquelæ: nec possunt imitari voces quas
imperfect in the organs of speech: nor can they imitate words which
 nunquam noverint existere. Quin et, pueri jam loquentes, si
they never knew to have existed. Moreover, children already speaking, if
 fiunt surdi, quovis casu, solent obmutescere. Vero
they become deaf, by any accident, are accustomed to become dumb. But
 nunc utrique, sive facti sunt surdi et ideo muti naturâ
now both, whether they have become deaf and therefore dumb by nature
 sive morbo, tactu et visu organorum loquelæ dum
or by disease, by the touch and sight of the organs of speech whilst
 aliquis loquitur, discunt distinguere et tandem proferre
some one is speaking, learn to distinguish and at length to pronounce
 literas suis organis: revera opus plenum tædii, sed
letters with their own organs: truly a work full of weariness, but
 præmium nobile.
the reward noble.

583. Præterea, musculi respirationis opitulantur variis actionibus
Besides, the muscles of respiration assist the various actions
 viscerum abdominis. Videntur promovere motum sanguinis
of the viscera of the abdomen. They seem to promote the circulation of the blood
 per abdomen ipsum, et præsertim jecur, alterno et
through the abdomen itself, and especially the liver, by the alternate and
 valido motu quo sæpe agitantur. Vero transverso septo
powerful motion by which they often are agitated. But the transverse septum
 et musculis abdominis simul contractis, totum
and muscles of the abdomen being at the same time contracted, the whole
 abdomen, et quicquid est in eo, comprimuntur veluti in prelo.
abdomen, and whatever is in it, are compressed as if in a press:
 Plerumque est opus his viribus ad evacuandam alvum
For the most part there is need of these powers to evacuate the belly
 et reddendam urinam (imprimis ad superandum renixum qui
and to void the urine (especially to overcome the resistance which
 oritur a musculis claudentibus ostium vesicæ et anum;
arises from the muscles shutting up the mouth of the bladder and the anus:

sedula observatione detectæ sunt; neque tantus labor generi humano prorsus inutilis fuit: hac enim notitia varia loquelæ vitia corrigere docemur. Immo sunt quibus unum opus est sermonem mutos docere. Hi plerique surdi tantum, non organis loquelæ manci aut imperfecti, nascuntur: nec voces possunt imitari, quas nunquam noverint existere. Quin et pueri jam loquentes, si casu quovis surdi fiunt, obmutescere solent. Nunc vero utrique, sive natura sive morbo surdi et ideo muti facti sunt, tactu et visu organorum loquelæ, dum loquitur aliquis, discunt literas distinguere, et tandem

suis organis proferre: opus revera tædii plenum, sed nobile præmium.

583. Opitulantur præterea respirationis musculi variis actionibus viscerum abdominis. Ipsum per abdomen, et jecur præsertim, sanguinis motum promovere videntur, alterno et valido sæpe quo agitantur motu. Contractis vero septo transverso simul et musculis abdominis, abdomen totum, et quicquid in eo est, veluti in prelo comprimuntur. His viribus plerumque opus est ad alvum evacuandam et urinam reddendam (imprimis ad superandum renixum qui a musculis ostium vesicæ et anum

enim hoc (renixu) superato, contrahens vis intestinorum et vesicæ
for this being overcome, the contracting power of the intestines and bladder
 sufficit ad expellendum urinam et sterces;) promovent partum
suffices to expel the urine and fæces;) they promote parturition
 pari ratione, et conspirant cum ventriculo male affecto et
for a similar reason, also concur with the stomach badly affected and
 jam nauseante, et faciunt vomitum.
now nauseated, and cause vomiting.

584. Præterea inspiratio, quatenus distendat thoracem, si spiritus
Moreover inspiration, inasmuch as it distends the thorax, if the breathing
 reprimitur, figit humeros et dorsum et cervicem, et sic dat
is restrained, fixes the shoulders and back and neck, and thus affords
 firmius fundamentum validissimis musculis trunci et
a steadier basis (fulcrum) to the most powerful muscles of the trunk and
 brachiorum, quale requiritur in omne majore nisu.
arms, such as is required in every more powerful effort.

585. Denique, quædam affectiones respirationis nedum morbidæ,
Lastly, certain affections of respiration not quite morbid,
 indicant statum tum animi tum corporis, que id homine
point out the state as well of the mind as of the body, and that the person
 sæpe inscio aut nolente.
often being unconscious or unwilling.

586. Plena exspiratio, facta tantâ vi ut feriat aures
A deep expiration, made with so much force as to strike the ears
 astantium, dicitur suspirium. Præter solitum vehemens et
of the bystanders, is called sighing. An unusually strong and
 plena inspiratio sæpe præcedit. Fit propter sanguinem male
full inspiration often precedes. It arises on account of the blood badly
 expeditum per pulmonem, ob debiliorem actionem
dispatched (difficultly passed) through the lung, because of the weaker action
 cordis que aliarum moventium virium. Hinc comitatur multos
of the heart and other moving powers. Hence it accompanies many
 morbos; tamen familiare sanis, viribus exhaustis
diseases; nevertheless common to the healthy, the strength being exhausted
 longâ vigiliâ, aut nimio labore. Demum, est sæpe index
by long watching, or by excessive labour. In fine, it is often an index
 animi, quatenus ducat originem a mœstitiâ, vel metu, vel
of the mind, so far as it may derive its origin from grief, or fear, or
 quovis graviore affectu frangente vires corporis.
any more severe passion breaking down the strength of the body.

claudentibus oritur; hoc enim superato, vis contrahens intestinorum et vesicæ sufficit ad urinam et sterces expellendum); pari ratione partum promovent, et cum ventriculo male affecto et jam nauseante conspirant, et vomitum faciunt.

584. Inspiratio præterea, quatenus thoracem distendat, si spiritus reprimitur, humeros, et dorsum, et cervicem, figit, et sic firmius fundamentum dat musculis trunci et brachiorum validissimis, quale in omni majore nisu requiritur.

585. Denique, affectiones quædam respirationis, nedum morbidæ, statum tum animi tum

corporis indicant, idque sæpe inscio aut nolente homine.

586. Suspirium dicitur plena exspiratio tanta vi facta, ut aures astantium feriat. Præcedit sæpe inspiratio præter solitum vehemens et plena. Fit propter sanguinem per pulmonem male expeditum, ob debiliorem cordis aliarumque virium moventium actionem. Hinc multos morbos comitatur; sanis tamen familiare, exhaustis viribus longa vigilia aut nimio labore. Animi demum index sæpe est, quatenus a mœstitiâ, vel metu, vel graviore quovis affectu corporis vires frangente, originem ducat.

587. Oscitatio est quodammodo affinis huic, quantum oriatur a
Yawning is in some degree akin to it, so far as it arises from
 languidiore motu sanguinis per pulmones; ita ut alterum
the more languid motion of the blood through the lungs; so that the one
 (suspirium) possit, non indecore, substitui pro altera (oscitatione).
may, not unbecomingly, be substituted for the other.
 Oscitatio est ingens, plena, sonora inspiratio, facta ore
Yawning is a large, full, sonorous inspiration, made with the mouth
 hianti, quam (sc. inspir.) æqua exspiratio solet excipere, et
gaping, which an equal expiration is accustomed to succeed, and
 valida extensio omnium artuum interdum comitatur, quæ solet
a powerful extension of all the limbs sometimes accompanies, which is used
 vocari *pandiculatio*. Affectio familiaris esurientibus, somniculosis,
to be called pandiculation. An affection common to the hungering, drowsy,
 exhaustis labore et vigiliis; frequens hysterisis, et
those exhausted by labour and watchings; frequent in hysterical persons, and
 sæpe propagata, etiam inter sanissimos, in mirum modum,
often propagated, even amongst the most healthy, in a wonderful manner,
 contagio seu imitatione.
by contagion or imitation.

588. Risus est plena inspiratio, cui repetitæ, interruptæ, et
Laughter is a full inspiration, to which repeated, interrupted, and
 valde sonoræ expirationes succedunt, adeo ut spiritus nonnunquam
very loud expirations succeed, so that the breath sometimes
 fere intercludatur, vel vasa pulmonis vehentia sanguinem
is nearly stopped, or the vessels of the lungs carrying blood
 distenta ultra modum, demum rumpantur, non sine periculo
distended beyond bounds, at length are ruptured, not without the danger
 suffocationis. Nascitur, plerumque, ab aliqua nova, levi, grata,
of suffocation. It arises, generally, from some new, slight, agreeable,
 ludicra, ægre definienda affectione animi; vel a titillatione
ludicrous, difficultly to be defined affection of the mind; or from the tickling
 quarundam partium corporis, quæ habent acriorem sensum.
of certain parts of the body, which have a more acute sensibility.
 Vehemens, non caret periculo: modicus, habetur saluberrimus;
Violent, it is not free from danger: moderate, it is considered very salutary;
 enim grate promovet cursum sanguinis, et quatit que excitat
for it agreeably promotes the course of the blood, and shakes and excites
 totum corpus; quod forsitan nec minus pertinet ad rem,
the whole body; and what perhaps does not less relate to the matter,

587. Huic quodammodo affinis est Oscitatio, quantum a languidiore sanguinis motu per pulmones oriatur; ita ut alterum pro altera non indecore substitui possit. Oscitatio est ingens, plena, sonora inspiratio, hianti ore facta, quam æqua exspiratio solet excipere, et interdum omnium artuum valida extensio comitatur, quæ *pandiculatio* vocari solet. Affectio esurientibus, somniculosis, labore et vigiliis exhaustis, familiaris; *hysterisis* frequens, et inter sanissimos etiam contagio seu imitatione (351) mirum sæpe in modum propagata.

interruptæ, et valde sonoræ expirationes succedunt, adeo ut spiritus nonnunquam fere intercludatur, vel vasa sanguinem vehentia pulmonis ultra modum distenta demum rumpantur, non sine suffocationis periculo. Nascitur plerumque ab animi affectione aliqua nova, levi, grata, ludicra, ægre definienda; vel a titillatione partium corporis quarundam, quæ acriorem sensum habent. Vehemens periculo non caret; modicus saluberrimus habetur; cursum enim sanguinis grate promovet, et totum corpus quatit excitatque; nec minus forsitan ad rem pertinet, quod mentem graviori-

denotat mentem (esse) vacuam gravioribus curis. Hilaris
it shews the mind to be free from the more weighty cares. A cheerful
 vultus, haud facile depingendus, comitatur risum.
countenance, not easily to be described, accompanies laughter.

589. Fletus, oppositus huic, si spectamus excitantes causas, differt
Weeping, opposite to this, if we look to the exciting causes, differs
 parum machinatione partium quâ (machinatione) fit.
little in the mechanism of the parts by which it is caused.

Plena inspiratio quoque contingit huic, et breves, fractæ, sonoræ
A full inspiration also belongs to this, and short, broken, sonorous

expirations, cum editâ, querulâ, atque ingrâtâ voce. Vultus
expirations, with a lofty, querulous, and disagreeable voice. The countenance

est simul tristis, et lachrymæ effunduntur. Plerumque oritur
is at the same time sorrowful, and tears are shed. It generally arises

ab aliquo gravi affectu animi, imprimis mœrore, que solet
from some depressing affection of the mind, especially grief, and is accustomed

multum levare eundem: saltem præcavere, quam optime,
greatly to relieve the same: at least to provide against, in the best manner possible,

pericula instantia a tali affectu animi. Infantes quoque
the dangers impending from such an affection of the mind. Infants also

sæpe flent, a dolore corporis. Est raro periculosus, nisi
often weep, from pain of the body. It is seldom dangerous, unless

aliquando infantibus, quibus et risus et fletus, a levissimis
sometimes to infants, to whom both laughing and weeping, from the slightest

causis, sunt vehementiores quam adultis. Uterque (est) frequentissimus
causes, are more violent than to adults. Both is very frequent

et immodicus hysteriis, non tamen, ut videtur, sine
and immoderate to hysterical persons, not however, as it appears, without

aliquâ causâ, verâ vel imaginariâ, quamvis sæpe nolint fateri
some cause, real or imaginary, although they often are unwilling to confess

hanc causam. Uterque (est) proprius homini, fortasse quia oritur
this cause. Both is peculiar to man, perhaps because it arises

ab affectionibus animi, quibus bellæ carent.
from affections of the mind, such as brutes want.

590. Singultus, forsitan, est annumerandus his, quippe qui
Hiccup, perhaps, ought to be reckoned with these, as being that which

sæpe accidat utentibus integrâ valetudine, veluti si secutus
often happens to those enjoying sound health, as when it has

fuerit immodicum risum; quamvis sæpe etiam sit morbidus, et
followed immoderate laughter; although often also it is morbid, and

in quibusdam morbis signum pessimi omnis. Vero est nihil
in some diseases a symptom of the worst omen. But it is nothing

bus curis vacuam denotat. Risum comitatur vultus hilaris, verbis haud facile depingendus.

589. Fletus huic oppositus, si causas excitantes spectamus, machinatione partium qua fit parum differt; huic quoque plena inspiratio contingit, et breves, fractæ, sonoræ expirations, cum voce edita querula atque ingrata. Vultus simul tristis est, et lachrymæ effunduntur. Ab aliquo gravi animi affectu, imprimis, plerumque oritur, eundemque multum levare solet: saltem pericula a tali animi affectu instantia (61, 346) quam optime præcavere. Infantes quoque a dolore corporis sæpe flent. Raro periculosus est, nisi aliquando in-

fantibus, quibus et risus et fletus a levissimis causis vehementiores sunt quam adultis. Uterque hysteriis frequentissimus, et immodicus, non tamen, ut videtur, sine causa aliqua, vera vel imaginaria, quamvis causam hanc sæpe nolint fateri. Uterque homini proprius, fortasse quia ab animi affectionibus oritur, quibus bellæ carent.

590. Singultus forsitan his annumerandus est, quippe qui sæpe integra valetudine utentibus accidat, veluti si risum immodicum secutus fuerit; quamvis sæpe etiam morbidus sit, et in quibusdam morbis pessimi omnis signum. Est vero nihil aliud quam subita et sonora convulsio

aliud quam subita et sonora convulsio transversi septi;
else than a sudden and loud convulsion of the transverse septum;
 ventriculus quoque, ut videtur, aliquando convellitur; frequentissima
the stomach also, as it appears, is sometimes convulsed; the more frequent
 causa ejûs, (præter (quod) jam dictum (est), scilicet,
cause of it, (besides what already has been mentioned, namely,
 vehementem actionem transversi septi,) est aliquid irritamentum
the violent action of the transverse septum,) is some irritation
 afficiens ventriculum: distentio sola ejûs sæpe inducit singultum;
affecting the stomach: distention alone of it often brings on hiccup;
 hinc familiarem ebriosis, aut gravibus crapulâ.
hence common to drunken persons, or those oppressed by a surfeit.

Solet comitari inflammationem et gangrænam ventriculi
It is accustomed to accompany inflammation and gangrene of the stomach
 vel intestinorum. Sæpe observatur importunissimus a debilitate,
or of the intestines. Often it is observed very troublesome from debility,
 sub finem longorum morborum, aut in paralyti. Sæpe,
towards the end of long (protracted) diseases, or in paralysis. Often,
 post calculum exsectum ex vesicâ, si curatio est
after a calculus having been cut out from the bladder, if the cure (operation) is
 cessura male. Interdum quoque, pergens diu,
about to fall out (terminate) badly. Sometimes also, going on for a long time,
 insidet corpori quasi per aliquam consuetudinem, sistendus
it settles in the body as if by some habituation, to be stopped
 difficillime. Autem ratio singultûs est sæpe valde obscura.
most difficultly. But the cause of hiccup is often very obscure.

591. Quin et, respiratio sæpissime impeditur plus minus, insigni
Moreover, respiration very often is impeded more (or) less, to the great
 incommodo ægrotantis, nec raro periculo.
inconvenience of the sick, nor unfrequently danger.

592. Malum vocatur apud medicos Dyspnœa, siquando spiritus
The disorder is called by physicians Dyspnœa, whenever the breath
 trahitur difficiliter, laboriose, neque plene, neque sine dolore;
is drawn more difficultly, laboriously, nor fully, nor without pain;
 profecto frequentissimum vitium, que comes et pars multorum
truly a very frequent disorder, and an attendant and part of many
 morborum.
diseases.

593. Agnoscit varias causas propter multa organa quæ
It acknowledges various causes on account of the many organs which
 inserviunt respiratori, que (propter) eadem connexa cum aliis partibus,
subserve to respiration, and the same being connected with other parts,

septi transversi: ventriculus quoque, ut vide-
 tur, aliquando convellitur; frequentissima ejus
 causa (præter jam dictum, vehementem scilicet
 septi transversi actionem) est irritamentum
 quodvis ventriculum afficiens: distentio ejus
 sola siugultum sæpe inducit: hinc ebriosis aut
 crapula gravibus familiarem. Ventriculi vel
 intestinorum inflammationem et gangrænam
 comitari solet. Sæpe a debilitate, sub finem
 longorum morborum, aut in paralyti, sæpe
 post exsectum calculum ex vesica, si male ces-
 sura est curatio, observatur importunissimus.
 Interdum quoque diu pergens, quasi per con-

uetudinem aliquam (369, 386, 387,) corpori in-
 sidet difficillime sistendus. Singultus autem
 ratio sæpe valde obscura est.

591. Quin et sæpissime respiratio variis mor-
 bis plus minus impeditur, insigni ægrotantis
 incommodo, nec raro periculo.

592. *Dyspnœa* apud medicos vocatur malum,
 siquando spiritus difficiliter, laboriose, neque
 plene, neque sine dolore, trahitur: vitium pro-
 fecto frequentissimum, multorumque morborum
 comes et pars.

593. Varias agnoscit causas, propter multa
 organa quæ respiratori inserviunt, eademque

et demum propter multas externas res, imprimis qualitates
and lastly on account of many external things, especially the qualities
 aëris, densitatem, raritatem, calorem, &c. quæ possunt cor-
of the air, density, rarefaction, heat, &c. which may be cor-
 rumpi variis modis.
rupted in various ways.

594. Igitur respiratio impeditur, homine prorsus sano, multis
Therefore respiration is impeded, the person being quite healthy, by many
 vitiis aëris ipsius; veluti nimiam, præsertim subitam, levitate,
faults of the air itself; as by excessive, especially sudden, levity,
 raritate, humiditate, impuritate, corruptione, imprimis si fuerit onustus
rarefaction, humidity, impurity, corruption, especially if it should be loaded
 noxiis et acribus, aut venenatis vaporibus, vis quorum
with noxious and acrid, or poisoned vapours, the influence of which
 est nonnunquam tanta, ut non modo impediunt respirationem,
is sometimes so great, as (that they) not only (to) impede respiration,
 sed brevi extinguant vitam ipsam.
but quickly extinguish life itself.

595. Porro variæ obstructions, sive a mero tumore sive ab
Moreover various obstructions, whether from mere tumour or from
 inflammatione, sive contractione oris, narium, gutturis, glottidis,
inflammation, or contraction of the mouth, nostrils, throat, glottis,
 asperæ arteriæ, bronchiorum, quæ claudant, aliquo modo, vias
aspera arteria, bronchia, which may close, in any way, the passages
 quas aër debet subire, impediunt respirationem.
which the air ought to enter, impede respiration.

596. Impeditur quoque omni vitio pulmonis, inflammati,
It is impeded also by every disease of the lung, being inflamed,
 obstructi tumoribus, inundati multâ aquâ, muco, sero, sanguine,
obstructed by tumours, inundated with much water, mucus, serum, blood,
 neque dilatato ut decet.
and not dilated as it ought.

597. Vero pulmone sano et omnibus viis liberis,
But the lung being sound and all the passages being free,
 quibus itur, (impersonaliter) ad eum, thorax ipse oppletus aquâ,
by which it is gone, (there is access) to it, the thorax itself filled with water,
 sanguine pure, aëre ipso admisso per vulnus impedi-
blood, pure, the air itself being admitted through a wound will hinder
 amplificationem pulmonis et ideo respirationem. Vulnus vel unius
the enlargement of the lung and therefore respiration. A wound even of one
 lateris thoracis (tunc nimirum aliâ via, patente
side of the thorax (then truly another way, being open

cum aliis partibus connexa, et demum propter multas externas res, aëris imprimis qualitates, densitatem, raritatem, calorem, &c. quæ variis modis corrumpi possunt.

594. Igitur impeditur respiratio, sano prorsus homine, multis vitiis aëris ipsius: veluti nimiam, præsertim subitam, levitate, impuritate, corruptione, imprimis si vaporibus noxiis, et acribus, aut venenatis, onustus fuerit: quorum nonnunquam tanta vis est, ut non modo respirationem impediunt, sed vitam ipsam brevi extinguant (54).

595. Porro, obstructions variæ, sive a mero tumore, sive ab inflammatione, sive contrac-

tionem, oris, narium, gutturis, glottidis, asperæ arteriæ, bronchiorum, quæ vias quas aër subire debet aliquo modo claudant, respirationem impediunt.

596. Impeditur quoque omni vitio pulmonis, inflammati, tumoribus obstructi, inundati multa aqua, muco, sero, sanguine, neque ut decet dilatato.

597. Sano vero pulmone, et liberis omnibus viis quibus ad eum itur, thorax ipse oppletus aqua, sanguine, pure, aëre ipso per vulnus admissio, pulmonis amplificationem, et ideo respirationem impediunt. Vulnus vel unius lateris thoracis (alia tunc nimirum aëri patente via,

aëri, si thorax ampliatur, quam per asperam arteriam) to the air, if the thorax be enlarged, than through the aspera arteria) impedit respirationem; vero vulnus utriusque lateris brevi supprimit impedes respiration; but a wound of both sides quickly suppresses eandem. the same.

598. Multiplicia vitia quoque organorum quæ ampliant pectus, The manifold disorders also of the organs which enlarge the chest, debilitas, paralysis, spasmus, inflammatio, dolor, rigiditas transversi debility, paralysis, spasm, inflammation, pain, rigidity of the transverse septi, aut musculorum abdominis, aut eorum qui jacent septum, or of the muscles of the abdomen, or of those which lie inter costas, reddent respirationem imperfectam et difficilem. Quin et, between the ribs, will render respiration imperfect and difficult. Moreover, moventibus organis ipsis sanis, actio eorum impedita quovis the moving organs themselves being sound, the action of them impeded in any modo, quo pectus minus ampliatur, {faciet difficilem way, by which the chest may not be so well enlarged, will cause difficult respirationem: veluti costæ factæ rigidæ, movendæ ægre, vel respiration; as when the ribs become rigid, are to be moved difficultly, or descensus transversi septi impeditus propter aquam, aut the descent of the transverse septum is hindered on account of water, or aëra, aut cibum, aut potum, aut fœtum, distendentia abdomen vel air, or food, or drink, or the fœtus, distending the abdomen or uterum, vel intestina, vel ventriculum, ve auctam molem cujusvis uterus, or intestines, or stomach, or the increased bulk of any visceris, vel demum omnia prementia sursum plus justo; hinc viscus, or lastly all pressing upwards more than proper; hence fere omnis difficultas spirandi gravior ægro decumbenti. almost every difficulty of breathing more severe to the patient lying down.

599. Denique, organa respirationis, tum magni musculi tum quoque, Lastly, the organs of respiration, as well the great muscle as also, ut videtur, minutissimæ fibræ quibus bronchia instruuntur, as it appears, the minutest fibres with which the bronchia are furnished, vel interdum rapta in abnormes motus, convelluntur, per consensum either sometimes hurried into irregular motions, are convulsed, by consent cum aliis partibus, imprimis ventriculo, vel ægre valent ad solitos with other parts, especially the stomach, or hardly are able for the usual motus: unde respiratio impedita. motions: from whence respiration (is) impeded.

600. Postremo, sanguis ipse, transmissus ægrius per In fine, the blood itself, transmitted with more difficulty through

si thorax ampliatur, quam per asperam arteriam) respirationem impedit: ntriusque vero lateris vulnus eandem brevi supprimit.

598. Vitia quoque multiplicia organorum quæ pectus ampliant, debilitas, paralysis, spasmus, inflammatio, dolor, rigiditas, septi transversi, aut musculorum abdominis, aut eorum qui iuter costas jacent, respirationem imperfectam et difficilem reddent. Quin et, sanis ipsis organis moventibus, actio eorum quovis modo impedita, quo minus pectus ampliatur, respirationem faciet difficilem: veluti costæ rigidæ factæ, ægre, movendæ, vel descensus septi transversi impeditus, propter aquam, aut aëra,

aut cibum, aut potum, aut fœtum, abdomen vel uterum, vel intestina, vel ventriculum, distendentia, auctamve visceris cujusvis molem, vel demum omnia plus justo sursum prementia: hinc gravior fere omnis spirandi difficultas decumbenti ægro.

599. Denique, organa respirationis, tum magni musculi, tum quoque ut videtur, fibræ minutissimæ, quibus bronchia instruuntur, per consensum cum aliis partibus, ventriculo imprimis, vel convelluntur interdum in motus abnormes rapta, vel ad solitos motus ægre valent: unde impedita respiratio.

600. Postremo, sanguis ipse per pulmones

pulmones, vel a vitio, puta fabricâ organorum
the lungs, either from disorder, for instance, from the structure of the organs
 quæ movent eum læsâ, vel a debilitate momentum
which move it being injured, or from debility of the moving
 virium, sæpe facit spiritum difficilem et laboriosum, qualis
powers, often renders the breathing difficult and laborious, such as
 solet accidere moribundis.
is accustomed to happen to persons dying.

601. Tot tamque diversis causis impeditæ respirationis bene
The many and so different causes of impeded respiration being clearly
 perspectis, (quarum aliæ invicem inducunt que intendunt alias) ratio
understood, (of which some by turns bring on and increase others) the reason
 erit in promptu, cur malum (est) adeo frequens, cur comes
will be at hand, why the disorder (is) so frequent, why the attendant
 et signum tot morborum, cur sæpe malum nervosi
and sign of so many diseases, why often (it is) a disorder of the nervous
 generis, cur nunc leve et fugax, nunc grave et
system, why one time (it is) slight and transient, at another severe and
 insanabile, aliquando hæreditarium, aliquando plenum periculi, et
incurable, sometimes hereditary, sometimes full of danger, and
 subito lethale, vero nonnunquam vacuum periculo; cur sæpe recurrat
suddenly fatal, but sometimes devoid of danger; why it often recurs
 per intervalla; cur inductum calore et validâ exercitatione
at intervals; why (it is) brought on by heat and strong exercise
 corporis, vero sublevatum modicâ exercitatione, ingravescens plenitudine,
of the body, but relieved by moderate exercise, increasing by plethora,
 sæpe fugatum, vel saltem factum mitius, sanguine detracto e
often removed, or at least rendered milder, by blood being drawn from
 venis.
the veins.

602. Impedita respiratio, qualiscunque demum fuerit causa
Impeded respiration, whatever at length may have been the cause
 ejus, plus ve minus impedit motum sanguinis: et simul
of it, more or less impedes the motion of the blood: and at the same time
 obest quodammodo expulsioni noxiæ materiæ e pulmone, et
obstructs in some manner the expulsion of noxious matter from the lung, and
 isti salutari et necessariæ mutationi sanguinis quæ fiunt per
that salutary and necessary change of the blood which are caused by
 naturalem spiritum: hinc generalis debilitas, variæ impeditæ functiones,
natural breathing: hence general debility, various impeded functions,
 et multi morbi, imprimis hydropici generis. Pulmo quoque
and many diseases, especially of the dropsical kind. The lung also

ægrius transmissus, vel a vitio, puta læsa fabrica, organorum quæ eum movent, vel a virium momentum debilitate, spiritum sæpe facit difficilem et laboriosum, qualis moribundis solet accidere.

601. Tot tamque diversis impeditæ respirationis bene perspectis causis (quarum aliæ alias invicem inducunt intenduntque) ratio in promptu erit, cur malum adeo frequens, cur tot morborum comes et signum, cur sæpe malum nervosi generis, cur nunc leve et fugax, nunc grave et insuabile, aliquando hæreditarium, aliquando periculi plenum, et subito lethale, nonnunquam vero periculo vacuum; cur per

intervalla sæpe recurrat; calore et valida corporis exercitatione cur inductum, modica vero exercitatione interdum sublevatum, plenitudine ingravescens, detracto e venis sanguine sæpe fugatum, vel saltem mitius factum.

602. Impedita respiratio, qualiscunque demum ejus causa fuerit, motum sanguinis plus minusve impedit: et simul expulsionem materiæ noxiæ e pulmone, et mutationem istam salutari et necessariam sanguinis (564, 565) quæ per spiritum naturalem fit, quodammodo obest: hinc generalis debilitas, variæ functiones impeditæ, et multi morbi, generis hydropici imprimis (468, 472). Pulmo quoque compressus ali-

aliquando compressus et nunquam dilatatus ut decet, ægrius
sometimes compressed and never dilated as it ought, more difficultly
 neque plene exhalat suum halitum; hinc sæpe obruitur
and not fully exhales its own vapour; hence often it is overwhelmed
 aquoso humore: quin et irritatur simul quo fit
with watery fluid: besides it is irritated at the same time, by which it happens
 ut plus ejus mucii, que ejus tenacioris, secernatur, qui demum
that more of its mucus, and that more tenacious, is secreted, which at last
 obstruit vias quas aër subit, stimulat que excitat
obstructs the passages which the air enters, stimulates and excites
 vehementem et molestam tussim, quâ pulmo tandem liberet
a violent and troublesome cough, but the lung at length frees
 se suo onere.
itself from its load.

603. Hæcce vitalis functio est obnoxia aliis vitis quoque, nimirum,
This vital function is liable to other disorders also, namely,
 tussi, et sternutationi; quæ, quamvis videantur, primo intuitu,
cough, and sneezing; which, though they may seem, at first sight,
 gravissima, tamen non carent suis usibus, et merito
very severe, nevertheless do not want their own uses, and deservedly
 recensentur sæpe inter saluberrimos conatus Naturæ; tamen sæpe
are reckoned often amongst the most salutary efforts of Nature; however often
 non vacant periculo et gravi incommodo, sive conatus
they are not free from danger and serious inconvenience, whether the efforts
 fuerint tantum nimis vehementes, sive demum inepti, neque instituti
shall be only too violent, or indeed unsuited, nor instituted
 sapiente consilio. Tamen utcunque hæc res habuerit se, est
with wise design. But howsoever this matter shall have itself, it is
 medici novisse naturam et causas et effectus earum
the duty of the physician to know the nature and causes and effects of these
 affectionum, quo melius sciat promovere salutare, temperare
affections, that he may the better know how to promote the salutary, to moderate
 nimias, compescere noxias et ineptas (sc. affectiones).
the excessive, to restrain the noxious and unsuitable ones.

604. Vehemens sonora, sæpe invita, expiratio, subito expellens
A violent sonorous, often involuntary, expiration, suddenly expelling
 magno impetu, aëra per glottidem, nunc magis, nunc
with great force, the air through the glottis, sometimes more, sometimes
 minus fortiter clausam, vocatur tussis. Convulsio musculorum
less strongly closed, is called coughing. A convulsion of the muscles
 expirationis dat insignem impetum aëri: contractio glottidis
of expiration gives a remarkable impetus to the air: the contraction of the glottis

quando, et nunquam ut decet dilatatus, suum halitum difficiliter, neque plene exhalat; hinc sæpe humore aquoso obruitur: quin et simul irritatur, quo fit ut plus ejus mucii, ejusque tenacioris, secernatur, qui demum vias quas aër subit obstruit, stimulat, tussimque vehementem et molestam excitat, qua tandem pulmo suo se onere liberet.

603. Aliis quoque vitis, tussi nimirum et sternutationi, obnoxia est vitalis hæc functio, quæ, quamvis primo intuitu gravissima videantur, suis tamen usibus non carent, et merito sæpe inter saluberrimos Naturæ conatus recensentur (65, 70, 364, 368); sæpe tamen peri-

culo non vacat, et gravi incommodo, sive tantum nimis vehementes, sive demum inepti fuerint conatus (70, 368), neque sapiente consilio instituti. Utcunque tamen hæc se res habuerit, medici est, naturam, et causas, et effectus earum affectionum novisse, quo melius sciat salutare promovere, nimias temperare, noxias et ineptas compescere.

604. Tussis vocatur vehemens sonora expiratio, sæpe invita, aëra per glottidem, nunc magis minus fortiter clausam, magno impetu subito expellens. Convulsio musculorum expirationis dat insignem aëri impetum: contractio glottidis dat sonum. Tussis sæpe repe-

dat sonum. Tussis est sæpe repetita et diuturna, recprocâ
produces the sound. Coughing is often repeated and lasting, a reciprocal
 sed difficilî, obstructâ, imperfectâ inspiratione, nimirum, propter
but difficult, obstructed, imperfect inspiration, indeed, on account of
 glottidem contractam, intercedente post singulas expirationes.
the glottis being contracted, intervening after each expiration.

605. Tussis excitatur quovis acri, sive chemico sive me-
Coughing is excited by any acrid thing, whether chemical or me-
 chanico, admoto viis quas aër subit a glottide ad
chanical, applied to the passages which the air enters from the glottis to
 imam partem pulmonis. Hæ (sc. viæ) obducuntur delicatissimâ
the lowest part of the lung. These are lined with a most delicate
 membranâ, que adeo impatiente omni stimuli, ut ne ferat
membrane, and so impatient of every stimulus, that it cannot bear
 tactum quidem blandissimi corporis, veluti guttulæ
(as not to bear) the touch even of the blandest body, as of a small drop
 aquæ, quin muscoli expirationis statim rapiantur in
of water, but that the muscles of expiration are immediately hurried into
 violentam convulsionem, que glottis simul, claudatur,
violent convulsion, and the glottis at the same time, is closed,
 propter consensum quo hæ partes, fungentes communi
on account of the sympathy by which these parts, performing a common
 munere, conjunguntur. Hinc aër expellitur tantâ vi, ut
office, are associated. Hence the air is expelled with so much violence, that
 aperiat rimam glottidis, quamvis fortiter clausam, et sæpe
it opens (as to open) the rima glottis, however strongly closed, and often
 dimoveat et ejiciat irritamentum, quicquid fuerit, quod
removes and ejects the irritating substance, whatever it may have been, which
 excitaverat tussim: actio non modo utilis, sed tutamen ne-
had excited the cough: an action not only useful, but a protection ne-
 cessarium vitæ, quippe quæ sola possit liberare pulmonem
cessary to life, as being that which alone can free the lung
 ab irritamento aut onere, quod brevi suffocaret hominem.
from an irritation or load, which quickly would suffocate a person.

606. Quicquid fuerit præter solitum in istis viis, nimius mucus,
Whatever shall be unusual in those passages, too much mucus,
 ipse spissus, tenuis, acer, sanguis, serum, pus, aqua, excitant
itself thick, thin, acrid, blood, serum, pus, water, excite
 tussim: fere inseparabilis comitatur omnem inflammationem
coughing: it almost inseparable (inseparably) attends every inflammation
 pulmonis, que omnem difficiliorem respirationem. Quin et, ne
of the lung, and every (kind of) more difficult respiration. Moreover, not

tita et diuturna est, intercedente nimirum reciproca, post singulas expirationes, inspira-
 tioe, sed difficilî, obstructa, imperfecta, propter contractam glottidem.

605. Excitatur tussis acri quovis vel chemico vel mechanico, viis quas aër subit a glottide ad imam partem pulmonis admoto. Hæ membrana obducuntur delicatissima, stimuli que omni adeo impatiente, ut ne quidem blandissimi corporis, veluti guttulæ aquæ, tactum ferat, quâ statim muscoli expirationis in violentam convulsionem rapiantur, glottisque simul claudatur, propter consensum (358) quo hæ partes,

communi munere fungentes, conjunguntur. Hinc aër tanta vi expellitur, ut rimam glottidis, quamvis fortiter clausam, aperiat, et irritamentum quicquid fuerit quod tussim excitaverat sæpe dimoveat et ejiciat: non utilis modo actio, sed necessarium vitæ tutamen, quippe quæ sola pulmonem liberare possit ab irritamento, aut onere, quod hominem brevi suffocaret.

606. Quicquid præter solitum in istis viis fuerit, mucus ipse nimius, spissus, tenuis, acer, sanguis, serum, pus, aqua, tussim excitant: omnem pulmonis inflammationem, omnemque respirationem difficiliorem, comitatur fere in-

quidem purissimus aër potest trahi sine dolore, irritatione, que
even the purest air can be drawn in without pain, irritation, and
 vehemente tussi, asperâ arteriâ que bronchiis nimis
violent cough, from the aspera arteria and the bronchia being too
 sentientibus vel inflammatis, vel orbatis suo muco, qui
sentient or inflamed, or deprived of their natural mucus, which
 solet defendere ab aëre ipso. Denique, exempla non
is accustomed to defend them from the air itself. In fine, examples are not
 desunt ubi frequens et molestissima tussis
wanting where (in which) a frequent and very troublesome cough
 excitata fuerit a vitiis et irritationibus aliarum partium vel
has been excited by disorders and irritations of other parts or
 universi nervosi generis; irritationes auris, vel ventriculi,
of the whole nervous system; irritations of the ear, or of the stomach,
 vel intestinorum a vermibus, vel jecoris ab inflammatione
or intestines from worms, or of the liver from inflammation
 fecerunt hoc.
have caused this.

607. Tussis potest quoque excitari voluntate, et tum regitur
Coughing may also be excited by the will, and then it is governed
 ad nostrum arbitrium; sæpe etiam cum est prorsus invita
at our own pleasure; often even when it is altogether involuntary,
 possumus temperare eandem, vel suppressere contrario conatu:
we can moderate the same, or suppress it by a contrary effort:
 tamen resistendum vehementi propensioni ad tussim (impersonal
however it is to be resisted to a violent propensity to cough (a violent pro-
 verb governing a dative) nullo modo.
ensity to cough is to be resisted) in no way.

608. Semel excitata solet pergere donec vel irritamentum
Once excited it is accustomed to continue until either the irritating matter
 fuerit expulsum, vel sensus irritationis fuerit deletus, sopitus,
have been expelled, or the feeling of irritation have been destroyed, lulled,
 fortasse superatus graviore sensu, quem tussis ipsa dedit:
perhaps overcome by a severer feeling, which the cough itself produced:
 tum irritatione redeunte post intervallum, tussis redit denuo.
then the irritation returning after an interval, the cough returns anew.
 Hinc docemur rationem sæpe sublevandi et sopiendi impor-
Hence we are taught a method often of relieving and lulling this very
 tunissimum malum, quamvis non detur penitus tollere
troublesome disorder, although it may not be given entirely to remove
 causam ejûs.
the cause of it.

separabilis. Quin et sæpe aspera arteria, bronchiis que nimis sentientibus, vel inflammatis, vel suo muco, qui ab aëre ipso defendere solet, orbatis, ne purissimus quidem aër sine dolore, irritatione, tussique vehemente, trahi potest. Denique, exempla non desunt ubi a vitiis et irritationibus aliarum partium, vel universi generis nervosi, tussis frequens et molestissima excitata fuerit; auris aliquando, vel ventriculi vel intestinorum a vermibus, vel jecoris ab inflammatione, irritationes hoc fecerunt.

607. Tussis quoque voluntate excitari potest, et tum ad arbitrium nostrum regitur; sæpe

etiam cum invita prorsus est, eandem temperare, vel contrario conatu suppressere possumus; vehementi tamen ad tussim propensioni nullo modo resistendum est.

608. Excitata semel, pergere solet, donec vel expulsum fuerit irritamentum, vel sensus irritationis deletus, sopitus, fortasse superatus fuerit, graviore sensu, quem ipsa tussis dedit: tum redeunte post intervallum irritatione, tussis denuo redit. Hinc rationem docemur importunissimum malum sublevandi sæpe et sopiendi, quamvis non detur causam ejus penitus tollere.

609. Vehementissima sæpe est (pro affert) periculo; (sc. homini)
(When) very violent it often brings danger;
 nimirum, spiritu intercluso, et valido nisu,
for indeed, by the breathing being obstructed, and by the powerful effort,
 plurimus sanguis congeretur in pulmone, vasa cuius dis-
a great deal of blood is congested in the lung, the vessels of which are dis-
 tenduntur, nonnunquam rumpuntur; unde aliquando ingens, vel
tended, sometimes are broken; whence sometimes a great, or
 forsân lethale profluvium sanguinis; vero sæpius origo lentioris
perhaps fatal flow of blood; but more often the origin of a slower
 sed vix minus exitialis morbi: quin et, crebra et molesta
but hardly less pernicious disease: moreover, a frequent and troublesome
 tussis, sine gravi aut sane ullo profluvio sanguinis, potest
cough, without severe or indeed any profluvium of blood, may
 inferre tantam labem pulmone, imprimis si hic fuerit debilioris
bring so great a mischief on the lung, especially if it should be of a weaker
 fabricæ, ut jecerit fundamenta vix non immedicabilis
structure, as (that it) will lay the foundations of a scarcely not incurable
 phthiseos.
(scarcely curable) phthisis.

610. Denique transitu sanguinis per pulmonem impedito
Indeed the passage of the blood through the lung being impeded
 a longâ et vehemente tussi, sanguis refluit per venas,
by long and violent coughing, the blood flows back through the veins,
 imprimis ad caput: hinc rubor, et sæpe livor vultûs,
especially to the head: hence redness, and often lividity of the countenance,
 que interdum oculorum ipsorum, et nonnunquam profluvia sanguinis,
and sometimes of the eyes themselves, and occasionally profluvia of blood,
 vel e naribus, vel ex internis vasis in cerebro ipso,
either from the nostrils, or from the internal vessels in the brain itself,
 et aliquando lethalia paralysis, aut apoplexia, aut convulsio.
and sometimes fatal paralysis, or apoplexy, or convulsion.

611. Postremo, hernia, prolapsus, abortus, et similia mala,
Lastly, hernia, prolapsus, abortion, and similar disorders,
 possunt accidere, si quædam pars fuerit præter solitum debilis,
may happen, if any part should be unusually weak,
 visceribus, quotquot continentur in abdomine, compressis
by the viscera, as many as are contained in the abdomen, being compressed
 insigni vi.
with great force.

612. Quod si tussis fuerit lenior, sed importuna et frequens,
But if the cough should be slighter, but troublesome and frequent,

609. Vehementissima periculo sæpe est: intercluso nimirum spiritu, et valido nisu, plurimus sanguis in pulmone congeretur, cuius vasa distenduntur, nonnunquam rumpuntur; unde sanguinis profluvium aliquando ingens, vel forsân lethale; sæpius vero origo lentioris, sed vix minus exitialis morbi: quin et tussis crebra, et molesta, sine gravi aut sane ullo sanguinis profluvio, tautam pulmone inferre potest labem, imprimis si hic debilioris fuerit fabricæ, ut phthiseos vix non immedicabilis fundamenta jecerit.

610. Denique, a longâ et vehemente tussi,

impedito per pulmonem sanguinis transitu, sanguis per venas refluit, imprimis ad caput: hinc vultus, ipsorumque interdum oculorum, rubor, et sæpe livor, et nonnunquam sanguinis profluvia, vel e naribus, vel ex vasis internis in ipso cerebro, et paralysis, aut apoplexia, aut convulsio, aliquando lethalia.

611. Postremo, compressis insigni vi quotquot in abdomine continentur visceribus, si pars quædam præter solitum debilis fuerit, hernia, prolapsus, abortus, et similia mala accidere possunt.

612. Quod si lenior fuerit tussis, sed impor-

quamvis nil istiusmodi sit metuendum, tamen non carebit
although nothing of that sort may be to be feared, however it will not be free from
 periculo: nimirum, agitatur, fatigatur ægrum, frangitur vires
danger: for instance, it agitates, fatigues the patient, breaks down the strength
 corporis, admittit somnum, quatitur et irritatur pulmonem ipsum,
of the body, takes away sleep, shakes and irritates the lung itself,
 impedit concoctionem cibi, que fere cæteras functiones,
impedes the concoction of the food, and nearly the rest of the functions,
 tandem evasura intolerabilis ægro.
at length will become intolerable to the patient.

613. Sternutatio est multum affinis huic, nimirum, ingens, plena
Sneezing is much akin to this, that is, a large, full
 inspiratio, cui sonora et violentissima expiratio succedit, directa
inspiration, to which a loud and very violent expiration succeeds, directed
 ita ut aër expellatur per os et nares immani vi,
so that the air is expelled through the mouth and nose with great force,
 quas partes verrat transeundo. Convulsio ipsa est multo
which parts it sweeps in passing through. The convulsion itself is much
 vehementior tussi, vix excitanda aut imitabilis ad arbitrium,
more violent than cough, scarcely to be excited or imitated at pleasure,
 si fortis propensio adest difficillime compescenda, que quatiens
if a strong propensity is present very difficultly to be restrained, and shaking
 et excitans univcrsum corpus magis quam tussis.
and exciting the whole body more than coughing.

614. Ut tussis oritur ab irritatione glottidis et asperæ arteriæ,
As coughing arises from irritation of the glottis and aspera arteria,
 et bronchiorum et pulmonis, sic sternutatio plerumque (oritur) ab
and bronchia and lung, so sneezing generally arises from
 irritatione membranæ narium, rarius a consensu cum
irritation of the membrane of the nostrils, more rarely from consent with
 remotis partibus; fere pari ratione ac tussis, summovet vel
remote parts; nearly in a like manner as cough, it removes or
 abstergit causam irritationis, et igitur sæpe prodest corpori,
wipes away the cause of irritation, and therefore often benefits the body,
 vero aliquando nocet, scilicet si fuerit nimis vehemens, aut nimis
but sometimes hurts it, that is if it should be too violent, or too
 sæpe repetita, aut nimis diu continuata.
often repeated, or too long continued.

tuna et frequens, quamvis nil istiusmodi metuendum sit, periculo tamen non carebit: ægrum nimirum agitatur, fatigatur, vires corporis frangitur, somnum admittit, febrem intendit, ipsum pulmonem quatitur et irritatur, cibi concoctionem cæterasque fere functiones impedit, ægro tandem intolerabilis evasura.

613. Huic multum affinis est sternutatio, ingens nimirum plena inspiratio, cui sonora et violentissima succedit expiratio, ita directa, ut aër, immani vi, per os et nares, quas partes transeundo verrat, expellatur. Convulsio ipsa tussi multo vehementior est, vix ad arbitrium

excitanda aut imitabilis, si propensio fortis adest, difficillime compescenda, corpusque univcrsum, magis quam tussis, quatiens et excitans.

614. Ut tussis ab irritatione glottidis, et asperæ arteriæ, et bronchiorum, et pulmonis, sic sternutatio ab irritatione membranæ narium plerumque oritur, rarius a consensu cum remotis partibus; pari fere ac tussis ratione, causam irritationis summovet, vel abstergit, et corpori igitur sæpe prodest, aliquando vero nocet, scilicet si nimis vehemens fuerit, aut nimis sæpe repetita, aut nimis diu continuata.

CAP. XVIII.

CHAP. XVIII.

De concoctione alimentorum.
Of the concoction of aliments.

615. Corpus brevi exhauritur, variis actionibus, tum
The body is shortly exhausted, by the various actions, as well
animalibus tum vitalibus, nimirum fluidis partibus dissipatis,
animal as vital, truly the fluid parts being dissipated,
solidis attritis, et utrisque, forsitan, sponte vergentibus ad
the solid worn down, and both, perhaps, spontaneously verging to
putredinem.
putridity.

616. Vero monemur et incitatur importunissimo appetitu,
But we are admonished and incited by a most importunate appetite,
et dirigimur instinctu quem gustus juvat, et olfactus et
and we are directed by an instinct which taste assists, also smell and
experientia, ad ingerendas res quales fuerint idoneæ ad reparandam
experience, to ingest things such as shall be fit to repair
jacturam corporis, que arcendam et corrigendam corruptionem ejûs.
the loss of the body, and to prevent and correct the corruption of it.

617. Ventriculo jam vacuo, et corpore quoque nonnihil
The stomach being now empty, and the body also being somewhat
exhausto inediâ, que solitis laboribus vitæ, ingratus sensus,
exhausted by fasting, and the usual labours of life, an unpleasant sensation,
quem referimus ad ventriculum, cum cupiditate edendi, oritur, primo
which we refer to the stomach, with a desire of eating, arises, at first
levis, ingravescens paulatim, tandem evasurus immanis, et quali
slight, increasing gradually, at length to become intolerable, and such as
resistendum sit (nobis) nullo modo, nisi fuerit pacatus idoneo
we can resist in no way, unless it shall be appeased by suitable
cibo. Hic appetitus vocatur Fames.
food. This appetite is called Hunger.

618. Autem fluidis partibus multum dissipatis, vel quovis acri, vel
But the fluid parts being greatly dissipated, or any acrid, or
tantum sicciore cibo, ingesto in corpus, fauces arescunt, cum
only dryer food, being ingested into the body, the fauces grow dry, with

CAP. XVIII.—De concoctione alimentorum.

615. CORPUS variis actionibus, tum animalibus, tum vitalibus, brevi exhauritur, fluidis nimirum partibus dissipatis, solidis attritis et utrisque forsitan ad putredinem sponte vergentibus (6, 539).

616. Monemur vero et incitatur importunissimo appetitu, et dirigimur instinctu, quem juvat gustus, et olfactus, et experientia, ad res ingerendas, quales idoneæ fuerint ad corporis jacturam reparandam, ejusque corruptionem arcendam et corrigendam.

617. Vacuo jam ventriculo, et corpore quoque nonnihil exhausto, inediâ, solitisque vitæ laboribus, sensus ingratus, quem ad ventriculum referimus, cum edendi cupiditate, oritur, primo levis, paulatim ingravescens, nisi idoneo cibo pacatus fuerit, tandem immanis evasurus, et quali nullo modo resistendum sit.—Hic appetitus Fames vocatur.

618. Fluidis autem partibus multum dissipatis, vel acri quovis, vel cibo tantum sicciore, in corpus ingesto, fauces arescunt, cum sensu peculiari ingrato, et ingens simul bibendi

peculiari ingrato sensu, et ingens cupiditas bibendi simul
a peculiar unpleasant sensation, and a great desire of drinking at the same
 oritur. Hic appetitus vocatur Sitis.
time arises. This appetite is called Thirst.

619. Neque profecto homo semper esurit a vacuo ventriculo:
Nor truly does a person always hunger from an empty stomach:
 aliqua exinanitio universi corporis, imprimis libera excretio
any evacuation of the whole body, especially the free (excessive) excretion
 per cutem conducit haud parum ad hunc effectum. Quin et,
by the skin conduces not a little to this effect. Moreover,
 quædam contractio musculosarum fibrarum ventriculi ipsius, videtur
a certain contraction of the muscular fibres of the stomach itself, seems
 subessè que efficere famem: nam multa stimulantia, recepta
to enter into and cause hunger: for many stimulating things, received
 in eum, que demum modica distentio, ipsius conciliabunt aliquem
into it, and indeed moderate distention, of itself will excite some
 appetitum homini alioquin non esurituro: quod helluones
appetite to a man that otherwise would not hunger: which gluttons
 sæpe experiuntur, non sine suo magno malo.
often experience, not without their own great injury.

620. Porro, si cibus assumptus fuerit prorsus fluidus et tenuis,
Moreover, if the food taken should be wholly fluid and thin,
 haud bene alit aut reficit corpus; igitur, Natura
it does not sufficiently support or refresh the body; therefore, Nature
 docuit hominem querere et appetere aliquem crassiorem vel
has taught man to seek out and to desire some more solid or
 sicciorem cibum, quem sumat simul, quamvis sæpe insul-
drier food, which he may take at the same time, although often unsa-
 sum, et parum^a nutrientem.
voury, and little nutritive.

621. Omnis cibus derivatur vel ex animalibus vel ex frugibus.
All food is derived either from animals or from vegetables.
 Homo naturâ appetit utrumque genus: et vel altero vel
Man by nature (naturally) desires both kind: and either by one or
 utroque simul, quod est usitatus et melius, satis alitur,
both together, which is more usual and better, is sufficiently nourished,
 et habet se bene. Quamvis nonnulli, credentes se sapientiores
and has himself well. Although some, believing themselves wiser
 Naturâ, vetent animalia imponi mensis, et jubeant (nos)
than Nature, forbid animals to be placed on the tables, and order us
 vivere frugibus solis.
live on vegetables alone.

cupiditas oritur.—Hic appetitus Sitis vocatur.

619. Neque profecto homo semper esurit a vacuo ventriculo: exinanitio aliqua universi corporis, libera imprimis per cutem excretio, ad hunc effectum haud parum conducit (357). Quia et contractio quædam fibrarum musculosarum ipsius ventriculi subesse videtur, famemque (617) efficere: nam multa stimulantia in eum recepta, ipsiusque demum modica distentio, appetitum aliquem homini, alioquin non esurituro, conciliabunt: quod helluones sæpe, non sine magno suo malo, experiuntur.

620. Porro, si cibus prorsus fluidus et tenuis

assumptus fuerit, corpus haud bene alit aut reficit; docuit igitur Natura hominem, crassiorem vel sicciorem aliquem cibum querere et appetere, quem sumat simul, quamvis sæpe insulsum, et parum nutrientem.

621. Omnis cibus vel ex animalibus vel ex frugibus derivatur. Utrumque genus homo natura appetit: et vel altero, vel utroque simul, quod usitatus est et melius, satis alitur, et bene se habet. Quamvis nonnulli, se credentes Natura sapientiores, vetent animalia mensis imponi, et jubeant solis frugibus vivere.

622. Fossilia quædam, et multe fruges, quæ

622. Quædam fossilia et multæ fruges quæ nutriant parum
Certain fossil (things) and many vegetables which nourish little
 vel nihil, sumuntur pro condimentis. Omne animal, et præsertim
or not at all, are taken as condiments. Every animal, and especially
 homo, appetit condimenta hujusmodi, nimirum aliquid
man, desires condiments of this sort, doubtless as something (as containing
 grati gustui, vel saltem acris, quamvis sæpe
something) (of) agreeable to the taste, or at least (of) sharp, although often
 rancidi et fœtidi, et admodum ingrati, donec consuetudo
(of) rancid and fetid, and very unpleasant, until habit
 docuit amare. Neque condimenta istiusmodi carent
has taught (him) to like (them). Nor do condiments of this description want
 suis usibus. Stimulant linguam, que faciunt gustare melius, quo
their uses. They stimulate the tongue, and cause it to taste better, that
 cibus, ipse forsân habens parum saporis, evadat gratior:
the food, itself perhaps having little (of) taste, may become more agreeable:
 quin et sunt (pro afferunt) quoque stimulo ventriculo, et
moreover they bring (prove) also a stimulus to the stomach, and
 sic opitulantur concoctioni, præsertim si ille fuerit debilior: neque
thus assist concoction, especially if it should be weaker: nor
 concoquitur bene (impersonaliter dicitur) si solita condimenta
is it digested well (nor is digestion so good) if the customary condiments
 fuerint negata.
have been denied.

623. Parum concoctionis vel mutationis, præter solutionem solidarum
Little (of) concoction or change, except the solution of the solid
 partium, requiritur, ut animalis cibus sit (pro afferet) nutrimento
parts, is required, that animal food may bring nourishment
 humano corpori: quippe qui differat parum omnino a
to the human body: as being that which differs in no way at all from
 naturâ humani corporis. Vero olea, tam animalium quam
the nature of the human body. But oils, as well of animals as
 frugum, quæ alunt multum, distant longius a naturâ
of vegetables, which nourish much, differ farther from the nature
 humorum aut carniû humani corporis. Glutinosa fruges, vel
of the juices or flesh of the human body. Glutinous vegetables, or
 quæ præbent farinam aut saccharum, et demum radices et olera,
which afford flour or sugar, and indeed roots and coleworts,
 quibus tamen omne animal nutritur, vel ipsum depas-
by which notwithstanding every animal is nourished, either itself feeding
 cens herbas, vel vivens aliis, quæ depaverant eas, videntur
upon the herbs, or living upon others, which had fed upon them, seem
 esse adhuc remotiora (pon. neutro gen).
to be still more remote.

parum vel nihil nutriant, pro condimentis sumuntur. Hujusmodi condimenta, aliquid nimirum gustui grati, vel saltem acris, quamvis sæpe rancidi et fœtidi, et admodum ingrati, donec consuetudo amare docuit, omne animal, et homo præsertim, appetit. Neque suis usibus caret istiusmodi condimenta. Linguam stimulant, meliusque gustare faciunt, quo gratior cibus evadat, ipse forsân parum saporis habens: quin et ventriculo quoque stimulo sunt, et sic concoctioni, præsertim si ille debilior fuerit, opitulantur: neque bene concoquitur, si condimenta solita negata fuerint.

623. Parum concoctionis vel mutationis, præter solutionem partium solidarum, requiritur, ut cibus animalis nutrimento corpori humano sit: quippe qui parum omnino differat a natura corporis humani. Olea vero, tam animalium quam frugum, quæ multum alunt, longius distant a natura humorum aut carniû humani corporis. Remotiora adhuc videntur esse fruges glutinosæ, vel quæ farinam aut saccharum præbent, et demum radices, et olera, quibus tamen omne animal nutritur, vel ipsum herbas depascens, vel aliis vivens, quæ eas depaverant.

624. Prehendimus cibum labiis, volvimus in ore his
We take the food with the lips, we roll it in the mouth by these
 et buccis et linguâ, dividimus, contundimus, conficimus
and the cheeks and tongue, we divide, we bruise, we chew it
 dentibus: vero plurimâ salivâ affluente, et muco, et
by the teeth: but a great deal of saliva flowing forth, also mucus, and
 aliis humoribus oris, cum ob stimulum et
the other fluids of the mouth, as well on account of the stimulus and
 saporem cibi, tum quoque ob motum partium dum
taste of the food, as also on account of the motion of the parts whilst
 manditur, cibus subigitur in mollem, fere fluidam massam,
it is masticated, the food is reduced into a soft, almost fluid mass,
 quam tradimus pharyngi, neque habemus amplius potestatem in
which we deliver to the pharynx, nor have we longer power over
 eam; neque profecto est opus: enim impellitur in gulam
it; nor indeed is there need: for it is driven into the gullet (œsophagus)
 contractione hujûs (pharyngis), quam dilatat, et ciet ad contrac-
by the contraction of this, which it dilates, and excites to contrac-
 tionem, quâ contractione demum, incipiente a pharynge et
tion, by which contraction indeed, beginning from the pharynx and
 propagatâ ad ventriculum, cibus pervenit ad ventriculum, ibi
propagated to the stomach, the food arrives at the stomach, there
 detinendus tempus quo sit opus. Neque sane cibus
to be detained the time of which there may be need. Nor truly does the food
 descendit tantum suo pondere quantum motu et contractione
descend so much by its own weight as by the motion and the contraction
 gulæ ipsius: enim multa animalia devorant sursum, quod
of the œsophagus itself: for many animals swallow upwards, which
 et homo ipse potest facere.
even man himself can do.

625. Autem cibus non statim transit per ventriculum:
But the food does not immediately pass through the stomach:
 detinetur ibi aliquamdiu, scilicet pyloro contracto, et
it is detained there some time, that is by the pylorus being contracted, and
 simul nonnihil elevato, cum a fibris quæ circumdant
at the same time somewhat elevated, as well by the fibres which surround
 ipsum, tum quoque a longioribus quæ occupant superiorem partem
itself, as also by the longer ones which occupy the superior part
 ventriculi inter cardiam et pylorum; vero tandem, pyloro
of the stomach between the cardia and the pylorus; but at length, the pylorus
 relaxato iterum et descendente, cibus traditur duodeno,
being relaxed again and descending, the food is delivered to the duodenum,

624. Cibum labiisprehendimus, his, et buccis, et lingua, in ore volvimus, dentibus dividimus, contundimus, conficimus: affluente vero plurima saliva, et muco, et aliis oris humoribus, cum ob stimulum et saporem cibi, tum quoque ob motum partium dum manditur, cibus in massam mollem, fere fluidam, subigitur, quam pharyngi tradimus, neque amplius in eam potestatem habemus; neque profecto opus est: hujus enim contractione in gulam impellitur, quam dilatat, et ad contractionem ciet, qua demum contractione a pharynge incipiente, et ad ventriculum propagata, cibus ad ventricu-

lum pervenit, ibi quo opus sit tempus detinendus. Neque sane tantum suo pondere, quantum motu et contractione ipsius gulæ, descendit cibus: multa enim animalia sursum devorant, quod et homo ipse facere potest.

625. Cibus autem non statim per ventriculum transit; detinetur ibi aliquamdiu, contracto scilicet, et nonnihil simul elevato pyloro, cum a fibris quæ ipsum circumdant, tum quoque a longioribus, quæ partem ventriculi superiorem inter cardiam et pylorum occupant; tandem vero, relaxato iterum et descendente pyloro, duodeno traditur cibus, jam multum solutus,

jam multum solutus et subactus, agitatus, propulsus, actione
 now much dissolved and reduced, agitated, propelled, by the action
 ventriculi.

of the stomach.

626. Similis alimentaria massa, confecta ex carnibus et frugibus
A similar alimentary mass, made up of flesh and vegetables
 mixtis, probe subacta, et mollita et diluta cum aquâ aut salivâ,
mixed, well reduced, and softened and diluted with water or saliva,
 in mollem pulpam, et demum fota calore qualis est in corpore,
into a soft pulp, and at last heated by a heat such as is in the body,
 continuo incipit fermentescere extra corpus; scilicet, multum
immediately begins to ferment without the body; that is, it is much
 agitatur, et exhalat plurimum aëra, et primo acescit, et
agitated, and exhales a great deal (of) air, and at first grows acid, and
 deinde putrescit.
then putrefies.

627. Ructus docet idem sæpe accidere, etiam in vivo
Belching proves that the same often happens, even in the living
 homine, dolor ventriculi, et vomitus acidæ, vel putridæ
man, the pain of the stomach, and the vomiting of an acid, or a putrid
 materiæ familiaria concoquentibus male, docent.
matter common to those digesting badly, teach it.

628. Porro, haud pauca experimenta instituta de industriâ ostenderunt
Moreover, no few experiments instituted on purpose have shewn
 alimenta semper fermentescere aliquantum in ventriculo hominis,
that aliments always ferment somewhat in the stomach of a man,
 quamvis sanissimi, que totam alimentariam massam
although most healthy, and that the whole alimentary mass
 acescere paucis horis post prandium.
becomes acescent a few hours after a meal.

629. Tamen, fatendum est (nobis) vel nulla, vel saltem levissima,
However, we must confess either that no, or at least very slight,
 indicia mutationis istiusmodi unquam manifeste prodere se in
signs of a change of this sort ever manifestly shew themselves in
 sano homine: et est bene notum, quo vehementius fuerit
a healthy man: and it is well known, the more violently it has been
 fermentatum (imponaliter utitur) in ventriculo, fere eo pejus
fermented (the more active the fermentation) in the stomach, commonly the worse
 et tardius hominem concoquere.
and the more slowly the person digests.

630. Igitur aliquid videtur esse in ventriculo, quod impediât
Therefore something seems to be in the stomach, which impedes

et actione ventriculi subactus, agitatus, propulsus.

626. Similis massa alimentaria, ex carnibus et frugibus mixtis confecta, cum aqua aut saliva in pulpam mollem probe subacta, et mollita, et diluta, et demum calore, qualis in corpore est, fota, extra corpus continuo fermentescere incipit; agitatur scilicet multum, et plurimum aëra exhalat, et acescit primo, et deinde putrescit.

627. Sæpe etiam in vivo homine idem accidere docet ructus, docent dolor ventriculi, et vomitus materiæ acidæ vel putridæ, male concoquentibus familiaria.

628. Porro, experimenta haud pauca, de industria instituta, ostenderunt alimenta in ventriculo hominis, quamvis sanissimi, semper aliquantum fermentescere, ipsamque massam alimentariam, paucis post prandium horis, totam acescere.

629. Fatendum tamen est, vel nulla vel levissima saltem istiusmodi mutationis indicia, in sano homine, se unquam manifeste prodere; et bene notum est, quo vehementius fermentatum fuerit in ventriculo, eo fere hominem pejus et tardius concoquere.

630. Videtur igitur aliquid in ventriculo esse, quod istud incommodum impediât, neque sinat

istud incommodum, neque sinat alimenta fermentescere adeo
that disadvantage, nor permits the aliments to ferment so
 vehementer. Proprius succus ventriculi ipsius, copiosus secretus,
vehemently. The proper juice of the stomach itself, copious(ly) secreted,
 videtur præstare hoc. Vero si cibi fuerint detenti diutius
seems to affect this. But if the food should be detained longer
 justo in ventriculo, (quod sane vix acciderit si concoctio
than proper in the stomach, (which indeed scarce will happen if the concoction
 fuerit alioquin bona,) hic succus non sufficit ad compescendam
(should) be otherwise good,) this juice does not suffice to restrain
 istam proclivitatem alimentorum ad fermentandum quæ tum prodit
that tendency of the aliments to ferment which then shews
 sese manifestis signis.
itself by manifest signs.

631. Quin et idem succus solvit cibos, neque ventriculus
Moreover the same juice dissolves the food, nor (will) the stomach
 facile tradiderit cibos quos continet intestinis, priusquam
easily deliver the foods which it contains to the intestines, before that
 fuerint probe soluti. Neque est solvens vis eadem in
they have been well dissolved. Nor is the solvent power the same in
 omnibus animalibus: enim sunt quæ facile solvunt carnes,
all animals: for there are those which easily dissolve flesh,
 sunt quæ (facile solvunt) fruges, neque omnino
there are those which (easily dissolve) grain (vegetables), nor do they at all
 tangunt alterum genus. Vero homo, et omnivora animalia, nempe,
touch the other kind. But man, and omnivorous animals, namely,
 quæ promiscue vescuntur aliis animantibus, et herbis, solvunt
which promiscuously feed upon other animals, and vegetables, dissolve
 pariter utrumque genus. Quædam experimenta instituta extra corpus,
alike either kind. Some experiments instituted without the body,
 docent, et adhuc melius et certius quæ facta sunt
shew, and still better and more certainly (some) which have been made
 nuper in vivis animalibus, et quidem in homine ipso, a variis
lately upon living animals, and even upon man himself, by different
 auctoribus, præsertim a clarissimò Spallanzani et Stevens. Autem
authors, especially by the very celebrated Spallanzani and Stevens. But
 plurimæ fruges, tam duræ quam molles, neque solvuntur,
a great many vegetables, as well hard as soft, neither are dissolved,
 nec concoquantur ullo modo ab sanissimo homine, nisi
nor are concocted in any way by the most healthy person, unless

alimenta adeo vehementer fermentescere. Succus ipsius ventriculi proprius, copiosus secretus, hoc præstare videtur. Si vero diutius justo cibi in ventriculo detenti fuerint (quod sane vix acciderit si concoctio alioquin bona fuerit) hic succus non sufficit ad compescendam istam alimentorum ad fermentandum proclivitatem, quæ tum sese manifestis signis prodit.

631. Quin et idem succus cibos solvit, neque facile ventriculus quos continet cibos prius intestinis tradiderit, quam probe soluti fuerint. Neque vis solvens in omnibus animalibus eadem est: sunt enim quæ carnes, sunt quæ fruges,

facile solvunt, neque alterum genus omnino tangunt. Homo vero, et animalia omnivora, nempe quæ aliis animantibus et herbis promiscue vescuntur, utrumque genus pariter solvunt. Docent experimenta quædam extra corpus instituta, et melius adhuc et certius, quæ nuper in vivis animalibus, et quidem in ipso homine, facta sunt a variis auctoribus, præsertim a clar. Spallanzani et Stevens. Plurimæ autem fruges, tam duræ quam molles, neque solvuntur, nec ullo modo concoquantur ab homine sanissimo, nisi prius dentibus confectæ, vel alio modo fractæ aut contusæ fuerint.

fuertnt prius confectæ dentibus, vel fractæ aut contusæ
they have been first chewed by the teeth, or broken or bruised
 alio modo.
in some way.

632. Neque cibi jam quodammodo soluti, ostendunt ulla
Nor do the foods already in some degree dissolved, shew any
 indicia (saltem in sano corpore) acoris, postquam demissi
signs (at least in the healthy body) of tartness, after that they have
 sunt in intestina, et si permansissent
been sent down into the intestines, although if they should (have had) remain(ed)
 in ventriculo brevi acquisituri (essent) insignem acorem. Succus
in the stomach they would shortly acquire very great sourness. The juice
 intestinorum, haud dissimilis succo ventriculi, fortasse obstat,
of the intestines, not unlike the juice of the stomach, perhaps prevents (it),
 et copiosus latex pancreatis, simillimus salivæ, sed præ
and the abundant juice of the pancreas, very like to the saliva, but before
 omnibus fel ipsum delatum a jecinore, quod non sinit
all things the bile itself conveyed from the liver, which does not permit
 massam alimentorum amplius fermentescere, neque accedere proprius
the mass of aliments farther to ferment, nor to approach nearer
 ad acidam naturam, et sane mirabiliter corrigit acorem jam
to an acid nature, and indeed wonderfully corrects the acidity already
 existentem. Quin et fel videtur promovere solutionem alimentorum
existing. Moreover the bile seems to promote the solution of the aliments
 miscendo probe oleosa (alimenta) cum aquosis; et quoque
by mixing thoroughly the oily with the watery; and also
 (videtur) incitare intestina ad justam contractionem.
(it seems) to excite the intestines to due contraction.

633. Igitur cibi rediguntur in fluidam formam actione
Therefore the food(s) (are) is reduced into the fluid form by the action
 manducandi, et solvente vi humorum oris, et
of chewing, and by the solvent power of the fluids of the mouth, and
 ventriculi, et intestinorum, et demum fellis, proclivitate ipsorum
stomach, and intestines, and finally of the bile, the tendency of themselves
 ad fermentescendum forsitan juvante, quæ laxet vincula
to be fermented perhaps assisting, which may loosen the bonds
 adhæisionis. Vero nutriens humor, dum tota massa
of adhesion. But the nourishing (nutritious) juice, whilst the entire mass
 descendit per intestina, sorbetur lacteis vasis pendulis
is descending through the intestines, is absorbed by the lacteal vessels pendulous
 vel hiantibus in intestina, defertur ad thoracicum ductum his
or opening into the intestines, is conveyed to the thoracic duct by these

632. Neque cibi jam quodammodo soluti, et insignem acorem, si permausissent in ventriculo brevi acquisituri, postquam in intestina demissi sunt, ulla (saltem in sano corpore) acoris indicia ostendunt. Obstat fortasse succus intestinorum, ventriculi succo haud dissimilis, et copiosus pancreatis latex, salivæ simillimus, sed, præ omnibus, fel ipsum a jecinore delatum, quod non sinit massam alimentorum amplius fermentescere, neque proprius ad acidam naturam accedere, et sane acorem jam existentem mirabiliter corrigit. Quin et solu-

tionem alimentorum promovere videtur fel, oleosa cum aquosis probe miscendo; et intestina quoque incitare ad justam contractionem.

633. Actione igitur manducandi, et vi solvente humorum oris, et ventriculi, et intestinorum, et demum fellis, cibi in fluidam formam rediguntur, juvante forsitan ipsorum ad fermentescendum proclivitate, quæ vincula adhæisionis laxet. Humor vero nutriens, dum tota massa per intestina descendit, vasis lacteis pendulis vel hiantibus in intestina sorbetur, his per mesenterium repentibus ad ductum

repentibus per mesenterium, et recipitur in sanguinem, penitus
creeping through the mesentery, and is received into the blood, entirely
 mutatus in animale naturam postquam absolverit iter
changed into an animal nature after it has performed the passage
 per pulmones. Vero plurimo humore affluente ex intestinis,
through the lungs. But a great deal of fluid flowing forth from the intestines,
 jecore, pancreate, massa quæ superest vix spissescit donec
liver, pancreas, the mass which remains scarcely thickens until
 pervenitur (intellige, ab eâ) ad crassa intestina: vero tum parcius
it arrives (it is arrived by it) to the large intestines: but then more sparingly
 diluta, et multo humore decedente, tandem induit formam
diluted, and much fluid going off, at length puts on the character
 stercoris, sæpe firmi et retinentis vestigia cellularum coli.
of fæces, often firm and retaining traces (the forms) of the cells of the colon.

634. Vero multum abest ut habeamus plenam
But it is far from that we have (we are far from having) a perfect
 notitiam mutationum quas cibi subeunt in ventriculo aut
knowledge of the changes which the aliments undergo in the stomach or
 intestinis. Enim natura et vires fermentationis, fortasse etiam
intestines. For the nature and powers of fermentation, perhaps even
 varia genera ejus, adhuc parum intelliguntur, neque potest
the various kinds of it, as yet are little understood, nor can
 ratio concoctionis ciborum reddi ex eâ. Neque
an explanation of the concoction of the food be rendered from it. Nor
 mera solutio solvet nodum: enim cibi non modo
will mere solution loose the knot (solve difficulty): for the aliments not only
 soluti, sed multum mutati, que nacti sibi novas
dissolved, but much changed, and having acquired to themselves new
 dotes, deferuntur in sanguinem sub formâ chyli. Lac ipsum,
properties, are conveyed into the blood under the form of chyle. Milk itself,
 simplicissimus cibus et simillimus chylo, primo cogitur in ventriculo,
the most simple food and most like to chyle, first is coagulated in the stomach,
 deinde concoquitur, et solvitur, et ut alii cibi vertitur in
then it is digested, and is dissolved, and like other food is converted into
 chylum priusquam fuerit (pro attulerit) idoneo nutrimento corpori.
chyle before that it could bring proper nutriment to the body.

635. Motus intestinorum est simplicissimus in sanitate, et vocatur
The motion of the intestines is very simple in health, and is called
 peristalticus. Alia portio cietur post aliam ad contractionem,
peristaltic. One portion is excited after another to contraction,
 partim acrimoniâ, partim mole alimentariæ massæ, quæ,
partly by the acrimony, partly by the bulk of the alimentary mass, which,

thoracicum deferitur, et in sanguinem recipitur, postquam per pulmones iter absolverit in naturam animale penitus mutatus. Plurimo vero affluente ex intestinis, jecore, pancreate, humore, massa quæ superest vix spissescit, donec ad crassa intestina pervenitur: tum vero parcius diluta, et multo decedente humore, stercoris tandem formam induit, sæpe firmi, et vestigia cellularum coli retinentis.

634. Multum vero abest ut plenam mutationum, quas cibi in ventriculo aut intestinis subeunt, notitiam habeamus. Natura enim et vires fermentationis, fortasse etiam varia ejus

genera, parum adhuc intelliguntur, neque ex ea concoctionis ciborum ratio reddi potest. Neque mera solutio nodum solvet: cibi enim non modo soluti, sed multum mutati, novasque sibi nacti dotes, sub forma chyli in sanguinem deferuntur. Lac ipsum, simplicissimus et chylo simillimus cibus, cogitur primo in ventriculo, deinde concoquitur, et solvitur, et in chylum ut alii cibi vertitur, priusquam idoneo corpori nutrimento fuerit.

635. Motus intestinorum in sanitate simplicissimus est, et peristalticus vocatur. Portio alia post aliam ad contractionem cietur, partim

tandem propulsa in intestinum rectum, stimulat hanc partem, at length driven forward into the intestinum rectum, stimulates this part, inducit cupiditatem desidendi, et ciet intestinum brings on a desire of sitting down (going to stool), and excites the intestine ipsum, et musculos abdominis et transversum septum, itself, and the muscles of the abdomen and transverse septum (diaphragm), quæ consentiunt cum eo, ad contractionem, quâ renixu which consent with it, to contraction, by which the resistance musculi qui claudit anum superato, excernitur e corpore. of the muscle which closes the anus being overcome, it is excreted from the body.

636. Philosophi et medici conati sunt, revera, reddere bene Philosophers and physicians have endeavoured, indeed, to render a great multas alias rationes concoctionis: alii tribuentes maximam partem many other explanations of digestion: some attributing the greatest part calori, alii agitationi et triturae, alii fermentationi; quamvis to heat, others to agitation and triture, others to fermentation; although

haud tuiti sint varias sententias quas amplecterentur they have not defended the various opinions which they embraced (adopted) argumentis satis validis. Neque, tamen, perdiderunt omnem by arguments sufficiently valid. Nor, notwithstanding, have they lost all operam quam impendebant huic rei. Saltem, reddiderunt the labour which they expended upon this subject. At least, they have rendered rationem multarum affectionum quibus hæcce utilissima functio an account of many affections with which this very useful function sæpe corrumpitur, et itaque indicarunt remedia idonea often is corrupted, and therefore have pointed out the remedies proper adversus eas. against them.

637. Alii cibi concoquantur facile, alii ægerrime: autem (est) Some aliments are digested easily, others very difficultly: but there is mira diversitas hominum de hac re, et vis a wonderful difference of men upon this subject, and the force consuetudinis (est) adhuc magis mira, ita ut quod of habit is still more wonderful, so that what fuerit (attulerit) huic cibo, (fuerit) illi fere would be to this (one) food, (would be) to that (another) almost veneno. Quin et, dura ilia messorum aliquando concoxerint a poison. Moreover, the hard bowels of mowers sometimes will digest fere lapideum cibum cui assueverint the almost stony food to which they have accustomed themselves (been accustomd) facilius quam delicatissimum. more easily than the most delicate.

638. Fere omnes cibi quibus utimur mitescunt, et Almost all the foods which we use grow mild, and

acrimonia, partim mole alimentariæ massæ, quæ tandem in intestinum rectum propulsa hanc partem stimulat, desidendi cupiditatem inducit, et intestinum ipsum, et, quæ cum eo consentiunt, musculos abdominis et septum transversum, ad contractionem ciet, qua, superato renixu musculi qui anum claudit, e corpore demum excernitur.

636. Alias revera bene multas concoctionis rationes reddere conati sunt philosophi et medici: alii maximam partem calori, alii agitationi et triturae, alii fermentationi tribuentes; quamvis haud satis validis argumentis tuiti

sint varias quas amplecterentur sententias. Neque tamen omnem quam impendebant huic rei operam perdiderunt. Rationem saltem reddiderunt multarum affectionum, quibus sæpe corrumpitur utilissima hæcce functio, et idonea itaque adversus eas remedia indicarunt.

637. Cibi alii facile alii ægerrime concoquantur. Mira autem de hac re hominum diversitas, et magis adhuc mira vis consuetudinis; ita ut quod huic cibo, illi fere veneno fuerit. Quin et dura messorum ilia, lapideum fere cui assueverint cibum, facilius quam delicatissimum aliquando concoxerint.

molliantur flammâ: mistura quoque, et fermentatio, et plurima
are softened by fire: mixture also, and fermentation, and many
 condimenta, aliâ atque aliâ ratione reddunt cibos faciliores
condiments, in a different manner render the aliments easier
 solutu et concoctu. Hoc modo coquinaria ars (est) non
to be dissolved and to be concocted. In this manner the cookery art (is) not
 modo grata sed fere necessaria assuetis: vero eadem
only agreeable, but almost necessary to those accustomed to it: but the same
 nimis culta, et miscens atque confundens contraria et
too much cultivated, also mixing and confounding contrary and
 dissociabilia, imprimis nocet; et sane potissimum hac ratione,
discordant things, especially hurts; and indeed chiefly for this reason,
 quod invitat homines ad ingluviem: neque, profecto, aut
because it invites men to gluttony: nor, indeed, does either
 qualitas aut mistura ciborum, (quamvis hæc sane aliquando noceat
the quality or mixture of foods, (although this truly sometimes may hurt
 haud parum, sicuti faciat totam massam fermentescere nimis
not a little, since it may cause the whole mass to ferment too
 cito et vehementer) nocet helluoni tantum quantum ingens
quickly and violently) hurt the glutton so much as the immense
 copia quam ingurgitat. Enim, sanus homo neque famelicus,
quantity which he gorges. Moreover, a healthy man and not starved,
 raro sumet plus justo unius et simplicis generis cibi:
seldom will take more than proper of a single and simple kind of food:
 autem illectus varietate et condimentis, et exquisitâ arte coqui,
but allured by variety and condiments, and the exquisite art of the cook,
 onerabit sese plus triplo quam debet.
will load himself more by triple than he ought.

639. Plerique duri cibi, aut conditi et indurati sale, fumo,
Most hard foods, or those seasoned and hardened by salt, smoke,
 pipere, aromaticis, aut glutinosi et oleosi, cum fruges tum
pepper, spices, or glutinous and oily, as well vegetables as
 quoque carnes, solent esse difficiliores concoctu: carnes
also flesh, are accustomed to be more difficult to be digested: the flesh
 quoque juniorum animalium et carnes avium concoquantur
also of younger animals and the flesh of birds are digested
 difficilior, ut videtur, quam quadrupedum.
more difficultly, as it seems, than of quadrupeds.

640. Autem tanta est vis edacis humoris jejuni
But so great is the power of the solving juice of the empty
 ventriculi, in aliis atque aliis generibus animalium, ut solvat
stomach, in the different kinds of animals, that it can solve

638. Omnes fere quibus utimur cibi mitescunt
 flamma et molliantur: mistura quoque, et fer-
 mentatio, et condimenta plurima, alia atque
 alia ratione, cibos solutu et concoctu faciliores
 reddunt. Hoc modo ars coquinaria non grata
 modo, sed fere necessaria assuetis: eadem vero
 nimis culta, et contraria et dissociabilia mis-
 cens atque confundens, imprimis nocet; et sane
 hac potissimum ratione, quod homines ad in-
 gluviem invitat: neque profecto aut qualitas,
 aut mistura ciborum (quamvis hæc sane haud
 parum aliquando noceat, sicuti totam massam
 nimis cito et vehementer fermentescere faciat)
 helluoni tantum nocet, quantum ingens copia

quam ingurgitat. Homo enim sanus, neque
 famelicus, unius et simplicis cibi generis raro
 plus justo sumet: varietate autem, et condi-
 mentis, et exquisita coqui arte illectus, triplo
 plus quam debet sese onerabit.

639. Cibi plerique duri, aut sale, fumo, pipere,
 aromaticis, conditi et indurati, aut glutinosi,
 et oleosi cum fruges, tum quoque carnes, diffi-
 ciliores solent esse concoctu: carnes quoque
 juniorum animalium, et carnes avium, quam
 quadrupedum, difficilior, ut videtur, conco-
 quantur.

640. Tanta autem vis est edacis humoris je-
 juni ventriculi, in aliis atque aliis animalium

et concoquat non modo olea, gluten, cartilaginem, sed demum ossa, and digest not only oils, gluten, cartilage, but even bones, et durissimum ebur. Dicitur, quoque aliquando rodere ventriculum and the hardest ivory. It is said, also sometimes to erode the stomach ipsum brevissimo tempore post mortem. itself in a very short time after death.

641. Ex his denique ratio potest reddi, cur concoctio From these at length the reason may be given, why concoction (is) tam sæpe vitata, cur corruptio alimentorum in ventriculo, so often disordered, why a corruption of the aliments in the stomach, primo acida, dein putrida familiaris concoquentibus male; at first acid, afterwards putrid (is) common to those digesting badly; cur concoctio ciborum subito turbetur et corrumpatur, why the concoction of the foods suddenly may be disturbed and corrupted, non modo variis morbis corporis, sed sæpe etiam gravi affectu not only by various diseases of the body, but often even by a severe affection animi: cur exercitatio corporis sæpe promoveat, vero aliquando of the mind: why exercise of the body often may promote, but sometimes impediatur actionem ventriculi in cibis; cur cyathus meri may impede the action of the stomach upon the food; why a glass of wine prosit multis hominibus et juvet concoctionem, vero noceat may benefit many persons and assist digestion, but may injure multis, que corrumpat eandem (concoctionem). many, and may corrupt the same.

CAP. XIX.

CHAP. XIX.

De vitiis concoctionis que variis morborum affectionibus organorum Of the disorders of digestion and the various morbid affections of the organs quæ inserviunt concoctioni. which subserve to concoction.

642. Appetitus cibi sæpe deficit, cum a statu ventriculi, The appetite for food often fails, as well from the state of the stomach, tum quoque a (statu) reliqui corporis. Anorexia, itaque, as also from (the state) of the rest of the body. Anorexia, therefore, est comes et effectus multorum morborum; neque tamen is an attendant and effect of many diseases; nor notwithstanding

generibus, ut non modo olea, gluten, cartilaginem, sed ossa demum, et durissimum ebur, solvat et concoquat. Dicitur, quoque ventriculum ipsum aliquando rodere, brevissimo post mortem tempore.

641. Ex his denique ratio reddi potest, cur concoctio tam sæpe vitata, cur alimentorum in ventriculo corruptio, acida primo, dein putrida, male concoquentibus familiaris; cur subito turbetur et corrumpatur ciborum concoctio, non modo variis corporis morbis, sed sæpe etiam gravi animi affectu; cur corporis exercitatio sæpe promoveat, aliquando vero

impediatur actionem ventriculi in cibis; cur cyathus meri multis hominibus prosit, et concoctionem juvet, multis vero noceat, eandemque corrumpat.

CAP. XIX.—De vitiis concoctionis, variisque organorum quæ concoctioni inserviunt affectionibus morborum.

642. APPETITUS cibi sæpe deficit, cum a ventriculi, tum quoque a reliqui corporis, statu. Multorum itaque morborum Anorexia comes est et effectus; neque tamen semper morbosa habenda. Male enim de appetitus defectu con-

semper habenda morbosa. Enim helluones male conqueruntur
always to be considered diseased. For gluttons badly (wrongly) complain

de defectu appetitûs, quum corpus, sanius mente, fastidit
of loss of appetite, when the body, sounder than the mind, loathes

et respuit cibum quo non eget.
and rejects the food which it does not want.

643. Appetitus est nullus vel debilis sicubi ventriculus nondum
The appetite is none or weak whenever the stomach has not yet

liberaverit se a cibo quem sumpserat proxime: hinc sæpe
freed itself from the food which it had taken last: hence often

(est) nullus, post crapulam, donec hæc (crapula) fuerit bene
there is none, after a surfeit, until this have been thoroughly

exhalata. Deficit quoque si quando concoctio alimentorum
exhaled (digested.) It fails also whenever the concoction of the aliments

est prava; nam ventriculus tradiderit ægre crudum cibum
is bad; for the stomach will deliver with difficulty crude food

intestinis. Sæpe deficit propter exercitationem neglectam,
to the intestines. Often it fails on account of exercise being neglected,

quâ totum corpus debuisset depleri, quamvis ventriculus
by which the whole body ought to have been depleted, although the stomach

ipse habeat se satis bene et concoctio fuerit bona. Fere
itself may have itself very well and digestion should be good. Generally

deficit a exhalatione per cutem suppressâ; ab omni
it fails from the exhalation by the skin being suppressed; from every

debilitate ventriculi qualis sæpe inducitur subito; et demum,
weakness of the stomach such as often is induced suddenly; and lastly,

appetitus cibi est pravus in omni febre: neque, profecto,
the appetite for food is bad in every (kind of) fever: nor, truly,

certius signum datur febris decedentis quam appetentia
is a more certain sign given (afforded) of fever going off than the desire

cibi redux. Quin et, multum abest ut defectus appetitûs, et
for food returning. Moreover, it is far from that the loss of appetite, and

inedia quæ sequitur inde, noceat ægris, præsertim
the fasting which follows from thence, can hurt the sick, especially

decumbentibus acutis morbis, tantum quantum similis inedia
those lying down with acute diseases, so much as similar fasting

noceret sano homini. Neque profecto prætereundum est (nobis) silentio,
would hurt a healthy person. Nor indeed ought we to pass over in silence,

fastidium cibi, quod æger habet primis diebus febris,
that the loathing of food, which the sick has in the first days of fever,

sæpe cedere potius in salutem. Nimirum Natura sapiens
often tends rather towards health. Doubtless Nature wisely

queruntur helluones, quum corpus, mente sanius, cibum, quo non eget, fastidit et respuit. 643. Nullus vel debilis est appetitus, sicubi ventriculus quem proxime sumpserat cibo se nondum liberaverit: hinc post crapulam, sæpe nullus, donec hæc bene exhalata fuerit. Deficit quoque, si quando concoctio alimentorum prava est; nam ventriculus crudum cibum ægre intestinis tradiderit. Deficit sæpe propter exercitationem neglectam, qua totum corpus debuisset depleri (619), quamvis ventriculus ipse satis bene se habeat, et concoctio bona fuerit. Deficit fere a suppressa per cutem exhalatione; ab omni etiam ventriculi debilitate, qualis sæpe subito inducitur; et in omni demum febre appetitus cibi parvus est: neque profecto certius datur signum febris decedentis, quam cibi appetentia redux. Quin et multum abest, ut defectus appetitus, et quæ inde sequitur inedia, ægris, præsertim acutis morbis decumbentibus, tantum noceat, quantum similis inedia sano homini noceret. Neque profecto silentio prætereundum est, fastidium cibi, quod primis diebus febris æger habet, sæpe potius

recusat (adj. adv. red.) onus quale neque potuisset concoquere,
refuses a burthen such as she neither could have digested,
 neque ferre (Infinitive temp. ab iis præcend. pendent)
nor borne (the times of the infinitives regulated by the previous verbs)

impune.
with impunity.

644. Appetitus cibi (est) varius etiam admodum sanis,
The appetite for food (is) various also even in the very healthy,
 nonnunquam intenditur in mirum modum, ita ut
sometimes it is increased in a wonderful degree, so that
 habeatur non immerito morbosus. Rarum genus mali,
it may be considered not undeservedly diseased. A rare kind of disorder,
 tamen nonnunquam observatum, et creditum oriri vel a
nevertheless sometimes observed, and believed to arise either from
 longâ inediâ, vel ab ingentibus exinanitionibus, (rubi revera
long fasting, or from large evacuations, (when truly
 esset opus subsidio majore solito) vel ab quodam acri
there was need of a supply greater than usual) or from some acrid thing
 genito in ventriculo, aut recepto in eum, que stimulant eundem
generated in the stomach, or admitted into it, and stimulating the same
 nimis, vel a læsâ imaginatione, vel denique a pravâ
too much, or from diseased imagination, or finally from a bad
 consuetudine. Enim est non dubium homines evadere avidiores et
habit. For it is not doubtful that men become more covetous and
 capaciores cibi usu solo.
more capable of food by use alone.

645. Depravatio ejûsdem appetitûs et desiderium insolitæ
A depravation of the same appetite and a desire of an unusual
 parum idoneæ aut non esculentæ rei, plerumque oritur a læsâ
not very suitable or not esculent thing, generally arises from diseased
 imaginatione, præsertim ubi attenditur (sc. ab æg. imperson. pon.) plus
imagination, especially when it is attended (when we attend) more
 justo ad ventriculum habentem se male. Hæc videtur esse
than proper to the stomach having itself badly. This seems to be
 ratio quod malum aliquando accidens naturâ
the reason that the disorder sometimes happening by nature (naturally)
 mulieribus dum gerunt uterum (gravidum) scilicet quæ
to women whilst they carry the uterus (when pregnant) as being those who
 fere soleant laborare a ventriculo, ingravescat eo magis,
generally are accustomed to suffer from the stomach, increases the more,
 et facessat plus molestiæ ipsis et aliis, quo indulgeant
and causes more (of) trouble to themselves and others, as they indulge

in salutem cedere. Sapiens nimirum Natura onus recusat, quale neque concoquere potuisset, neque impune ferre.

644. Cibi appetitus etiam sanis admodum varius, nonnunquam mirum in modum intenditur, ita ut non immerito morbosus habeatur. Rarum mali genus, nonnunquam tamen observatum, et creditum oriri, vel a longa inedia, vel ab ingentibus exinanitionibus (ubi subsidio solito majore revera opus esset), vel ab acri quodam in ventriculo genito, aut in eum recepto, eundemque nimis stimulantem, vel a læsâ imaginatione, vel denique a prava con-

suetudine. Non dubium enim est, homines solo usu avidiores cibi et capaciores evadere.

645. Depravatio ejusdem appetitus, et rei insolitæ, parum idoneæ, aut non esculentæ, desiderium, plerumque a læsâ imaginatione oritur, sæpe a nimia indulgentia, præsertim ubi ad ventriculum diu male se habentem plus justo attenditur. Hæc videtur esse ratio quod malum, mulieribus dum uterum gerunt natura aliquando accidens, scilicet quæ a ventriculo fere soleant laborare, eo magis ingravescat, et ipsis et aliis plus molestiæ facessat, quo sibi plus indulgeant: rarissimum ubi mos

sibi plus; rarissimum (sc. malum) ubi mos vetat indulgere
themselves more: a very rare one where the custom forbids to indulge
 ei (sc. malo), jubet celare talem abnormem appetitum; frequens et
 it, orders to conceal such an irregular appetite; frequent and
 vehemens, neque semper directum ad res ullo modo esculentas,
 vehement, nor always directed to things in any way esculent,
 ubi fœminæ potius ducunt decorum sibi, et mos
 where women rather consider it becoming to them, and the custom
 jubet omnem maritum indulgere gravidæ uxori, et sane metus
 orders every husband to indulge his pregnant wife, and indeed fear
 cogat, ne uxor pariat monstrum pro filio;
 compels (him), lest his wife should bring forth a monster for (instead of) a son;
 vel denique, si quid mali forte acciderit mulieri,
 or lastly, if any (of) evil by chance should happen to the woman,
 aut abortu aut puerperio, ipse habeatur
 either by abortion or in parturition, he himself should be considered
 parricida suæ uxoris.
the murderer of his wife.

646. Vehemens appetentia insolitæ que vix esculentæ rei
A vehement longing for an unusual and scarcely esculent thing
 nonnunquam observatur a certo statu ventriculi, quæ,
is sometimes observed from a certain state of stomach, which,
 tamen, potest esse salubris: veluti cupiditas absorbentium, ut
notwithstanding, may be healthy: as a desire for absorbents, as
 vocantur, a multo acore in ventriculo, vel (cupiditas) acidorum
they are called, from much acid in the stomach, or for acids
 et omnis herbæ in scorbuto, vel vini et similibus
and every (kind) of vegetable in scurvy, or of wine and like things
 in febre. Desideria hujusmodi, si indulgetur modice iis
in fever. Desires of this sort, if it be indulged moderately to them
 (impersonal. ponitur) - sæpe prosunt, raro nocent.
(they be moderately indulged) often benefit, seldom injure.

647. Sitis, non secus ac fames, aliquando deficit, aliquando
Thirst, in like manner as hunger, sometimes fails, sometimes
 observatur nimia. Defectus ejus vix est habendus morbosus,
is observed excessive. Defect of it scarcely is to be considered diseased,
 dummodo cætera valetudo fuerit secunda, et concoctio
provided the rest of the health should be good, and the digestion
 cibi bona; nimirum quia tunc est verisimile corpus
of the food healthy; truly because then it is probable that the body
 non egere potu. Sunt qui nunquam sitiunt; scilicet,
does not want drink. There are they who never thirst; namely,

vetat ei indulgere, jubet celare talem appetitum abnormem; frequens et vehemens, neque semper ad res ullo modo esculentas directum, ubi fœminæ potius decorum sibi ducunt, et mos jubet omnem maritum gravidæ uxori indulgere, et sane metus cogat, ne pro filio monstrum pariat uxor: vel denique, si forte quid mali, aut abortu aut puerperio, mulieri acciderit, ipse suæ uxoris parricida habeatur.

646. Nonnunquam appetentia vehemens rei insolitæ vixque esculentæ observatur, a certo statu ventriculi, quæ tamen salubris esse po-

test: veluti cupiditas absorbentium, ut vocantur, a multo acore in ventriculo, vel acidorum et omnis herbæ in scorbuto, vel vini et similibus in febre. Hujusmodi desideria, si iis modice indulgetur, sæpe prosunt, raro nocent.

647. Sitis, non secus ac fames, aliquando deficit, aliquando nimia observatur. Defectus ejus vix morbosus habendus est, dummodo valetudo cætera secunda fuerit, et concoctio cibi bona; nimirum, quia tunc verisimile est, corpus potu non egere. Sunt qui nunquam sitiunt; homines, scilicet, constitutionis corporis

homines humidæ constitutionis corporis, que utentes fluido cibo,
persons of a moist constitution of body, and using fluid food,
 quibus copiosior secretio humorum oris nunquam sinit
in whom a more copious secretion of the fluids of the mouth never permits
 fauces arescere.
the fauces to grow dry.

648. Vero nulla sitis, cum aridæ fauces, scabra lingua, que
But no thirst, when the dry fauces, the furred tongue, and
 alia signa testantur esse opus multo potu, ea (sc. sitis)
other symptoms testify that there is need of much drink, that
 demum est vere morbosa, et haud secundi ominis: fere
indeed is truly morbid, and of no favorable omen: for the most part
 referenda ad stuporem, delirium, cerebrum læsum aliquo
to be referred to stupor, delirium, the brain injured in some
 modo; quo fit ut æger nequeat percipere stimulum
way; by which it happens that the patient cannot perceive a stimulus
 quamvis validum.
however strong.

649. Nimia sitis, multo frequentius genus vitii, oritur
Excessive thirst, (by) a much more frequent kind of disease, arises
 vel ab inopiâ fluidarum partium in corpore, veluti si potus
either from dearth of the fluid parts in the body, as when drink
 fuerit negatus diu; vel si corpus fuerit exhaustum
has been denied for a long time; or when the body has been exhausted of
 suo humore validâ exercitatione, aut sudore, aut ingente
its fluid by violent exercise, or sweating, or a severe
 profluvio alvi aut urinæ: vel ab aliquo acri admissio
profluvium of the belly or of the urine: or from some acrid admitted
 in corpus, quale provida Natura docet (nos) (nobis) diluendum
into the body, such as provident Nature teaches (us) that we ought to dilute
 multo potu, ut (acre) fiat innocuum, veluti si sal,
with much drink, that it may become harmless, as whenever salt,
 piper, saccharum, que alia condimenta, aut demum duriores et
pepper, sugar, and other condiments, or even the harder and
 acriores cibi fuerint sumpta: vel a ventriculo habente
sharper foods have been taken: or from the stomach having
 se male, et gravato onere corrupti cibi que potus, quod
itself badly, and oppressed with a load of corrupted food and drink, which
 helluones et ebriosi (sc. homines) solent satis experiri;
gluttons and drunken persons are accustomed sufficiently to experience;
 vel a suppressâ aut minutâ secretione humorum oris,
or from suppressed or diminished secretion of the fluids of the mouth,

humidæ, fluidoque cibo utentes, quibus copiosior oris humorum secretio nunquam sinit fauces arescere.

648. Sitis vero nulla, cum fauces aridæ, lingua scabra, aliaque signa testantur multo potu opus esse; ea demum vere morbosa est, et haud secundi ominis; ad stuporem, delirium, læsum aliquo modo cerebrum, fere referenda; quo fit, ut æger stimulum, quamvis validum, nequeat percipere.

649. Nimia sitis, frequentius multo vitii genus, oritur, vel ab inopia partium fluidarum

in corpore, veluti si potus diu negatus fuerit; vel si corpus valida exercitatione, aut sudore, aut alvi aut urinæ ingente profluvio, suo exhaustum fuerit humore; vel ab acri aliquo in corpus admissio, quale Natura provida docet multo potu diluendam esse, ut innocuum fiat, veluti si sal, piper, saccharum, aliaque condimenta, aut cibi demum duriores, et acriores, sumpta fuerint; vel a ventriculo ipso male se habente, et onere cibi potusque corrupti gravato, quod helluones et ebriosi satis solent experiri; vel a suppressa aut minuta oris humorum

qualis sæpe observatur a vehemente affectu animi, aut febre,
such as often is observed from a violent affection of the mind, or from fever,
 aut spasma; vel denique ab tenuibus humoribus versis
or spasm; or lastly from the thin fluids turned
 aliò, quamvis fuerit sat que super
elsewhere, although there should be sufficient and over (enough and more than enough)
 eorum (sc. humorum) in corpore; cujus omnigenus hydrops potest
of them in the body; of which every kind of dropsy may
 esse exemplum. Quin et variæ causæ quæ intendunt
be an example. Moreover the various causes which increase (the intensity of)
 sitim, possunt conjungi in eodem ægro, que ideo inducere
thirst, may be united in the same patient, and thus bring on
 gravius malum: veluti in plerisque febribus quibus ingens
a more severe disorder: as in most fevers in which great
 sitis fere accidit tum ob humores corporis
thirst mostly happens (occurs) as well on account of the fluids of the body
 dissipatos, tum ob calorem, tum ob
being dissipated, as on account of heat, as also on account of
 minutam secretionem humorum quibus os debet
the diminished secretion of the fluids with which the mouth ought
 madere (neut.) tum demum ob ventriculum pessime
to be moistened as lastly on account of the stomach very badly
 affectum neque concoquentem rite, neque tradentem suum onus
affected, nor concocting properly, nor delivering its load
 intestinis.
to the intestines.

650. Ratio, itaque, erit in promptu, cur nimia sitis
The explanation, therefore, will be in readiness, why excessive thirst
 (sit) adeo frequens; (cur) interdum salutaris instinctus Naturæ,
is so frequent; why sometimes a salutary instinct of Nature,
 interdum affectio prorsus inutilis: cur nunc sitiens
sometimes an affection wholly useless: why at one time the thirsting
 (sc. homo) egeat plurimo potu, que ventriculus, fere
person may require a great deal of drink, and the stomach, almost
 statim ut fuerit haustus, sorbeat (eum), deferendum
immediately that it has been swallowed, absorbs it, to be conveyed
 quâ est opus; cur exigui haustus sæpe sufficient et prosint
where there is need; why small draughts often suffice and avail
 magis, que (cur) ventriculus ne possit aut sorbere, aut tolerare,
more, and the stomach cannot either absorb, or bear,
 largiores (sc. haustus) sine incommodo; cur acida, acescentia,
larger ones without inconvenience; why acid, sour things

secretione, qualis a vehemente animi affectu, aut febre, aut spasma, sæpe observatur; vel denique ab humoribus tenuibus alio versis, quamvis sat superque eorum in corpore fuerit; cujus hydrops omnigenus exemplum esse potest. Quin et variæ causæ, quæ sitim intendunt, in eodem ægro conjungi possunt, graviusque ideo malum inducere: veluti in febribus plerisque, quibus fere ingens sitis accidit, cum ob dissipatos corporis humores, tum ob calorem, tum ob minutam secretionem humorum quibus os decet madere, tum demum ob ventriculum

pessime affectum, neque concoquentem rite, neque onus suum intestinis tradentem.

650. Ratio itaque in promptu erit, cur nimia sitis adeo frequens; interdum salutaris naturæ instinctus, interdum affectio prorsus inutilis; cur nunc plurimo potu sitiens egeat, eundemque ventriculus, statim fere ut haustus fuerit, sorbeat, qua opus est deferendum; cur sæpe exigui haustus sufficient, et prosint magis, neque ventriculus largiores aut sorbere, aut sine incommodo tolerare possit; cur acida, acescentia, fructus maturi, paucillum demum

maturi fructus, demum paucillum vini mixtum cum potu
 ripe fruits, in fine a little (of) wine mixed with the drink
 pellant sitim melius et certius purâ aquâ: et
 drive off (quench) thirst better and more certainly than pure water: and
 denique, cur sitis ne sedanda quidem nectare
 lastly, why thirst not to be assuaged (quenched) even by nectar
 pellatur medicamento vomitorio.
 may be driven off by a medicine that causes vomiting (by an emetic).

651. Actio manducandi nonnunquam impeditur aut
 The action of chewing (mastication) sometimes is impeded or
 corrumpitur variis vitis plurimorum organorum
 is destroyed (interrupted) by the various disorders of the several organs
 quæ inserviunt eidem (actioni mand.) dolore, tumore, inflammatione,
 which subserve to the same pain, swelling, inflammation,
 ulcere, debilitate, rigiditate, spasma, defectu dentium, maxillarum,
 ulcer, debility, rigidity, spasm, defect of the teeth, of the jaws,
 buccarum, labiorum, linguæ.
 of the cheeks, of the lips, of the tongue.

652. Actio devorandi quæ debet succedere
 The action of swallowing (deglutition) which ought to succeed
 huic impeditur quoque similibus causis afficientibus
 to the latter (mastication) is impeded also by similar causes affecting
 vel os, vel guttur, vel gulam, veluti in anginâ,
 either the mouth, or throat, or gullet (œsophagus), as in angina,
 hydrophobiâ, paralyti; denique, summa debilitate, qualis accidit
 hydrophobia, paralysis; lastly, in extreme debility, such as occurs
 sub finem multorum morborum, præsertim febrium: tum
 towards the termination of many diseases, especially fevers: then
 pessimum vix non lethale.
 the worst sign scarcely not (all but) deadly.

653. Vero jam concoctio ciborum receptorum in ventriculum
 But even the digestion of the aliments received into the stomach
 sæpissime vitatur, plerumque cum majore incommodo quam
 very often is vitiated, for the most part with (to the) greater annoyance than
 periculo ægrotantis.
 danger of the person sick.

654. Concoquitur male (impersonaliter) imprimis propter cibos
 It is digested badly (digestion is bad) first of all on account of the food
 ipsos sumptos quantitate, qualitate, mixturâ, minus idoneis, neque
 themselves taken (being) in quantity, quality, mixture, noway suitable, nor
 confectos, ut decet, in ore; unde ventriculus vel distentus
 chewed, as they ought, in the mouth; whence the stomach either distended

vini cum potu mixtum, sitim pura aqua melius et certius pellant; et denique cur sitis, ne nectare quidem sedanda, vomitorio medicamento aliquando pellatur.

651. Impeditur nonnunquam aut corrumpitur actio manducandi, variis vitis plurimorum quæ eidem inserviunt organorum; dolore, tumore, inflammatione, ulcere, debilitate, rigiditate, spasma, defectu dentium, maxillarum, buccarum, labiorum, linguæ.

652. Impeditur quoque similibus causis, vel os vel guttur, vel gulam afficientibus, quæ huic succedere debet, actio devorandi, veluti

in angina, hydrophobia, paralyti, summa denique debilitate, qualis sub finem multorum morborum, præsertim febrium, accidit: signum tum pessimum, vix non lethale.

653. Ciborum vero jam in ventriculum receptorum concoctio sæpissime vitatur, cum majore plerumque ægrotantis incommodo quam periculo.

654. Concoquitur male, imprimis, propter ipsos cibos, quantitate, qualitate, mixtura minus idoneis sumptos, neque ut decet in ore confectos; unde ventriculus, vel nimio onere distentus et gravatus, neque solvere neque pro-

et gravatus nimio onere, potest neque solvere neque propellere
and oppressed by too great a load, can neither dissolve nor propel
 cibos quos continet; vel alimentaria massa aut indissolubilis
the foods which it contains; or the alimentary mass either indissoluble
 aut nimis prona in corruptionem brevi fermentescit
or too prone (too much disposed) to corruption quickly begins to ferment
 atque corrumpitur, viribus ventriculi, quæ debent temperare
and is corrupted, the powers of the stomach, which ought to moderate
 istam proclivitatem alimentorum ad fermentandum, parum
that tendency of the aliments to ferment, not at all
 valentibus.

availing (being wholly inadequate.)

655. Vero optimi cibi et facillimi concoctu, sæpe
But the best aliments and the most easy to be digested, often
 concoquantur ægrè, propter bene multa vitia
are digested with difficulty, on account of the very many disorders
 ventriculi ipsius, et partium quæ præcipue consentiunt cum
of the stomach itself, and of the parts which especially consent with
 eo, vel denique (prop. vitia) universi corporis.
it, or lastly of the whole body.

656. Defectus humorum ventriculi, varia vitia eorundem,
Deficiency of the juices of the stomach, various disorders of the same,
 debilitas fibrarum quibus ventriculus instruitur, quævis
debility of the fibres with which the stomach is furnished, any
 obstructio circa pylorum, qualis non sinit ventriculum
obstruction about the pylorus, such as does not permit the stomach
 tradere massam quam continet intestinis: tardior motus
to transmit the mass which it contains to the intestines: a slower motion
 intestinorum, varii morbi ipsorum, generalis infirmitas corporis,
of the intestines, various diseases of them, general infirmity of the body,
 sive a morbis, sive a gravibus affectibus animi, sive
whether from diseases, or from severe affections of the mind, or
 a neglectâ exercitatione; demum, exhalatio per cutem
from neglected exercise; in fine, the exhalation by the skin
 suppressâ vel minuta ab ignaviâ, vel a frigore, præsertim
being suppressed or diminished by idleness, or by cold, especially
 admoto pedibus, vel a frigidâ et humidâ constitutione aëris,
applied to the feet, or from a cold and humid constitution of the air,
 sæpe corrumpunt concoctionem ciborum.
often corrupt (deprave) the digestion of the aliments.

657. Innumera mala oriuntur a pravâ concoctione ciborum,
Innumerable diseases arise from a bad digestion of the aliments,

pellere potest cibos quos continet; vel massa alimentaria, aut indissolubilis aut in corruptionem nimis prona, brevi fermentescit atque corrumpitur, viribus ventriculi, quæ istam alimentorum ad fermentandum proclivitatem temperare debent (630), parum valentibus.

655. Cibi vero optimi, et concoctu facillimi, propter vitia heu multa ipsius ventriculi, et partium quæ præcipue cum eo consentiunt, vel denique universi corporis, ægrè sæpe concoquantur.

656. Defectus humorum ventriculi, varia eorundem vitia, debilitas fibrarum quibus ven-

tricus instruitur, obstructio quævis circa pylorum, qualis non sinit ventriculum massam quam continet intestinis tradere; tardior intestinorum motus, varii ipsorum morbi, infirmitas corporis generalis, sive a morbis, sive a gravibus animi affectibus, sive a neglectâ exercitatione; suppressa demum, vel minuta per cutem exhalatio, ab ignavia, vel a frigore, pedibus præsertim admoto, vel a constitutione aëris frigida et humida, concoctionem ciborum sæpe corrumpunt.

657. A prava concoctione ciborum innumera oriuntur mala, neque levia, neque sanatu

neque levia, neque facilia sanatu, quamvis raro observentur
nor slight, nor easy to be cured, although they are seldom observed
 periculosa; oppressio, anxietus, dolor ventriculi, ructus ab
dangerous; oppression, anxiety, pain of the stomach, belching from
 aëre extricato inter fermentandum et irritante
air disengaged while fermenting (during fermentation) and irritating
 ventriculum, et erumpente per gulam; nausea et vomitus
the stomach, and breaking forth through the gullet; nausea and vomiting
 a ventriculo irritato et distento; alvus aliquando tarda
from the stomach being irritated and distended; the belly sometimes slow
 aliquando nimis liquida; defectus nutrimenti, generalis in-
sometimes too liquid (relaxed); want of nourishment, general in-
 firmitas, solidæ partes laxæ, fluidæ nimis tenues, omnes
firmity, the solid parts relaxed, the fluid ones too thin, all
 functiones impeditæ, dolor capitis, vertigo, syncope, asthma,
the functions impeded, pain of the head, vertigo, syncope, asthma,
 palpitatio, spiritus valde demissi, præsertim si
palpitation, the spirits very downcast (hypochondriasis), especially if
 æger fuerit peculiaris constitutionis, nonnunquam demum hydrops,
the patient should be of a peculiar constitution, sometimes even dropsy,
 vel lenta febris, qualis potest esse tandem lethalis.
or slow fever, such as may be at length fatal.

658. Motus intestinorum aliquando deficit, aliquando est nimius.
The motion of the intestines sometimes fails, sometimes is excessive.

Hinc astricta, vel nimis soluta alvus.
Hence a bound, or too relaxed belly.

659. Durities alvi sæpe familiaris robustis, et
Hardness of the belly (costiveness) often common to the robust, and
 quidem sanis, gravior et diuturna demum est
indeed to the healthy, more severe and continued then at length is
 habenda morbus, ipse haud vacuus periculo, quoque
to be considered a disease, itself not free from danger, also
 comes et effectus et causa multorum morborum. Oritur a
the companion and effect and cause of many diseases. It arises from
 læsa fabrica intestinorum, veluti si fuerint constricta,
the injured structure of the intestines, as when they have been constricted,
 aut conclusa, aut obstructa, spasmo, schirro, quavis parte
or shut up, or obstructed, by spasm, schirrus, by some part
 delapsâ in aliam calculis, concretionibus formatis
having slipped into another (intussusception), calculi, concretions formed
 in iis, aut demum inflammatione; vel a stercore ipso, duro,
in them, or even inflammation; or from the feces itself, hard,

facilia, quamvis raro periculosa observentur; oppressio, anxietas, dolor ventriculi, ructus ab aëre inter fermentandum extricato, et ventriculum irritante, et per gulam erumpente; nausea et vomitus a ventriculo irritato et distento; alvus aliquando tarda, aliquando nimis liquida; defectus nutrimenti, generalis infirmitas, partes solidæ laxæ, fluidæ nimis tenues, omnes functiones impeditæ, dolor capitis, vertigo, syncope, asthma, palpitatio, spiritus valde demissi, præsertim si æger peculiaris constitutionis fuerit, interdum podagra, nonnunquam demum hydrops, vel febris lenta, qualis tandem lethalis esse potest.

658. Motus intestinorum aliquando deficit, aliquando nimius est. Hinc alvus astricta, vel nimis soluta.

659. Durities alvi, robustis et quidem sanis sæpe familiaris, gravior et diuturna morbus demum habenda est, ipse haud vacuus periculo, multorum quoque morborum comes, et effectus, et causa. Oritur vel a læsa fabrica intestinorum, veluti si constricta, aut conclusa, aut obstructa fuerint, spasmo, schirrho, parte quavis in aliam delapsa, calculis vel concretionibus in iis formatis, aut demum inflammatione; vel a stercore ipso, duro, sicco, ægre propellendo, a cibi genere nimis solido et potu parco;

siccò, ægre propellendo, a nimis solido genere cibi, et
dry, with difficulty to be propelled, from a too solid kind of food, and
 parco potu; vel a defectu humorum qui debent diluere
scanty drink; or from deficiency of the fluids which ought to dilute
 alimentariam massam, que humectare et reddere intestina
the alimentary mass, and to moisten and to render the intestines
 lubrica: vero hi secernuntur parcius justo vel
slippery: but these are secreted more sparingly than proper either
 ob vitia secernuntur organorum sæpe parum intellecta
on account of disorders of the secreting organs often little understood
 veluti in fere omnibus febribus, saltem primis temporibus, vel
as in almost all fevers, at least in the first stages, or
 propter sanguinem versum alio, veluti ad cutem; quod
on account of the blood directed elsewhere, as to the skin; which
 revera accidit a crebra et valida exercitatione, calore, multo
truly occurs from frequent and violent exercise, heat, much
 sudore. Dura alvus interdum quoque observatur a debilitate,
sweating. A costive belly sometimes also is observed from debility,
 nonnunquam forsitan a paralyti moventium fibrarum intestinorum,
occasionally perhaps from paralysis of the moving fibres of the intestines,
 vel denique a defectu soliti stimuli, veluti fellis, quod
or finally from deficiency of the usual stimulus, as of the bile, which
 supprimitur in regio morbo (? alio potius versum); vel a nimis
is suppressed in the royal disease (jaundice); or from too
 parco cibo, neque adeo acri ut stimulet intestina solito
spare diet, nor so sharp that it can stimulate the intestines in the usual
 more, et excitet ad justam actionem.
manner, and excite them to a proper action.

660. Vero excretio per alvum, utcunque putrida et acris videatur,
But the excretion by the belly, however putrid and acrid it may seem,
 præ omnibus aliis regitur consuetudine, et potest supprimi
before all others is governed by habit, and may be suppressed
 pro tempore minore periculo. Cibi plerumque transeunt per
for a time with less danger. The foods generally pass through
 corpus spatio circiter unius diei: vero sæpe multo velocius
the body in the space of about one day: but often much more quickly
 aut tardius; enim sunt alioquin sani qui vix
or slowly; moreover there are some otherwise healthy who scarcely
 evacuarint alvum ter in mense; multum hic pendet ab
will evacuate the belly three times in a month; much here depends upon

vel a defectu humorum qui massam alimentariam diluere (634) intestinaque humectare et lubrica reddere debent: hi vero parcius justo secernuntur, vel ob vitia organorum secernuntur sæpe parum intellecta, veluti in febribus fere omnibus, primis saltem temporibus, vel propter sanguinem alio versum, veluti ad cutem; quod revera accidit a crebra et valida exercitatione, calore, sudore multo. Alvus quoque dura interdum observatur a debilitate, nonnunquam forsitan a paralyti fibrarum moventium intestinorum, vel denique, a defectu

soliti stimuli, veluti fellis, quod in morbo regio supprimitur; vel a cibo nimis parco, neque adeo acri ut intestina more solito stimulet, et ad justam actionem excitet.

660. Excretio vero per alvum, utcunque putrida et acris videatur, præ omnibus aliis regitur consuetudine, et minore periculo pro tempore supprimi potest. Cibi plerumque spatio circiter unius diei per corpus transeunt: sæpe vero multo velocius aut tardius; sunt enim qui alvum vix ter in mense evacuarint, alioquin sani. Multum hic pendet ab ætate et

etate et constitutione singulorum hominum, et a genere
the age and constitution of the individual persons, and upon the kind
 cibi quo utuntur.
of food which they use.

661. Tubus intestinorum primo, deinde totum corpus
The tube of the intestines first, afterwards the whole body
 afficitur ab alvo astricta diu. Ventriculus habet se
is affected from the belly being bound a long time. The stomach has itself
 male, concoquitur male, totum corpus præter solitum excitatur, et
badly, it is digested badly, the whole body is unusually excited, and
 calet, quod est imprimis notabile in febris; fortasse sanguis
grows hot, which is especially remarkable in fevers; perhaps the blood
 ipsa etiam corrumpitur, putridâ materiâ delatâ ab intestinis.
itself also is corrupted, by a putrid matter conveyed from the intestines.
 Sanguis fluit minus libere per viscera abdominis, unde
The blood flows less freely through the viscera of the abdomen, whence
 sæpe (sunt) abnormes congestiones, varices venarum, effusiones sanguinis
often irregular congestions, varices of the veins, effusions of blood
 in intestina, que profluvium ejus ex ano: quod malum
into the intestines, and a profluvium of it from the anus: which disorder
 vocatur hæmorrhoidis. Quin et intestina ipsa, distenta
is called hæmorrhoids (piles). Moreover the intestines themselves, distended
 et irritata plurimâ acri et putridâ materiâ, incitantur
and irritated with a great deal of acrid and putrid matter, are excited
 ad novos et validiores motus; qui si nequeunt superare
to new and stronger motions; which if they cannot overcome
 obstructionem, sæpe inducunt insignem dolorem, et tormina, et
the obstruction, often bring on very great pain, and gripes, and
 colicam, et ileum, et inflammationem, et gangrænam brevi
colic, and iliac passion, and inflammation, and gangrene quickly
 lethalem.
fatal.

662. Vocatur fluxus alvi, seu diarrhœa, siquando alvus,
It is called a flux of the belly, or diarrhœa, whenever the belly,
 liquidior justo, evacuatur nimis sæpe: profecto multiplex
more liquid than proper, is evacuated too often: truly a complicated
 et frequentissimum malum; aliquando primarius morbus, sæpius
and very frequent disorder; sometimes a primary disease, more often
 effectus aliorum; interdum salutaris conatus naturæ, qualem sæpe
an effect of others; sometimes a salutary effort of nature, such as it often
 decet medicum imitari, et inducere arte. Fluxus alvi
becomes the physician to imitate, and to induce by art. A flux of the belly

constitutione singulorum hominum, et a genere cibi quo utuntur.

661. Ab alvo diu astricta tubus intestinorum primo afficitur, deinde totum corpus. Ventriculus male se habet, male concoquitur, totum corpus præter solitum excitatur, et calet, quod in febris imprimis notabile est; fortasse etiam, putrida materia ab intestinis delata, sanguis ipsa corrumpitur. Sanguis minus libere per viscera abdominis fluit; unde sæpe congestiones abnormes, varices venarum, sanguinis effusiones in intestina, ejusque profluvium ex ano: quod malum hæmorrhoidis vocatur.

Quin et intestina ipsa, plurima materia acri et putrida distenta et irritata, ad novos et validiores motus incitantur; qui, si obstructionem superare nequeunt, insignem dolorem sæpe inducunt, et tormina, et colicam, et ileum, et inflammationem, et gangrænam brevi lethalem.

662. Alvi fluxus seu diarrhœa vocatur, siquando alvus liquidior justo nimis sæpe evacuatur: multiplex profecto, et frequentissimum malum; aliquando primarius morbus, sæpius aliorum effectus; interdum salutaris naturæ conatus, qualem medicum sæpe decet imitari, et arte inducere. Quibusdam hominibus, præ-

est familiaris quibusdam hominibus, præsertim infantibus; et hi
is common to some men, especially to infants; and the latter
 sane solent pati multum ab astrictâ alvo.
indeed are accustomed to suffer much from a bound belly.

663. Oritur a variis causis: imprimis, quovis acri recepto
It arises from various causes: first of all, any acrid thing received
 in corpus, aut genito in intestinis, corruptione, cum acidâ
into the body, or generated in the intestines, corruption, as well acid
 tum putridâ, alimentariæ massæ, aut felle abundante prætersolitum
as putrid, of the alimentary mass, or the bile abounding unusually
 aut acri, aut sanguine vel pure effusis in intestinis,
(abundant) or acrid, or (from) blood or pus effused in the intestines,
 que intestinis ipsis erosis, vel orbatis proprio muco,
and the intestines themselves corroded, or deprived of their proper mucus,
 vel ab humoribus pulsis a superficie corporis que directis
or from the fluids being driven from the surface of the body and directed
 versus internas partes, veluti a frigore, præsertim admoto
towards the internal parts, as by cold, especially (when) applied
 pedibus; vel a generali corruptione corporis, ut in phthysi,
to the feet; or from a general destruction of the frame, as in phthisis,
 hecticâ febre, vel putridâ febre, vel scorbuto, imprimis sub finem
hectic fever, or putrid fever; or in scurvy, especially towards the close
 istorum morborum. Fluxus alvi, aliquando salutaris in febribus,
of those diseases. A flux of the belly, sometimes salutary in fevers,
 vel penitus solvit morbum, vel reddit eum mitiorem, vero
either entirely removes the disease, or renders it milder; but
 sæpius juvat nihil, que potius exhaurit vires ægri,
more often it assists in no way, and rather exhausts the strength of the patient,
 ducens originem a putredine, si neque remedia idonea ad
drawing its origin from putridity, if neither remedies proper for
 corrigendam hanc fuerint tempestive data, neque evacuantia remedia
correcting this have been seasonably given, nor evacuating remedies
 adhibita, qualia convenirent ad liberanda ventriculum et intestina
administered, such as would suit for freeing the stomach and intestines
 plurimâ corruptâ materiâ quâ solent
from the great deal of corrupted matter with which they are accustomed
 gravari in morbis istiusmodi. Denique, sunt qui habent
to be oppressed in diseases of that kind. In fine, there are they who have
 intestina adeo debilia et mobilia, ut plectantur vehemente
the intestines so weak and irritable, that they are seized with a severe
 fluxu alvi, a levissimâ causâ, veluti frigore suscepto,
flux of the belly, from the slightest cause, as from cold being caught,

sertim infantibus, alvi fluxus familiaris est; et hi sane ab astricta alvo multum pati solent.

663. Oritur a variis causis: acri imprimis quovis in corpus recepto, aut in intestinis genito, massæ alimentariæ corruptione, cum acidâ tum putridâ, aut felle præter solitum abundante aut acri, aut sanguine vel pure in intestinis effusis, ipsisque intestinis erosis, vel proprio muco orbatis, vel ab humoribus a superficie corporis pulsis partesque internas versus directis, veluti a frigore, præsertim pedibus admoto; vel a generali corporis corruptione, ut in phthysi, febre hecticâ, vel febre putridâ, vel scorbuto, imprimis sub finem isto-

rum morborum. In febribus aliquando salutaris alvi fluxus vel penitus solvit morbum, vel eum mitiorem reddit; sæpius vero nihil juvat, viresque ægri potius exhaurit, a putredine originem ducens, si neque idonea ad hanc corrigendam tempestive data fuerint remedia, neque evacuantia remedia adhibita, qualia convenirent ad ventriculum et intestina liberanda plurima materia corrupta, qua in istiusmodi morbis gravari solent. Denique, sunt qui habent intestina adeo debilia et mobilia (363), ut a levissima causa, veluti frigore suscepto, aut animo præter solitum commoto, vehemente alvi fluxu plectantur. Postremo,

aut animo præter solitum commoto. Postremo, qualiscunque fuerit
or the mind unusually disturbed. Lastly, whatever may have been
 prima origo mali, si perstiterit diu reddit viscera
the first origin of the disorder, if it should continue long it renders the bowels
 adeo debilia et irritabilia, ut morbus, quamvis sæpe depulsus,
so weak and irritable, that the disease, although often driven off,
 non secus ac multi alii morbi solent, recurrat levis-
in like manner as many other diseases are accustomed, returns from the
 simis causis, neque semper detegendis.
slightest causes, nor always to be detected.

664. Hinc patet ratio vel sistendi vel levandi
Hence is laid open the means either of stopping or of relieving
 morbi, evacuantibus, diluentibus, glutinosis, gummosis medicamentibus,
the disease, by evacuating, by diluting, by glutinous, by gummy medicines,
 quæ corrigunt, interdum acorem, interdum putredinem, opio,
which correct, sometimes acidity, sometimes putrescency, by opium,
 astringentibus, aut calidiorè aère aut vestitu, vel demum
by astringing (remedies), or warmer air or clothing, or finally
 sudore excitato arte.
by sweat excited by art.

665. Fluxus alvi nocet multum, imprimis nutrimento corporis
The flux of the belly hurts much, first of all by the nutriment of the body
 impedito ob pravam concoctionem cibi, (nam ventriculus
being impeded because of the bad digestion of the food, (for the stomach
 fere laborat,) que massam alimentorum transeuntem tam subito
generally suffers,) and the mass of the aliments passing so suddenly
 per viscera, ut neque possit concoqui, neque (possit) nutri-
through the viscera, that neither can it be digested, nor can the nutri-
 mentum ex eâ sorberi rite per lactea vasa, ut
ment from it be absorbed properly by the lacteal vessels, that
 recipiatur in sanguinem.
it may be received (so as to be received) into the blood.

666. Præterea, vehemens exinanitio istiusmodi nocet, scilicet corpore
Besides, violent evacuation of that sort hurts, namely by the body
 exhausto profluvio, quod detrahat multum nutrientis
being exhausted by the profluvio, which takes away much of the nutriment
 inateriæ e sanguine; neque profecto massa sola alimentorum
matter from the blood; nor indeed (is) the mass alone of the aliments
 excernitur citius justo, sed simul magna copia
excreted more quickly than proper, but at the same time a great abundance
 humorum qui secernuntur in intestinis. Quin et totum corpus
of the fluids which are secreted in the intestines. Moreover the whole body

qualiscunque prima origo mali fuerit, si diu perstiterit, viscera adeo debilia et irritabilia reddît, ut morbus, quamvis sæpe depulsus, levissimis, neque semper detegendis causis recurrat, non secus ac multi alii morbi solent (386).

664. Hinc ratio patet morbi vel sistendi vel sublevandi, medicamentis evacuantibus, diluentibus, glutinosis, gummosis, interdum quæ acorem, interdum quæ putredinem corrigunt, opio, astringentibus, aut aère aut vestitu calidiorè, vel sudore demum arte excitato.

665. Nocet multum alvi fluxus, impedito imprimis nutrimento corporis ob pravam cibi

concoctionem (nam ventriculus fere laborat), massamque alimentorum tam subito per viscera transeuntem, ut neque concoqui possit, neque nutrimentum ex ea per vasa lactea rite sorberi, ut in sanguinem recipiatur.

666. Nocet præterea vehemens istiusmodi exinanitio, exhausto scilicet corpore profluvio, quod multum materiæ nutrientis e sanguine detrahat; neque profecto sola alimentorum massa citius justo excernitur, sed magna simul copia humorum qui in intestinis secernuntur. Quin et totum corpus intestinorum debilitatem brevi participat.

brevi participat debilitatem intestinorum.
shortly participates the debility of the intestines.

667. Aliquando vehemens et diuturnus fluxus alvi ingravescit
Sometimes a violent and continued flux of the belly increases
 eousque ut cibi transeant per corpus parum vel nihil
to that pitch that the aliments pass through the body little or not at all
 mutati: quod genus mali vocatur Lienteria. Chylus ipse,
changed: which kind of disease is called Lientery. The chyle itself,
 instar lactis, nonnunquam, quamvis raro, a simili causa, excernitur
like milk, sometimes, though rarely, from a similar cause, is excreted
 cum stercore, vel ab mesentericis glandulis que aliis viis, quibus
with the feces, or from the mesenteric glands and other ways, by which
 itur, (impersonaliter) in sanguinem obstructis. Hoc malum
it is gone, (there is a passage) into the blood being obstructed. This disease
 vocatur cæliacus fluxus.
is called the cæliac flux.

668. Est morbus cui nomen Dysenteria imponitur, ubi
There is a disease to which the name Dysentery is given, where (in which)
 immania tormina ventris urgent, et frequens cupiditas desi-
dreadful gripings of the belly urge, and a frequent desire of going
 dendii adest, et inanes conatus fiunt, qui fere excernunt
to stool is present, and vain efforts are made, which mostly excrete
 nihil præter mucum intestinorum vel paucillum sanguinis; magnâ
nothing except the mucus of the intestines or a little (of) blood; great
 debilitate et putredine et febre sæpe comitantibus. Videtur oriri
debility and putridity and fever often accompanying. It seems to arise
 a inferiore parte intestinorum constrictâ, et quodammodo
from the lower part of the intestines being constricted, and in some degree
 inflammatâ; quo fit (quod) hæc, (intestina) quamvis multum
inflamed; whence it happens that they, although greatly
 irritata, possint demittere fere nihil. Neque morbus
irritated, can send down (void) almost nothing. Nor (is) the disease
 faciliè solvitur priusquam alvus fuerit probe purgata idoneis
easily resolved before that the belly have been well purged by suitable
 medicamentis.
medicines.

669. Frequens, inexplebilis, inanis cupiditas desidendi, cum magno
A frequent, insatiable, fruitless desire of going to stool, with great
 nixu, qui, tamen, exprimat omnino parum vocatur
straining, which, however, forces out very little (nothing at all) is called
 tenesmus. Omnis irritatio, vel intestini recti ipsiûs,
tenesmus. Every (kind of) irritation, either of the intestine rectum itself,

667. Aliquando alvi fluxus vehemens et diuturnus eo usque ingravescit, ut cibi parum vel nihil mutati per corpus transeant: quod mali genus Lienteria vocatur. Nonnunquam, quamvis raro, a simili causa, vel ab obstructis glandulis mesentericis aliisque viis quibus in sanguinem itur, chylus ipse, instar lactis, cum stercore excernitur. Malum hoc fluxus cæliacus vocatur.

668. Morbus est cui nomen Dysenteria imponitur, ubi immania tormina ventris urgeat, et frequens desidendi cupiditas adest, et conatus inanes fiunt, qui nihil fere præter intestinorum

mucum vel paucillum sanguinis excernunt; magna debilitate, et sæpe putredine et febre comitantibus. Videtur oriri a constricta parte intestinorum, et quodammodo inflammata, inferiore; quo fit hæc, quamvis multum irritata, nihil fere demittere possint. Neque facile prius solvitur morbus, quam idoneis medicamentis alvus probe purgata fuerit.

669. Tenesmus vocatur frequens, inexplebilis, inanis desidendi cupiditas, cum magno nixu, qui tamen parum omnino exprimat. Irritatio omnis, vel ipsius intestini recti, vel partium

vel vicinarum partium, quædam acria recepta in corpus, or of the neighbouring parts, certain acrids received into the body, fortiora medicamenta, imprimis aloë, quæ solet solvi stronger medicines, especially aloes, which is accustomed to be dissolved omnino lentè, et pervenire usque ad intestinum rectum parum very slowly, and to arrive even at the intestinum rectum little mutata, gravior et pertinacior fluxus alvi, dysenteria, changed, more severe and more obstinate flux of the belly (diarrhœa), dysentery, hæmorrhoids, vermes, fistula ani, calculus, vel ulcus in vesicâ, hæmorrhoids, worms, fistula of the anus, calculus, or ulcer in the bladder, vel in urethrâ, &c. sæpe inducunt tenesmus. Sæpe nocet haud or in the urethra, &c. often bring on tenesmus. It often hurts not parum, cum insigni molestiâ quam facessit ægro, tum a little, as well by the great trouble which it causes to the patient, as viribus ejûs exhaustis, frequente et inani nixu, by the strength of him being exhausted, by the frequent and fruitless straining, tum quoque prolapsu ani inducto ipso nixu, et as also by prolapsus ani being brought on by that straining, and gravi irritatione communicatâ cum vicinis partibus, by the severe irritation communicated to the neighbouring parts, vesicâ, &c. the bladder, &c.

670. Motus intestinorum sæpe observatur inversus, ita ut (intestina)
The motion of the intestines often is observed inverted, so that

propellant res quas continent, ab inferioribus ad superiores they propel the matters which they contain, from the inferior to the superior partes. Inversio hujûsmodi, quamvis levior, subest, siquando aër, parts. An inversion of this sort, although slighter, exists, whenever air, extricatus per minus sanam concoctionem, volvitur in abdomine, disengaged during (a not) an unhealthy digestion, is rolled in the abdomen, surgit ad ventriculum, vel incipiens in ventriculo, aperit superius rises to the stomach, or beginning in the stomach, opens the upper ostium ejûs, et expellitur per gulam et os, inverso aperture of it, and is expelled by the œsophagus and mouth, by the inverted motu ventriculi, quod vocatur ructus. motion of the stomach, which is called belching (eructation).

671. Vero gravior affectio istiusmodi paulatim rejicit, non But a more severe affection of the same sort by degrees rejects, not modo aëra, sed crudos et corruptos cibos, vel quicquid demum only air, but crude and corrupted food, or whatever indeed fuerit in stomacho. Sunt quibus talis affectio est familiaris. shall be in the stomach. There are to whom such an affection is common.

vicinarum, acria quædam in corpus recepta, medicamenta fortiora, aloë imprimis, quæ lente omnino solvi solet, et ad rectum intestinum usque parum mutata pervenire, alvi fluxus gravior et pertinacior, dysenteria, hæmorrhoids, vermes, fistula ani, calculus, vel ulcus in vesica, vel in urethra, &c. tenesmus sæpe inducunt. Haud parum sæpe nocet, cum insigni quam ægro facessit molestia tum viribus ejûs exhaustis, frequente et inani nixu, tum quoque isto nixu, prolapsu ani inducto, et gravi irritatione cum partibus vicinis, vesica, &c. communicata.

670. Inversus intestinorum motus sæpe observatur, ita ut res quas continent ab inferioribus ad superiores partes propellant. Hujûsmodi inversio, quamvis levior, subest, siquando aër, per concoctionem minus sanam extricatus, in abdomine volvitur, ad ventriculum surgit, vel in ventriculo incipiens, ostium ejûs superius aperit, et inverso ventriculi motu per gulam et os expellitur, quod ructus vocatur.
671. Gravior vero istiusmodi affectio, non aëra modo, sed cibos crudos et corruptos, vel quicquid demum in stomacho fuerit, paulatim rejicit. Sunt quibus talis affectio familiaris est.

Sunt qui norunt imitari, et inducere eundem motum ad
There are who know how to imitate, and to bring on the same motion at
 arbitrium, levi conatu, et sic ruminari instar bovis.
pleasure, by a slight effort, and so to ruminate like an ox.

672. Infantes facile et subito, ut videtur, evomunt lac quod
Infants easily and suddenly, as it seems, vomit up the milk which
 suxerint nimium, simili modo, sine molestiâ aut
they have sucked to excess, in a similar manner, without trouble or
 gravi nixu.
great effort.

673. Vero ventriculus male affectus, sæpissime dat ingratisimum
But the stomach badly affected, very often produces a very unpleasant
 sensum, quem vocamus nauseam. Vertigo sæpe comitatur hanc.
sensation, which we call nausea. Vertigo often accompanies this.

Nauseâ ingravescente, non modo motus ventriculi est inversus,
The nausea increasing, not only the motion of the stomach is inverted,
 sed sæpe (motus) magnæ partis intestini quod est proximum;
but often of a great portion of the intestine which is next (it);
 et tandem, transverso septo et musculis abdominis, rap-
and at length, the transverse septum and muscles of the abdomen, being
 tis in motum, per consensum qui intercedit inter ea
hurried (excited) into motion, by the consent which intervenes between them
 et ventriculum, totum abdomen, et imprimis ventriculum,
and the stomach, the whole abdomen, and especially the stomach,
 comprimuntur veluti in prælo; quo auxilio, quicquid fuit in
are compressed as if in a press; by which assistance, whatever was in
 eo tandem rejicitur per gulam et os insigni vi.
it at length is rejected through the œsophagus and mouth with great force.
 Magnus fluxus humorum oris solet præcedere vomitum;
A great flow of the fluids of the mouth is accustomed to precede vomiting;
 interdum, et, tremor inferioris labii; que plena et valida
sometimes, also, a trembling of the lower lip; and a deep and strong
 expiratio comitatur eum, quâ (expiratione) cavetur (ut) ne quid
expiration accompanies it, by which it is provided that nothing
 intret laryngem et asperam arteriam.
enters the larynx and aspera arteria.

674. Nausea et vomitus, frequentissima mala, agnoscunt fere
Nausea and vomiting, very frequent disorders, acknowledge almost
 innumeras causas, tum quæ afficiunt ventriculum ipsum,
innumerable causes, as well (those) which affect the stomach itself,
 tum quæ (afficiunt) remotissimas partes corporis; irritationes
as (those) which (affect) the remotest parts of the body; the irritations

Sunt qui eundem motum, levi conatu, ad arbitrium imitari et inducere norunt, et sic instar bovis ruminari.

672. Simili, ut videtur, modo, sine molestia aut gravi nixu, infantes lac, quod nimium suxerunt, facile et subito evomunt.

673. Sæpissime vero ventriculus male affectus ingratisimum sensum dat, quem nauseam vocamus. Hanc sæpe vertigo comitatur (267, 271). Ingravescente nausea, non modo motus ventriculi inversus est, sed sæpe magnæ partis intestini quod proximum est; et tandem, septo transverso, et musculis abdominis, per consen-

sum qui ea inter et ventriculum intercedit, in motum raptis, abdomen totum, et ventriculus imprimis, veluti in prælo comprimuntur; quo tandem auxilio, quicquid in eo fuit insigni vi per gulam et os rejicitur. Vomitus præcedere solet magnus humorum oris fluxus, et interdum labii inferioris tremor; eumque comitatur plena et valida expiratio, qua cavetur, ne quid laryngem et asperam arteriam intret.

674. Nausea et vomitus, frequentissima mala, innumeras fere causas agnoscunt, tum quæ ventriculum ipsum afficiunt, tum quæ remotissimas corporis partes; quarum irritationes,

vel affectiones quarum (sc. partium), qualescunque fuerint, multum
 or affections of which, whatever kind they may be, greatly
 afficiunt ventriculum, secundum leges consensûs.
 affect the stomach, according to the laws of sympathy.

675. Igitur omnis Irritatio ventriculi, distentio, veluti
 Therefore every (kind of) irritation of the stomach, distension, as
 ab onere crudi cibi, prava concoctio, obstructio circa inferius
 by a load of crude food, depraved digestion, obstruction about the lower
 ostium, omnia acrida recepta in eum, morbi jecoris, intestinorum,
 orifice, all acrids received into it, diseases of the liver, of the intestines,
 renum, uteri, capitis, pedum, universæ cutis, et sane universi
 kidneys, uterus, head, feet, of the whole skin, and indeed of the whole
 corporis; inflammatio, calculus, regius morbus, scirrhus, apoplezia, con-
 body; inflammation, calculus, jaundice, scirrhus, apoplexy, com-
 pressio, fractura calvariæ, vertigo, syncope, immanis dolor, podagra,
 pression, fracture of the skull, vertigo, syncope, intense pain, gout,
 imprimis repulsa, febres, affectus animi, demum,
 especially the repelled (retrocedent), fevers, affections of the mind, lastly,
 imagines vel descriptiones fastidiendæ, sæpe inducunt nauseam et vomitum.
 notions or descriptions to be loathed, often bring on nausea and vomiting.

676. Ergo ratio erit in promptu, cur malum adeo
 Therefore the reason will be at hand, why (it is) a disorder so
 frequens, sæpe primarius morbus, sæpius effectus aliorum morborum;
 frequent, often a primary disease, more often an effect of other diseases;
 cur sæpe salutaris conatus naturæ, promovendus summa ope
 why often a salutary effort of nature, to be promoted by the utmost effort
 medici; vero interdum prorsus inutilis et ineptus, que
 of the physician; but sometimes altogether useless and unsuited, and
 ideo compescendus quamprimum, veluti in febris, ubi
 therefore to be restrained as soon as possible, as in fevers, where (in
 aliquando solvit morbum, vero sæpius est effectus
 which) sometimes it resolves the disease, but more often it is an effect
 et pars ejus, que intendit eundem, vel saltem multum frangit
 and part of it, and increases the same, or at least greatly breaks down
 vires ægri.
 the strength of the patient.

677. Vomitus etiam, vel nausea, sæpe prodest non modo ventriculo
 Vomiting also, or nausea, often benefits not only the stomach
 ipsi, quem liberet insigni onere, sed quoque aliis partibus vel
 itself, which it relieves from a great load, but also other parts or
 denique universo corpori. Promovet multum sputum, sicubi pulmo
 even the whole body. It promotes much spitting, as when the lung

vel affectiones qualescunque fuerint, secundum consensum leges, ventriculum multum afficiunt. 675. Ventriculi igitur irritatio omnia, distentio, veluti ab onere cibi crudi, prava concoctio, obstructio circa ostium inferius, acrida omnia in eum recepta, morbi jecoris, intestinorum, renum, uteri, capitis, pedum, universæ cutis, et sane universi corporis; inflammatio, calculus, morbus regius, scirrhus, apoplezia, compressio, fractura calvariæ, vertigo, syncope, dolor immanis, podagra, repulsa imprimis, febres, animi affectus, imagines demum vel descriptiones fastidiendæ, nauseam et vomitum sæpe inducunt.

676. Ratio ergo in promptu erit, cur malum adeo frequens, sæpe primarius morbus, sæpius aliorum morborum effectus; cur sæpe salutaris naturæ conatus, summa medici ope promovendus; interdum vero inutilis prorsus et ineptus, ideoque compescendus quamprimum, veluti in febris, ubi aliquando morbum solvit, sæpius vero ejus effectus et pars est, eundemque intendit, vel saltem ægri vires multum frangit. 677. Prodest etiam vomitus, vel nausea, sæpe non modo ventriculo ipsi, quem onere insigni liberet, sed aliis quoque partibus, vel denique universo corpori. Sputum multum promovet, sicubi pulmo vel suo gravatus fuerit muco vel

fuerit gravatus, vel suo muco vel sanguine, sero, pure, shall be oppressed, either by its own mucus or blood, serum, pus, aquâ; promovet sudorem, et quoque liberam distributionem sanguinis water; it promotes sweating, and also the free distribution of the blood ad superficiem corporis, partim fortasse, magno nixu qui to the surface of the body, partly perhaps, by the great effort which comitatur vomitum, magis tamen, ut videtur, mirabili consensu accompanies vomiting, more however, as it seems, by the wonderful sympathy qui intercedit inter cutem et ventriculum. Hinc vomitus which exists between the skin and the stomach. Hence vomiting (is) præstantissimum remedium in multis morbis. the most immediate remedy in many diseases.

678. Aliquando nocet, si fuerit vel nimis vehemens, vel nimis
Sometimes it hurts, if it should be either too violent, or too frequens; partim ventriculo debilitato et facto mobiliore, frequent; partly by the stomach being debilitated and rendered more irritable, qui nequit tolerare impune vehementem et abnormem motum; which cannot bear with impunity a violent and irregular motion; partim violento nixu, qui fatigat ægrum, et inducit partly by the violent effort, which wearies the patient, and brings on prolapsum, aut herniam, aut abortum, aut profluvia sanguinis, vel prolapsus, or hernia, or abortion, or profluvia of blood, either ab ventriculo ipso, vel denique a pulmone, aut capite, from the stomach itself, or indeed from the lungs, or head, propter longam et validam expirationem, quod, tamen, rarissime accidit. Porro, diuturnus et vehemens et frequens vomitus, seldom happens. Moreover, continued and violent and frequent vomiting, non secus ac fluxus alvi, debilitat, exhaust totum corpus, in like manner as the flow of the belly, debilitates, exhausts the whole body, et corrumpit debitam secretionem humorum ventriculi, unde and corrupts the due secretion of the fluids of the stomach, from whence prava concoctio cibi, et quotquot mala profluunt ex a depraved concoction of the food, and whatever evils flow forth from eâ (prav. concoctione). it.

679. Inversus motus omnium intestinorum, ab ano usque ad
An inverted motion of all the intestines, from the anus quite to os, aliquando observatur; malum pessimi ominis, cui the mouth, sometimes is observed; a disease of the worst omen, to which nomen ileus (volvulus) plerumque datur. Oritur frequentius the name ileus (Iliac passion) generally is given. It arises very frequently

sanguine, sero, pure, aqua; et sudorem quoque, liberam sanguinis ad corporis superficiem distributionem promovet, partim fortasse magno nixu qui vomitum comitatur, magis tamen, ut videtur, mirabili consensu qui inter cutem et ventriculum intercedit. Hinc in multis morbis vomitus præstantissimum remedium.

678. Nocet aliquando, si vel nimis vehemens vel nimis frequens fuerit; partim debilitato et mobiliore facto ventriculo, qui vehementem et abnormem motum impune tolerare nequit; partim violento nixu, qui ægrum fatigat, et

prolapsum, aut herniam, aut abortum, aut sanguinis profluvia inducit, vel ab ipso ventriculo, vel denique a pulmone, aut capite, propter longam et validam expirationem; quod tamen rarissime accidit. Porro, vomitus diuturnus, et vehemens, et frequens, non secus ac alvi fluxus, totum corpus debilitat, exhaust, et debitam humorum ventriculi secretionem corrumpit: unde prava cibi concoctio, et quotquot ex ea profluunt mala.

679. Inversus aliquando omnium intestinorum motus, ab ano ad os usque, observatur malum pessimi ominis, cui nomen ileus ple

ab aliquâ obstructione impediēte descensum massæ alimentorum
from some obstruction preventing the descent of the mass of the aliments
 vel stercoris, spasmō, schirro, inflammatione intestinorum, duritie
or of the fæces, spasm, schirrus, inflammation of the intestines, hardness
 alvi, inducente colicam, cujus ileus est pars et
of the belly (costiveness), bringing on colic, of which ileus is a part and
 effectus. Vero perfectissimus ileus aliquando observatus est cum
effect. But the most complete ileus sometimes has been observed when
 nulla obstructio fuisset in intestinis; et sic lotiones
no obstruction had been (existed) in the intestines; and thus lotions
 infusæ per anum redditæ sunt interdum per os, et
injected by the anus have been returned sometimes by the mouth, and
 ægri nihilominus, post plures dies talis morbi, tandem
the patients notwithstanding, after several days of such a disease, at length
 convaluerunt.
have recovered.

680. Ileus plerumque incipit torminibus ventris, nausæ, vomitu,
Ileus for the most part begins with gripes of the belly, nausea, vomiting,
 frequente ructu, nimirum aëre ascendente primum; postea
frequent eructation, that is the air ascending first; afterward
 æger eructat plurimam fuscam, atram, biliosam, corruptam
the patient belches a great deal (of) brown, black, bilious, corrupted
 materiam: tandem evomit pleno ore, cum
matter: at length he vomits with a full mouth (completely), with
 frequente et valido nixu, et immani dolore viscerum: alvus
a frequent and strong effort, and severe pain of the bowels: the belly
 simul pertinaciter astricta, transmittit nihil; neque ven-
at the same time obstinately bound, transmits nothing: nor does the
 triculus, agitatus importunissimâ nausæ et vomitu, fere
stomach, disturbed with the most urgent nausea and vomiting, commonly
 retinet quidquam. Vires ægri collabuntur multum et
retain anything. The strength of the patient collapses much and
 subito, et ipse (æger) versatur in summo periculo; nam
suddenly, and himself is involved in very great danger; for
 morbus solet brevi inducere inflammationem, et hæc
the disease is accustomed quickly to bring on inflammation, and this
 (inflam.) gangrænam.
(latter) gangrene.

681. Profecto levior affectio istiusmodi, scilicet, inversus motus
Indeed a slighter affection of this sort, that is, an inverted motion
 superioris partis intestini, accidit ab omni vehemente et
of the upper portion of the intestine, happens from all violent and

ramque datur. Oritur frequentius ab obstructio-
 ne aliqua massæ alimentorum vel stercoris
 descensum impediēte; *spasmō, schirro*, inflam-
 matione intestinorum, alvi duritie *colicam* in-
 ducente, cujus *ileus* pars est et effectus. Ali-
 quando vero observatus est perfectissimus *ileus*,
 cum nulla in intestinis obstructio fuisset; et
 sic lotiones interdum per anum infusæ per os
 redditæ sunt, et ægri nihilominus, post plures
 dies talis morbi, tandem convaluerunt.

680. Incipit plerumque *ileus* torminibus ven-
 tris, nausæ, vomitu, frequente ructu, aëre
 nimirum primum ascendente; postea plurimam

materiam fuscam, atram, biliosam, corruptam,
 æger eructat: tandem pleno ore emovit, cum
 frequente et valido nixu, et immani viscerum
 dolore: alvus simul pertinaciter astricta nihil
 transmittit, neque ventriculus, importunissima
 nausæ et vomitu agitatus, quidquam fere reti-
 net. Vires ægri multum et subito collabuntur,
 et ipse in summo periculo versatur; nam mor-
 bus brevi solet inflammationem, et hæc gan-
 grænam inducere.

681. Levior profecto istiusmodi affectio, su-
 perioris scilicet intestini partis motus inversus,
 ab omni vomitu vehemente et diuturno accidit,

diuturno vomitu, veluti a maritimâ jactatione, vel ab ninis
continued vomiting, as from sea tossing, or from a too
 valido vomitorio medicamento hausto; enim, plurimum
powerful emetic medicine being swallowed; moreover, a great deal of
 fel sæpe ascendit hoc modo in ventriculum ab intestino,
bile often ascends by this means into the stomach from the intestine,
 et tandem vomitur ex ore.
and at length is vomited from the mouth.

682. Ingens vomitus et fluxus alvi simul vocatur
A great vomiting and flux of the belly at the same time, is called
 cholera. Oritur a validâ irritatione tubi intestinorum, ubi
cholera. It arises from severe irritation of the tube of the intestines, when
 est nulla obstructio in eo; plerumque a nimio, aut nimis
there is no obstruction in it; generally from too much, or too
 acri felle; unde habet nomen: quamvis similis affectio oriatur
acid bile; whence it has its name: although a similar affection may arise
 ab aliis acribus quoque, veluti nimis forti medicamento, aut
from other acrids also, as a too powerful medicine, or
 maturis fructibus assumptis nimia copiâ. Sæpe violentissimum
ripe fruits (being) taken in excessive quantity. Often a very violent
 malum, valde debilitat, nonnunquam, nisi idonea remedia fuerint
disorder, greatly debilitates, sometimes, unless proper remedies have been
 adhibita, brevi extinguit, ægrum.
applied, quickly destroys, the patient.

CAP. XX.

CHAP. XX.

De secretione et excretionem; que varietatibus et vitiis earum.
 Of secretion and excretion; and the varieties and disorders of them.

683. Plurimi humores, diversi a sanguine, diversi inter
Many fluids, differing from the blood, differing among
 se, secerantur a massâ sanguinis qualis
themselves (from each other), are secreted from the mass of blood such as
 diffunditur per aortam ad omnes partes corporis; alii quorum
is distributed by the aorta to all parts of the body; some of which
 inserviunt variis usibus in corpore ipso, alii, superflui vel
serve to various uses in the body itself, others, superfluous or

veluti a jactatione maritima, vel ab hausto
 nimis valido vomitorio medicamento; sæpe
 enim plurimum fel hoc modo ab intestino in
 ventriculum ascendit, et tandem ex ore vomitur.

682. Ingens simul vomitus et alvi fluxus
 Cholera vocatur. Oritur a valida tubi intesti-
 norum irritatione, ubi nulla obstructio in eo
 est; plerumque a felle nimio, aut nimis acri;
 unde nomen habet: Quamvis ab aliis quoque
 acribus similis affectio oriatur, veluti medica-
 mento nimis forti, aut fructibus maturis nimia

copia assumptis. Malum sæpe violentissimum,
 ægrum valde debilitat; nonnunquam, nisi
 idonea adhibita fuerint remedia, brevi extin-
 guit.

CAP. XX.—*De secretionem et excretionem; earumque varietatibus et vitiis.*

683. A MASSA sanguinis qualis per aortam ad
 omnes corporis partes diffunditur, plurimi hu-
 mores, diversi a sanguine, diversi inter se,
 secerantur (8); quorum alii variis in ipso
 corpore usibus inserviunt, alii, superflui vel

noxii, expelluntur assidue ex eodem, alii demum, sunt
noxious, are expelled constantly from the same, others finally, are
 necessarii ad propagandum genus que alendum novum animal,
necessary to propagate the race (species) and support the new animal,
 quum primo editur in lucem.
when first it is put forth into the light.

684. Saliva, que alii humores oris, succus ventriculi
The saliva, and other fluids of the mouth, the juice of the stomach
 et intestinorum, et pancreatis, fel, ille halitus qui
and of the intestines, and pancreas, the gall, that exhalation which
 irrorat atque humectat cava corporis, sive magna sive parva,
bedews and moistens the cavities of the body, whether great or small,
 adeps, sebum seu unguen cutis, mucus viarum, quas
the fat, the tallow or oily liquor of the skin, the mucus of the passages, which
 aër, vel cibus, vel urina debent subire, lachrymæ, aqueus humor
the air, or food, or urine ought to pass, the tears, aqueous humour
 oculorum, et cerumen, ut vocatur, aurium, pertinent ad
of the eyes, and the cerumen (wax), as it is called, of the ears, belong to
 primum genus.
the first kind (class).

685. Ad secundum genus pertinet halitus pulmonis, quamvis
To the second class belongs the exhalation of the lung, although
 hic sane derivetur ab pulmonali arteriâ potius quam ab
this indeed is derived from the pulmonary artery rather than from
 aortâ, et halitus cutis, et sudor, et urina.
the aorta, also the exhalation of the skin, and the sweat, and the urine.

686. Demum, ad tertium genus pertinent masculinum semen, lacteus
Lastly, to the third class belong the male semen, the milky
 liquor prostatæ glandulæ, liquor bullarum, seu ovarum, quæ
liquor of the prostate gland, the liquor of the bullæ, or ova, which
 reperiuntur in ovariis fœminarum, fortasse liquor amnii, que
are found in the ovaries of women, perhaps the liquor amnii, and
 alii humores fœminæ quotquot conferunt ad generationem; et
the other fluids of the woman whatever contribute to generation; and
 demum lac mammarum, quod copiosissimum (adverb. red.)
indeed the milk of the breasts, which is very abundantly
 secernitur certo tempore post partum.
secreted at a certain time after parturition.

687. Secreti humores sæpe dividuntur ab auctoribus, et rediguntur
The secreted fluids often are divided by authors, and are reduced
 in classes, secundum qualitates ipsorum.
into classes, according to the qualities of them.

noxii, ex eodem assidue expelluntur, alii demum, ad genus propagandum, novumque animal, quum primo in lucem editur, alendum, necessarii sunt.

684. Ad primum genus pertinent saliva, alii- que oris humores, succus ventriculi, et intestinorum, et pancreatis, fel, halitus ille qui cava corporis, sive magna, sive parva, irrorat atque humectat, adeps, sebum seu unguen cutis, mucus viarum, quas aër, vel cibus, vel urina, subire debent, lachrymæ, humor aqueus oculorum, et cerumen, ut vocatur, aurium.

685. Ad secundum genus pertinet halitus pulmonis, quamvis hic sane ab arteria pulmo-

nali potius quam ab aorta derivetur, et halitus cutis, et sudor, et urina.

686. Ad tertium demum genus pertinent semen masculinum, liquor lacteus glandulæ prostatæ, liquor bullarum seu ovarum quæ in ovariis fœminarum reperiuntur, liquor amnii fortasse, aliique humores quotquot fœminæ ad generationem conferunt; et demum lac mammarum, quod certo post partum tempore scernitur copiosissimum.

687. Dividuntur ab auctoribus sæpe humores secreti, et in classes rediguntur secundum ipsorum qualitates.

688. Halitus pulmonis que cutis, urina, saliva, succus
The vapour of the lungs and skin, the urine, saliva, juice
pancreatis, lachrymæ, aquosus humor oculi, dicuntur aquosi
of the pancreas, tears, aqueous humour of the eye, are called the watery
humores. Mucosi humores sunt tenaces, et quasi gummosi,
fluids. The mucous humours are tenacious, and as it were gummy,
qui oblinunt et defendunt vias quas aër, vel cibus, vel
which anoint and defend the passages which the air, or food, or
urina subeunt, ab omni acri. Semen, et lacteus humor
urine pass through, from every acrid thing. The semen, and milky humour
prostatæ glandulæ annumerantur quoque his. Humores vo-
of the prostate gland are enumerated also with these. The fluids are
cantur glutinosi, qui irrorant varia cava corporis, et
called glutinous, which bedew the various cavities of the body, and
liquor amnii, et fortasse (liquor) ovarum, quæ reperiuntur
the liquor amnii, and perhaps of the ova, which are found
in ovariiis mulierum. Oleosi humores, præter adipem, et medullam
in the ovaria of women. The oily fluids, besides the fat, and the marrow
ossium, dicuntur sebum seu unguen cutis, et fel et
of the bones, are called the tallow or fat of the skin, and the gall and
cerumen aurium: scilicet quæ continent multum olei, et
the wax of the ears: as being things which contain much (of) oil, and
probe siccata inflammantur facile et vehementer.
well dried are inflamed easily and violently (inflammable).

689. Quin et hi humores sæpe miscentur, nec obtinentur facile
Moreover these fluids often are mixed, nor are they obtained easily
sinceri. Os madet salivâ et muco simul;
pure. The mouth is moist with saliva and mucus at the same time;
nares muco et lachrymis; sudor constat ex aquoso
the nostrils with mucus and tears; sweat consists of the watery
halitu cutis, et adipe et unguine ejûsdem, et succus
vapour of the skin, and the fat and ointment of the same, and the juice
ventriculi et intestinorum, et artuum et omnium cavorum,
of the stomach and of the intestines, and joints and of all the cavities,
constat ex oleo, et muco, et glutine, et aquâ. Lac, denique,
consists of oil, and mucus, and gluten, and water. Milk, indeed,
quum primò secernitur, habet multum aquæ, olei, mucii,
when first it is secreted, has (contains) much (of) water, oil, mucus,
et glutinis, ut notissima experimenta docent. Demum, oleosi humores
and gluten, as well known experiments prove. Lastly, the oily fluids

688. Aquosi humores dicuntur halitus pulmo- nis cutisque, urina, saliva, succus *pancreatis*, lachrymæ, humor aquosus oculi. Mucosi sunt humores tenaces, et quasi gummosi, qui vias quas aër, vel cibus, vel urina, subeunt, obli- nunt, et ab omni acri defendunt. His quoque annumerantur semen et humor lacteus *glandulæ prostatæ*. Glutinosi vocantur humores qui varia corporis cava irrorant, et liquor *amnii*, et for- tasse ovarum que in *ovariis* mulierum reperiun- tur. Oleosi humores dicuntur, præter adipem et medullam ossium, sebum seu unguen cutis, et fel, et *cerumen aurium*: scilicet quæ multum

olei continent, et probe siccata facile et vehe- menter inflammantur.

689. Quin et hi humores sæpe miscentur, nec facile sinceri obtinentur. Os madet saliva simul et muco; nares muco et lachrymis; sudor ex halitu aquoso cutis, et adipe, et unguine ejus- dem constat, et succus ventriculi, et intestino- rum, et artuum, et omnium cavorum, ex oleo, et muco, et glutine, et aqua constat. Deuique, lac, quum primo seceruitur, habet multum aquæ, olei, mucii, et glutinis, ut notissima ex- perimenta docent. Ipsi demum oleosi, quum

ipsi, quum primum formantur, sunt haud parum
themselves, when first they are formed, are not a little (in no small degree)
 aquosi.
watery.

690. Porro, alia animalia habent plures humores, plerique quorum
Moreover, other animals have many fluids, most of which
 sunt similes nostris humoribus, veluti albumen ovi in
are similar to our own fluids, as the albumen (white) of the egg in
 omnibus oviparis; alii (sunt) haud parum diversi, veluti
all oviparous animals; others are not a little different, as
 acidus humor insectorum, venena apum aut serpentum, atramentum
the acid fluid of insects, the poisons of bees or serpents, the ink
 sepiæ.
(inky blood) of the cuttle fish.

691. Quidam ex secretis humoribus reperiuntur fere perfecti in
Some of the secreted fluids are found almost perfect in
 sanguine ipso, ita ut simplicissima secretio seu separatio fuerit
the blood itself, so that the most simple secretion or separation would have
 fere sat ad producendos ipsos puros et sinceros; cujûsmodi
been almost sufficient to produce them pure and unmixed; of which sort
 sunt, halitus pulmonis et cutis, saliva, succus pan-
are, the exhalation of the lungs and skin, the saliva, the juice of the pan-
 creatis, lachrymæ, aquosus humor oculi, urina, halitus
creas, the tears, the aqueous humour of the eye, the urine, the exhalation
 qui humectat omnia cava, scilicet qui constant vel ex
which moistens all the cavities, as being things which consist either of
 purâ aquâ, vel ex aquâ cum pauxillo glutinis ve salis, qualia
pure water, or of water with a little (of) gluten or salt, such as
 insunt sanguini.
are in the blood.

692. Vero alii humores sunt naturæ prorsus diversæ, neque
But other fluids are of a nature altogether different, neither
 similes sanguini ipsi, nec ullis partibus quæ reperiuntur in eo;
similar to the blood itself, nor to any parts which are found in it;
 quales sunt adeps, medulla, sebum, fel, cerumen aurium,
such are fat, marrow, sebaceous matter, gall, wax of the ears,
 mucus, et denique, semen ipsum, mirabilis humor, scatens
mucus, and lastly, the semen itself, a wonderful fluid, abounding
 minutissimis animalibus.
with very minute animals.

693. Alii denique, constant partim ex elementis, qualia reperiuntur
Others in fine, consist partly of elements, such as are found

primum formantur humores, haud parum aquosi sunt.

690. Porro, alia animalia plures humores habent, quorum plerique nostris humoribus similes sunt, veluti albumen ovi in omnibus oviparis; alii haud parum diversi, veluti humor acidus insectorum, venena apum aut serpentum, atramentum sepiæ.

691. Quidam ex humoribus secretis in ipso sanguine fere perfecti reperiuntur, ita ut simplicissima secretio seu separatio fere sat fuerit ad ipsos puros et sinceros producendos; cujûsmodi sunt, halitus pulmonis et cutis, saliva,

sucens pancreatis, lachrymæ, humor oculi aquosus, urina, halitus, qui omnia cava humectat, scilicet qui vel ex pura aqua constant, vel ex aqua cum pauxillo glutinis salisve, qualia sanguini insunt.

692. Alii vero humores diversæ prorsus naturæ sunt, neque ipsi sanguini, nec ullis quæ in eo reperiuntur partibus (492, 499) similes; quales sunt, adeps, medulla, sebum, fel, cerumen aurium, mucus, et denique semen ipsum, mirabilis humor, minutissimis animalibus scatens.

693. Alii denique constant partim ex elementis

in sanguine, vero partim ex aliis, quæ ostenduntur ægre
in the blood, but partly of others, which are shewn with difficulty
 in sanguine, veluti lac, glutinosa pars cuius, coagulo admixto,
in the blood, as milk, the glutinous part of which, rennet being mixed,
 cogitur, et præbet caseum, habet multa communia cum
is coagulated, and affords cheese, has many things (in) common with
 sero sanguinis, si hoc (sc. serum) fuerit dilutum multâ
the serum of the blood, if this should be diluted with much
 aquâ; vero nihil ostenditur in sanguine simile oleosæ parti,
water; but nothing is shewn in the blood similar to the oily part,
 et saccharo lactis, quæ præbent butyrum et serum.
and sugar of milk, which afford butter and serum.

694. Vero omnis humor jam secretus, potest resorberi plus
But every fluid already secreted, may be reabsorbed more
 minus, vel naturâ vel morbo, et
(or) less (in a greater or less degree), either by nature or from disease, and
 redire in sanguinem, que nonnihil corrumpere eundem, et tum
return into the blood, and somewhat corrupt the same, and then
 forsitan secerni rursus, vel saltem transire organa non sua.
perhaps be secreted again, or at least pass through organs not their own.

695. Hoc modo masculinum semen multorum animalium inficit
In this manner the male semen of many animals infects
 totum corpus suo fœtore, et fel repressum in regio morbo,
their whole body with its fœtor, and the bile obstructed in jaundice,
 redit in sanguinem, que facit flavam cutem, et exit e
returns into the blood, and causes the yellow skin, and goes out of
 corpore cum urinâ; et demum, urina repressa, et resumpta
the body with the urine; and lastly, the urine obstructed, and taken back
 in sanguinem, inundat totum corpus, et aliquando effunditur
into the blood, inundates the whole body, and sometimes is effused
 in cerebrum ipsum.
into the brain itself.

696. Vero exempla nondum prolata sunt cuiusvis secreti humoris
But examples have not yet been set forth of any secreted fluid
 formati in organo non suo; nam ratio humoris jam
(being) formed in an organ not its own; for the case of a fluid already
 formati, que resumpti denuo in massam sanguinis, et tandem
formed, and taken up again into the mass of the blood, and at length
 delati cum sanguine ad aliena organa, est prorsus alia (ratio).
conveyed with the blood to different organs, is wholly different.

697. Nulla ratio aut explicatio secretionis hactenus data est;
No reason or explanation of secretion hitherto has been given;

qualia in sanguine reperiuntur, partim vero ex aliis, quæ ægre in sanguine ostenduntur; veluti lac, cuius pars glutinosa, quæ admixto coagulo cogitur et caseum præbet, multa habet communia cum sero (498) sanguinis si hoc multa aqua dilutum fuerit; nihil vero in sanguine ostenditur simile parti oleosæ, et saccharo lactis, quæ butyrum et serum præbet.

694. Omnis vero humor jam secretus, vel natura, vel morbo, plus minus resorberi potest, et in sanguinem redire, eundemque nonnihil corrumpere, et tum forsitan per organa non sua rursus secerni, vel saltem transire.

695. Hoc modo semen masculinum multorum

animalium totum corpus suo fœtore inficit: et fel, in morbo regio repressum, in sanguinem redit, cutemque flavam facit, et cum urina e corpore exit; et demum, urina repressa, et in sanguinem resumpta, totum corpus inundat, et in ipsum aliquando cerebrum effunditur.

696. Nondum vero prolata sunt exempla humoris cuiusvis secreti, in organo non suo formati; nam alia prorsus ratio est humoris jam formati, inque massam sanguinis denuo resumpti, et tandem ad aliena organa cum sanguine delati.

697. Nulla secretionis ratio aut explicatio hactenus data est; neque perfectio fabrica

neque profecto est fabrica secretentium organorum hactenus
 nor truly is the structure of the secreting organs hitherto (as yet)
 satis nota; neque habent bene multæ conjecturæ quas
 sufficiently known; nor have the very many conjectures which
 medici, tum mathematici (adjective reddend.), tum chemici, propo-
 physicians, as well mathematicians (the mathematical), as the chemical, have ad-
 vuerunt de officio atque actione eorum, multum verisimilis.
 vanced about the office and action of them, much of probable (probability).

698. Secernens organum videtur formari ex vasis vehentibus
 A discerning organ seems to be formed of vessels carrying
 sanguinem, tum arteriis tum venis, hiantibus in cavum, vel
 blood, as well arteries as veins, opening into a cavity, or
 habentibus ductus continuos sibi, qui deferant secretum
 having ducts continuous with themselves, which convey the secreted
 humorem quo debet (deferri.) Tale organum, formatum in
 fluid where it ought (to be conveyed.) Such an organ, formed into
 certam figuram cum reticulatâ telâ, et obductum firmiore
 a certain figure with cellular tissue, and covered with a firmer
 membranâ ejûsdem telæ, vocatur glandula: qualia jecur, renes,
 membrane of the same tissue, is called a gland: such as the liver, kidneys,
 testes, prostata, mammæ, tonsillæ, parotidæ, et cætera organa
 testes, the prostate, the mammæ, tonsils, parotids, and the other organs
 quæ secretunt humores oris, cryptæ, seu folliculi qui
 which secrete the fluids of the mouth, the folds, or follicles which
 continent mucum aut unguen, &c. sunt. Splen quoque, et
 contain the mucus or oily liquor, &c. are. The spleen also, and
 cerebrum ipsum, propter similitudinem fabricæ, solent
 the brain itself, on account of the similarity of structure, are accustomed
 annumerari inter glandulas, seu secretentia organa; recte
 to be ranked among the glands, or secreting organs; (whether) rightly
 an secus nondum constat; neque profecto melius constat
 or otherwise is not yet determined; nor truly is it better established
 de conglobatis glandulis resorbentium vasorum, num hæ
 concerning the conglobate glands of the absorbing vessels, whether these
 quoque debeant recenseri inter secretentia organa, necne.
 also ought to be reckoned amongst the discerning organs, or not.

699. Magna copia sanguinis mittitur ad plerasque glandulas, si
 A great quantity of blood is sent to most (of the) glands, if
 fuerit comparata cum mole organi ipsius. Arteriæ
 it should be compared with the bulk of the organ itself. The arteries
 quoque secretentium organorum, et vena portarum quæ est habenda
 also of secreting organs, the vena portæ which is to be considered

organorum secretentium hactenus satis nota est; neque conjecturæ bene multæ, quas medici, tum mathematici, tum chemici, de eorum officio atque actione proposuerunt, multum verisimilis habent.

698. Organum secernens formari videtur ex vasis sanguinem vehentibus, tum arteriis tum venis, in cavum hiantibus, vel ductus continuos habentibus, qui humorem secretum quo debet deferant. Tale organum in certam figuram cum tela reticulata formatum, et firmiore ejusdem telæ membrana obductum, glandula vocatur: qualia sunt jecur, renes, testes,

prostata, mammæ, tonsillæ, parotides, et cætera quæ oris humores secretunt organa, cryptæ, seu folliculi qui mucum aut unguen continent, &c. Splen quoque, et cerebrum ipsum, propter fabricæ similitudinem, inter glandulas seu organa secretentia, annumerari solent: recte an secus nondum constat; neque profecto melius constat de glandulis conglobatis vasorum resorbentium (440, 441), num hæ quoque inter organa secretentia recenseri debeant, necne.

699. Magna copia sanguinis ad plerasque glandulas mittitur, si cum mole ipsius organi comparata fuerit. Arteriæ quoque organorum

fere pro arteriâ, sunt multo validiores quam aliæ arteriæ
almost as an artery, are (by) much stronger than the other arteries
 corporis. Autem venæ quæ respondent his, et reducunt
of the body. But the veins which correspond to them, and bring back
 sanguinem ad cor, post secretionem factam observantur
the blood to the heart, after secretion (being) made (completed) are observed
 præter solitum amplæ, tenues, laxæ, et debiles.
unusually large, thin, lax, and weak.

700. Nonnulli medici putarunt fabricam hujusmodi dari
Some physicians have supposed that a structure of this sort was given
 plerisque glandulis, potissimum hoc consilio, ut sanguis plurimus
to most of the glands, principally with this design, that the blood the most
 quam subjiçatur actioni earum, quo copiosior
possible may be subjected to the action of them, in order that a more copious
 secretio humoris fiat; ut arteriæ, præditæ insolita
secretion of fluid may be made; that the arteries, endowed with unusual
 vi, valeant eo melius ad exprimendas tenues partes massæ
power, may be able the better to press out the thin parts of the mass
 sanguinis, sive secretus humor ipse fuerit crassus sive tenuis;
of blood, whether the secreted humour itself should be thick or thin;
 et demum, ut vis arteriæ sit maxima quam, et
and finally, that the power of the artery may be the greatest possible, and
 renixus venæ quam minimus, quo secretio humoris
the resistance of the vein the least possible, that the secretion of humour
 fiat facillor, et reditus reliqui sanguinis in venas
may become easier, and the return of the remaining blood into the veins
 expeditior. Autem fidendum est (nobis) parum omnino his,
more easy and quick. But we must trust little at all in these,
 et commentis hujusmodi.
and conjectures of this kind.

701. Enim motus sanguinis est valde tardus in quibusdam secernentibus
Moreover the motion of the blood is very slow in certain secreting
 organis, veluti in jecore et testibus: in illo, nimirum, secretio
organs, as in the liver and testes: in the former, truly, the secretion
 fit a sanguine venarum; autem in his tenues arteriæ,
is made from the blood of the veins; but in the latter slender arteries,
 currentes longe, dantes multos ramos, et ipsæ nonnihil dilatatae,
running far, giving (off) many branches, and they somewhat dilated,
 et sæpe multum convolutæ, deferunt languidum flumen humoris ad
and often much convoluted, convey a languid stream of fluid to
 testes. Neque est credibile hoc fieri sine consilio,
the testes. Nor is it credible that this takes place without design,

secernentium, et vena portarum, quæ fere pro arteria habenda est, multo validiores sunt quam aliæ corporis arteriæ. Venæ autem quæ his respondent, et sanguinem post factam secretionem ad cor reducunt, præter solitum amplæ, tenues, laxæ, et debiles observantur.

700. Nonnulli medici putarunt hujusmodi fabricam dari hoc potissimum consilio, ut sanguis quam plurimus earum actioni subjiçatur, quo copiosior humoris secretio fiat: ut arteriæ, insolita vi præditæ, eo melius valeant ad partes tenues massæ sanguinis exprimendas, sive crassus sive tenuis

fuerit ipse humor secretus; et demum, ut vis quam maxima arteriæ sit, et renixus quam minimus venæ, quo facillor humoris secretio fiat, et expeditior reliqui sanguinis in venas reditus. His autem et hujusmodi commentis parum omnino fidendum est.

701. In quibusdam enim organis secernentibus, veluti in jecore et testibus, motus sanguinis valde tardus est: in illo, nimirum, a sanguine venarum secretio fit; in his autem, tenues arteriæ, longe currentes, multos ramos dantes, ipsæ nonnihil dilatatae et sæpe multum convolutæ, languidum humoris flumen ad testes deferunt. Neque credibile est hoc sine

præsertim quum similis fabrica observetur in fere omnibus animalibus. *especially since a similar structure is observed in almost all animals.*

702. Quin et, nonnullæ secretiones, et profecto copiosæ, perficiuntur *Moreover, some secretions, and indeed copious ones, are accomplished* sine glandulis; saltem nullæ glandulæ, quæ inserviunt illis, *without glands; at least no glands, which serve for them,* detectæ sunt hactenus; nimirum halitus pulmonis et cutis, *have been detected hitherto; indeed the exhalation of the lungs and skin,* sudor, adeps, et glutinosus humor, qui humectat varia cava corporis, *sweat, fat, and the glutinous fluid, which bedews the various cavities* secernuntur sine glandulis. Igitur, hi humores *of the body, are secreted without glands. Therefore, these humours* videntur decedere a sanguine, et fortasse mutari per minutas *seem to escape from the blood, and perhaps to be changed by minute* arterias hiantes vel in cava corporis, vel in pulmonem, *arteries opening either into the cavities of the body, or into the lungs,* vel in cutem, vel omnino formari vi nondum satis *or upon the skin, or wholly to be formed by a power not yet sufficiently* exploratâ. Enim sincerus adeps vix, ac ne quidem vix, *explored. For pure fat scarcely, and not even scarcely,* cernitur in sanguine: neque sal, qui inest plurimus, *is seen in the blood: nor is the salt, which exists very abundant,* tenuissimus, et probe solutus in sanguine, unquam miscetur in *very subtle, and well dissolved in the blood, ever mixed in* sano corpore cum eo, aut glutinoso halitu cavorum *the healthy body with it, or the glutinous exhalation of the cavities* corporis, aut aquoso halitu cutis, aut demum, sudore. *of the body, or watery exudation of the skin, or finally, the sweat.*

703. Nec melius intelligitur, quomodo sanguis subigatur, mutetur, *Nor is it better understood, how the blood is reduced, is changed,* et vertatur in alios humores in veris glandulis; vel quomodo *and is converted into different humours in true glands; or how* hi secernantur ex eo, et demum prodeant puri. *these are secreted from it, and at length go forth unmixed.*

704. Iatro-mathematici finxerunt varias dotes sanguinis *The Iatro-mathematicians have supposed the various properties of the blood* delati ad certa organa, quæ varias magnitudines, et figuras *conveyed to certain organs, and the various magnitudes, and figures* et densitates particularum; quæ varias densitates, attractiones, *and densities of the particles; and the various densities, attractions,* aperturas, figuras organorum et arteriarum quæ responderent his, *apertures, figures of the organs and arteries which answered to them,*

consilio fieri, præsertim quum similis in omnibus fere animalibus fabrica observetur.

702. Quiu et secretiones nonnullæ, et copiosæ profecto, sine glandulis perficiuntur; nullæ saltem quæ his inserviunt glandulæ hactenus sunt detectæ; halitus nimirum pulmonis et cutis, sudor, adeps, et humor glutinosus, qui varia corporis cava humectat, sine glandulis secernuntur. Hi igitur humores videntur per minutas arterias, vel in cava corporis, vel in pulmonem, vel in cutem hiantes, a sanguine decedere, et fortasse mutari, vel omnino formari, vi nondum satis explorata. Adeps enim sincerus vix, ac ne vix quidem, in sanguine

cernitur: neque cum eo, aut halitu glutinoso cavorum corporis, aut aquoso cutis halitu, aut demum sudore, sal, qui plurimus sanguini inest, tenuissimus, et probe solutus, in sano corpore unquam miscetur.

703. Nec melius intelligitur quomodo in veris glandulis sanguis subigatur, mutetur, et in alios humores vertatur; vel quomodo hi ex eo secernantur, et puri demum prodeant.

704. Varias sanguinis ad certa organa delati dotes, variasque particularum magnitudines, et figuras, et densitates, finxerunt Iatro-mathematici; variasque quæ his responderent organorum et arteriarum densitates, attrac-

que organa ipsa, instar colorum, quibus utimur ad purganda
and that the organs themselves, like strainers, which we use to cleanse
 vel separanda multa fluida a se invicem, (esse) imbuta certo
or separate many fluids from each other, are imbued with a certain
 humore, ita ut trahant quasdam partes jam existentes
humour, so that they draw (attract) certain parts already existing
 in sanguine ad se, et vel transmittant vel detineant
in the blood to themselves, and either transmit (them to) or detain (them in)
 aliis atque aliis organis. Vero conjecturæ hujusmodi nituntur lubrico
the different organs. But conjectures of this sort depend upon a slippery
 si ullo fundamento; enim neque constat sanguinem ullo
if upon any foundation; for neither is it established that blood in any
 modo diversum deferri ad diversa organa, nisi ad jecur,
manner different is conveyed to the different organs, except to the liver,
 cui sanguis a venis datur; neque sane particulas
to which blood from the veins is given; nor truly that the particles
 variorum humorum existere in sanguine, priusquam subverint
of the various humours exist in the blood, before that they have undergone
 actionem secretantium organorum, neque figuras particularum
the action of the secreting organs, nor that the shapes of the particles
 que aperturas vasorum esse varias; neque, si hæ res habuissent
and apertures of the vessels are various; nor, if these things had had
 se ita, potuisset ullus humor unquam secerni purus; quoniam
themselves so, could any fluid ever be secreted pure; because
 tenuiores (scilicet, quorum particulæ essent minores secundum
the thinner (that is, of which the particles were less according to
 opinionem eorum auctorum qui tuebantur hanc doctrinam) elabentes
the opinion of those authors who defended this doctrine) escaping
 cum crassioribus, semper inquinassent hos: et sic urina,
with the thicker, always would have adulterated them: and thus urine,
 verbi gratia, secreta cum bile, semine, muco, lacte, adipe, cor-
for example, secreted with bile, semen, mucus, milk, fat, would have cor-
 rupisset omnes istos humores. Quin et, humores qui videntur crassissimi,
rupted all those fluids. Moreover, the fluids which seem thickest,
 bilis, cerumen, mucus, secreti multo tenuiores, tandem adipiscuntur
bile, ear wax, mucus, secreted (by) much thinner, at length acquire
 debitam crassitudinem, tenuioribus et aquosis partibus ipsorum
the due thickness, by the thinner and watery parts of them
 haustis per absorbentia vasa. Porro, fel ipsum, jam
being drank up by the absorbing vessels. Moreover, the gall itself, already
 secretum et factum crassum, resumptum iterum in sanguinem,
secreted and become thick, taken up again into the blood,

tiones, aperturas, figuras, ipsaque organa, colorum instar, quibus ad purganda, vel a se invicem separanda, multa fluida utimur, certo humore imbuta, ita ut partes quasdam in sanguine jam existentes trahant ad se, et aliis atque aliis organis vel transmittant vel detineant. Lubrico vero nituntur, si ullo fundamento, hujusmodi conjecturæ; neque enim constat diversum ullo modo sanguinem ad diversa organa deferri, nisi ad jecur, cui sanguis a venis datur, neque sane variorum humorum particulas prius in sanguine existere quam organorum secretantium actionem subverint, neque varias esse particularum figuras vaso-

rumque aperturas; neque, si ita hæ res se habuissent, ullus potuisset unquam purus secerni humor; quoniam tenuiores semper (scilicet quorum particulæ minores essent, secundum opinionem eorum auctorum qui hanc doctrinam tuebantur) cum crassioribus elabentes, hos inquinassent: et sic, verbi gratia, urina cum bile, semine, muco, lacte, adipe, secreta, omnes istos humores corrupisset. Quin et crassissimi qui videntur humores, bilis, cerumen, mucus, multo tenuiores secreti, haustis per vasa absorbentia tenuioribus et aquosis ipsorum partibus, debitam tandem adipiscuntur crassitudinem. Porro fel ipsum, jam secretum et crassum factum, in

facillime elabatur e corpore cum tenuissimo humore, scilicet,
very easily escapes from the body with the thinnest fluid, namely,
 urinâ.
the urine.

705. Nec chemici profecerunt multum qui ingressi sunt
 Nor have the chemists advanced much who have entered upon
 omnino aliam viam, ut redderent rationem hujus
 an altogether different path, that they might render an explanation of this
 rei. Nonnulli crediderunt sanguinem delatum ad secernentia
 subject. Some believed that the blood conveyed to the secreting
 organa, subire ibi quandam chemicam mutationem, quæ verteret
 organs, underwent there some chemical change, which changed
 ipsum in aliam naturam, non secus ac mustum vertuntur in
 it into another nature, in like manner as must is changed into
 vinum, et hoc in acetum; et quo hoc fieret
 wine, and this into vinegar; and in order that this might take place
 melius, et certius, finxerunt quoddam fermentum insitum
 better, and more certainly, they supposed some ferment inherent
 singulis glandulis, quale induceret certam et definitam mutationem
 in every gland, such as would induce a certain and definite change
 humoris cum qui misceretur. Vero nihil istiusmodi videtur
 of the fluid with which it might be mixed. But nothing of that kind seems
 inesse glandulis, neque, si fuerit, explicabit rem.
 to exist in the glands, nor, if there should be, will it explain the matter.

706. Est certissimum plurimos humores subire magnam et
 It is very certain that most (of) the humours undergo a great and
 miram mutationem compositionis in secernentibus organis. Vero
 wonderful change of composition in the secreting organs. But
 num hæc referatur recte ad effectum fermenti, ii judicent
 whether this is referred rightly to the effect of a ferment, let them judge
 qui noverint naturam, et vires, que varias species fermentorum,
 who know the nature, and powers, and various kinds of ferments,
 et intellexerint mutationem ipsam quam isti humores subeunt. Enim
 and understand the change itself which those humours undergo. For
 disputatur (impersonal.) frustra de vocabulo. Autem oportet tenere
 it is disputed (we dispute) in vain about a term. But it behoves to keep
 probe memoriâ istam mutationem pendere multum ab actione
 thoroughly in the memory that that change depends much upon the action
 vasorum secernentis organi, et, copiam secreti
 of the vessels of the secreting organ, and, that the quantity of the secreted
 humoris variare multum, prout hæc fuerint affecta, et
 humour varies much, according as they shall be affected, and

sanguinem iterum resumptum, cum tenuissimo humore, urina scilicet, e corpore facillime elabatur.

705. Nec multum profecerunt chemici, qui aliam omnino iugressi sunt viam, ut hujus rei rationem redderent. Crediderunt nonnulli sanguinem, ad organa secernentia delatum, mutationem quandam chemicam ibi subire, quæ ipsum in aliam naturam verteret, non secus ac mustum in vinum, et hoc in acetum vertuntur; et quo melius et certius hoc fieret, fermentum quoddam singulis glandulis insitum finxerunt, quale certam et definitam humoris quicum misceretur mutationem induceret. Nihil vero

istiusmodi glandulis inesse videtur, neque, si fuerit, rem explicabit.

706. Magnam et miram compositionis mutationem in organis secernentibus humores plurimos subire, certissimum est. Hæc vero, num recte ad effectum fermenti referatur, judicent ii qui naturam, et vires, variasque species fermentorum noverint, et ipsam mutationem intellexerint quam isti humores subeunt. Frustra enim de vocabulo disputatur. Probe autem memoria tenere oportet, mutationem istam pendere multum ab actione vasorum organi secernentis, et, prout hæc affecta fuerint, copiam humoris secreti multum variare, et quali-

qualitates ejus nonnunquam corrumpi ita ut ipse videatur
that the qualities of it sometimes are corrupted so that it seems
 converti in fere aliam naturam. Quin et, semen producitur
to be converted into almost another substance. Moreover, the semen is produced
 per secretionem, mirabilis humor, plenus vividis animalibus, cujus
by secretion, a wonderful humour, full of vivid animals, of which
 rei neque mathematici neque chemici facile reddiderint
thing neither mathematicians nor chemists will easily render
 rationem. Neque, profecto, est locus dubitandi, secretionem
the explanation. Nor, truly, is there room for doubting, that secretion,
 pariter ac alias functiones corporis, pendere quodammodo a
equally as the other functions of the body, depend in some measure upon
 vitali principio, que illis viribus propriis vivo corpori,
the vital principle, and those powers peculiar to the living body,
 quamvis parum intellectis: neque ideo esse explicandam mechanicis
although little understood: nor therefore to be explained upon mechanical
 aut chemicis principiis solis.
or chemical principles alone.

707. Vero quamvis non detur explicare primariam mutationem
But although it may not be given to explain the primary change
 quæ fit in secretionem, tamen plurima, neque inutilia
which occurs in secretion, nevertheless very many things, nor useless
 medicis, detecta sunt jam, de hac functione.
to physicians, have been detected already, concerning this function.

708. Multi humores, statim ut secernuntur, vel ejiciuntur e
Many humours, as soon as they are secreted, either are ejected from
 corpore, vel impenduntur propriis usibus intra corpus. Vero
the body, or are applied to their proper uses within the body. But
 alii transeunt per excrentes, seu efferentes ductus, a
others pass by excreting (excretory), or carrying ducts, from
 suis glandulis in idonea receptacula; in quibus sæpe commorantur
their glands into proper receptacles; in which they often remain
 diu, et amplius mutantur. Enim, plurimus humor
a long time, and are farther changed. Moreover, a great deal of fluid
 hauritur per resorbentia vasa: vero quod superest spissescit, et
is drank up by the absorbing vessels: but what remains thickens, and
 fit acrius, quo valeat melius ad sua munera. Porro, hoc
becomes more acrid, that it may suit better for its functions. Moreover, in this
 modo copia secreti humoris quæ decet, colligitur vel ejicienda
manner the quantity of secreted fluid which ought, is collected either to be ejected
 e corpore suo tempore, vel impendenda justo usui
from the body at its time, or to be expended (applied) to a proper purpose

tates ejus ita corrumpi nonnunquam, ut ipse in
 aliam fere videatur converti naturam. Quin et
 per secretionem semen producitur, mirabilis
 humor, vividis animalibus plenus, cujus rei neque
 mathematici neque chemici rationem facile
 reddiderint. Neque profecto dubitandi locus
 est, secretionem, pariter ac alius corporis fun-
 ctiones, quodammodo pendere a principio vitali,
 viribusque illis corpori vivo propriis, quamvis
 parum intellectis; neque ideo solis principiis
 mechanicis aut chemicis explicandam esse.

707. Quamvis vero primariam, quæ in secre-
 tione fit, mutationem non detur explicare, plu-

rima tamen, neque medicis inutilia, de hac
 functione jam detecta sunt.

708. Multi humores, statim ut secernuntur,
 vel ejiciuntur e corpore, vel propriis usibus
 intra corpus impenduntur. Alii vero, per due-
 tus excrentes seu efferentes, a glandulis suis
 transeunt in idonea receptacula: in quibus
 sæpe diu commorantur, et mutantur amplius.
 Plurimus enim humor per vasa resorbentia
 hauritur: quod superest vero spissescit, et
 acrius fit, quo melius ad sua munera valent.
 Porro, hoc modo copia quæ decet humoris secreti
 colligitur, suo tempore vel ejicienda e corpore,

intra corpus. Exempla machinationis hujusmodi sunt, vesicæ urinæ, *within the body. Examples of a mechanism of this sort are, the bladders of urine,* fellis, seminis, saltem ut plerique medici putarunt, et *of the bile, of the semen, at least as most physicians have supposed, and* mucosi folliculi ubique corporis. *the mucous follicles everywhere of (throughout) the body.*

709. Auctus impetus universi sanguinis auget parum singulares *The increased impetus of the whole blood increases little the individual* secretiones, præter exhalationem per cutem et sudorem; vero hæc *secretions, except the exhalation by the skin and sweat; but these* augentur in mirum modum, dummodo fuerint neque contractio *are increased in a wonderful degree, provided there be neither contraction* neque alia obstructio minimorum vasorum cutis, neque frigus *nor other obstruction of the very minute vessels of the skin, nor cold* admotum corpori. Bene noti effectus exercitationis corporis, *applied to the body. The well-known effects of exercise of the body,* caloris februm, et multorum stimulantium medicamentorum docent. *of the heat of fevers, and of many stimulating medicines teach.*

710. Vero omnis secretio augetur aucta actione vasorum *But every secretion is increased by the increased action of the vessels* sui organi, dummodo hæc non fuerit nimia, neque aliter valde *of its own organ, provided this should not be excessive, nor otherwise very* morbosa. Hoc modo plurimæ secretiones incitantur omni *diseased. In this manner very many secretions are excited by every kind of* stimulo admoto organis earum, vel recepto in massam sanguinis, *stimulus applied to the organs of them, or received into the mass of the blood,* et afficiente quasdam (partes) præ aliis partibus. Quodvis *and affecting some (parts) before (more than) other parts. Any* acre receptum in oculum, aut sal in os, et vivum *acid (thing) admitted into the eye, or salt into the mouth, and quick-* argentum, que multa stimulantia, imprimis diuretica, quomodocunque *silver, and many stimulating things, especially diuretics, however* ingressa sint sanguinem, docent. *they may have entered the blood, teach.*

711. Porro, stimulus qui videretur generalis, et qui afficit *Moreover, the stimulus which might seem general, and which affects* universum corpus, vel forsitan animum ipsum, secundum leges *the whole body, or perhaps the mind itself, according to the laws* consensûs, sæpe intendit alias secretiones, minuit alias. Lachrymæ *of sympathy, often increases some secretions, diminishes others. The tears* secernuntur copiosius solito mærore, fel iræ: fauces *are secreted more copiously than usual from grief, the bile from anger: the fauces*

vel justo usui intra corpus impendenda. Hujusmodi machinationis exempla sunt, vesicæ urinæ, fellis, seminis, saltem ut plerique medici putarunt, et folliculi mucosi ubique corporis.

709. Auctus universi sanguinis impetus singulares secretiones parum auget, præter exhalationem per cutem et sudorem; hæc vero mirum in modum augentur, dummodo neque contractio neque alia obstructio vasorum minimorum cutis fuerint, neque frigus corpori admotum. Docent effectus bene noti corporis exercitationis, caloris, februm, et multorum medicamentorum stimulantium.

710. Augetur vero omnis secretio, aucta sui

organi vasorum actione, dummodo hæc non nimia neque aliter valde morbosa fuerit. Hoc modo plurimæ secretiones incitantur omni stimulo earum organis admoto, vel in massam sanguinis recepto, et quasdam præ aliis partibus afficiente. Docent acre quodvis in oculum, aut sal in os receptum, et argentum vivum, multaque stimulantia, diuretica imprimis, quomodocunque sanguinem ingressa sint.

711. Porro, stimulus qui videretur generalis, et qui universum corpus, vel forsitan animum ipsum afficit, secundum consensum leges (361), secretiones alias intendit sæpe, alias minuit. Lachrymæ mærore, fel ira, copiosius solito

sæpe arescunt utroque affectu. Saliva fluit esurienti (homini)
often grow dry. in both affections. The saliva flows to a hungry man
 ad conspectum vel cogitationem grati cibi; et, pari ratione,
at the sight or thought of agreeable food; and, for a like reason,
 plus seminis solito secernitur maribus multorum animalium
more (of) semen than usual is secreted by the males of many animals
 ad conspectum vel odorem fœminæ pronæ in venerem: et sæpe
at the sight or smell of the female disposed to venery: and often
 viris a solâ imagine optatæ fœminæ, vel etiam a
by men from the sole image of the desired woman, or even from
 recordatione venerearum rerum.
the recollection of venereal matters.

712. Spasmus vel contractio, vel abnormis actio, qualiscunque
Spasm or contraction, or an irregular action, whatever kind
 fuerit, vasorum secernentis organi, aliquando impedit, aliquando
it may be, of the vessels of a secreting organ, sometimes impedes, sometimes
 auget, nonnunquam plane corrumpit secretionem. Spasmus quoque
increases, sometimes entirely depraves secretion. Spasm also
 remotarum partium, (scilicet, sanguine pulso a solitis (viis)
of remote parts, (that is, the blood being driven from the usual
 et directo in novas vias,) sæpe auget secretiones. Varii
and directed into new channels,) often increases the secretions. The various
 et miri affectus urinæ et lactis ab hysteriâ, terrore,
and wonderful affections of the urine and milk from hysteria, terror,
 irâ, frigore, docent.
anger, cold, teach.

713. Quædam secretiones sæpe augentur, aliquando fortasse
Some secretions often are increased, sometimes perhaps
 inducuntur, stimulo, quamvis omnino levi, admoto excernentibus
are induced, by a stimulus, although altogether slight, applied to the excreting (ory)
 ductibus, sive is fuerit chemici sive mechanici generis. Actio
ducts, whether it be of a chemical or mechanical kind. The action
 ipsa manducandi ciet salivam, et sapor cibi, præsertim
itself of chewing promotes the saliva, and the taste of food, especially
 acrioris; fortius medicamentum movet fel; et infans
the sharper; a very strong medicine excites bile; and the infant
 sugendo non modo ducit lac e mammis, sed promovet
by sucking not only draws the milk from the breasts, but promotes
 secretionem ejûs; aliquando etiam, ut videtur, facit lac venire,
the secretion of it; sometimes even, as it seems, causes milk to come,
 ubi antea fuit nullum.
when before there was none.

secernuntur: utroque affectu fauces sæpe arescunt. Saliva fluit esurienti ad conspectum vel cogitationem grati cibi; et pari ratione, seminis plus solito secernitur maribus multorum animalium, ad conspectum vel odorem fœminæ pronæ in venerem: et viris sæpe a sola imagine optatæ fœminæ, vel etiam a recordatione rerum venerearum.

712. Spasmus, vel contractio, vel actio abnormis, qualiscunque fuerit, vasorum organi secernentis, secretionem aliquando impedit, aliquando auget, nonnunquam plane corrumpit. Spasmus quoque remotarum partium (pulso scilicet sanguine a solitis, et in novas directo

vias) (384, 386), secretiones sæpe auget. Docent variis et miris urinæ et lactis affectus, ab hysteria, terrore, ira, frigore.

713. Augentur sæpe, aliquando fortasse inducuntur, secretiones quædam, stimulo, quamvis levi omnino, ductibus excernentibus admoto; sive is chemici sive mechanici generis fuerit. Ipsa manducandi actio salivam ciet, et sapor cibi, præsertim acrioris; medicamentum fortius fel movet; et infans non modo lac e mammis ducit sugendo, sed ejus secretionem promovet; aliquando etiam, ut videtur, ubi nullum fuit antea, lac venire facit.

714. Pleræque secretiones (sunt) perpetuæ, et necessariae ad vitam et sanitatem. Tamen sunt quædam, scilicet, quæ inserviunt generationi, aut nutrimento novi animalis, quæ incipiunt et desinunt certo tempore, et inducuntur certo stimulo. Masculinum semen, et genitalis humor fœminarum, si fuerit quis, vix secernuntur ante puberem ætatem: neque est (pro habent) vetulis genitalis vis, neque forsitan viris fere confectis senio. Lac, quoque, vix secernitur, nisi post partum; quod est tribuendum insigni consensui inter uterum et mammas.

Most of the secretions are constant, and necessary to life and health. However there are some, namely, which serve for generation, or the nutriment of the new animal, which begin and end at a certain time, and are induced by a certain stimulus. The male semen, and the genital fluid of females, if there (should) be any, scarcely are secreted before ripe age (the age of puberty): nor have old women a genital power, nor perhaps men nearly worn out with old age. Milk, also, scarcely is secreted, except after parturition; which is to be attributed to the great sympathy between the uterus and mammæ.

715. Mirum æquilibrium observatur inter varias secretiones, ita ut aliæ augeantur, fere pari ratione ac aliæ minuantur, quo est cautum corpus ne exhauriatur adeo facile et subito ut aliter fieret. Hoc est imprimis notabile inter halitum cutis et sudorem, et urinam et excretionem alvi; quamvis idem sæpe observetur in aliis secretionibus.

A wonderful equilibrium is observed between the various secretions, so that some are increased, almost in an equal ratio as others are diminished, by which it is provided that the body should not be exhausted so easily and suddenly as otherwise would happen. This is especially remarkable between the exhalation of the skin and sweat, and the urine and the excretion of the belly; although the same often is observed in other secretions.

716. Aliis hominibus sunt (pro habent) aliæ secretiones copiosiores vel parciore, blandiores vel aciores; et fere quo parciore eo aciores evadunt. Infantibus sunt omnes humores blandi et copiosi, si fuerint comparati cum iisdem humoribus in adulto homine.

Some men have some secretions more copious or more scanty, more bland or more acrid; and commonly the more scanty the more acrid they become. Infants have all the fluids bland and copious, if they be compared with the same fluids in an adult person.

714. Secretiones pleræque perpetuæ, et ad vitam et sanitatem necessariae. Sunt tamen quædam, scilicet quæ generationi inserviunt, aut nutrimento novi animalis, quæ certo tempore incipiunt et desinunt, et certo stimulo inducuntur. Semen masculinum, et genitalis humor, si quis fuerit, fœminarum, vix ante ætatem puberem secernuntur: neque vetulis vis genitalis est, neque forsitan viris senio fere confectis. Lac quoque vix secernitur nisi post partum; quod insigni inter uterum et mammas consensui tribuendum est.

715. Mirum inter varias secretiones observa-

tur æquilibrium, ita ut pari fere ratione ac aliæ augeantur, aliæ minuantur, quo cautum est, ne corpus adeo facile et subito (523) ut aliter fieret, exhauriatur. Hoc imprimis notabile est inter halitum cutis et sudorem, et urinam, et excretionem alvi; quamvis in aliis secretionibus idem sæpe observetur.

716. Secretiones aliæ aliis hominibus copiosiores vel parciore, blandiores vel aciores, sunt; et fere quo parciore, eo aciores evadunt. Infantibus omnes humores blandi et copiosi sunt, si cum iisdem humoribus in adulto homine comparati fuerint. Fœminis quoque non nihil

Solent esse quoque nonnihil blandiores fœminis quam viris.
They are accustomed to be also somewhat more bland in women than men.
 Varietates hujusmodi sæpe observantur in salivâ, sudore, urinâ,
Varieties of this kind often are observed in the saliva, sweat, urine,
 felle, semine. Sunt quibus os semper madet, neque
bile, semen. There are those in whom the mouth always is moist, nor
 est ulla sitis. Sunt qui sudant multum, et fere
is there any thirst. There are those who sweat much, and almost
 semper. Sunt quibus cutis est arida. Sunt qui patiuntur
always. There are to whom the skin is dry. There are who suffer
 multum a nimis copioso aut acri felle. Urina est limpidior
greatly from a too abundant or acrid bile. The urine is more limpid
 et blandior aliis hominibus, rubra et acris aliis. Semen
and bland in some persons, red and acrid in others. The semen
 ipsum olet, præter solitum quibusdam.
itself smells strong, beyond what is usual in some.

717. Quamvis multum hic pendeat a primâ fabricatione
Although much here may depend upon the original conformation
 corporis, et varietatibus quas ætas facit, multum quoque pendet
of the body, and the changes which age causes, much also depends
 a genere vitæ, et victu, quo homines utuntur.
upon the kind of life, and the food, which persons use.

718. Denique, generalis status massæ sanguinis afficit, haud
Indeed, the general condition of the mass of the blood affects, not
 parum, humores qui derivantur ex eo. Post cibum et potum
a little, the fluids which are derived from it. After food and drink
 quidam humores secernuntur copiosiores, præsertim lac, et urina,
certain fluids are secreted more copiously, especially milk, and urine,
 et halitus cutis, et sudor. Lac,
and the exhalation of the skin (insensible perspiration), and sweat. Milk,
 copiosissimus humor in nutrice, post inediam aliquot horarum,
a most abundant fluid in the nurse, after a fasting of some hours,
 secernitur vel nullum, vel parcum et acre, quale
is secreted either none (not at all), or sparingly and acrid, such as
 infans respuerit, neque profecto suxerit impune. Vero
the infant would reject, nor indeed would have sucked with impunity. But
 idem fluit copiosum, et blandum, et nutriens, brevissimo
the same flows abundantly, and bland, and nutrient, in a very short
 spatio post cibum. Urina, quoque, fere statim ut multus
time after food. The urine, also, almost as soon as much
 potus fuerit haustus, imprimis frigidior, secernitur copiosa,
drink has been swallowed, especially the colder, is secreted abundantly,

quam viris blandiores esse solent. Hujusmodi varietates in saliva, sudore, urina, felle, semine, sæpe observantur. Sunt quibus os semper madet, neque sitis ulla est. Sunt qui multum et fere semper sudant. Sunt quibus cutis arida est. Sunt qui multum patiuntur a felle nimis copioso aut acri. Urina aliis hominibus limpidior et blandior, aliis rubra et acris est. Semen ipsum quibusdam præter solitum olet.

717. Quamvis multum hic pendeat a primâ corporis fabricatione, et varietatibus quas ætas facit, multum quoque pendet a vitæ genere, et victu quo homines utuntur.

718. Denique, status generalis massæ sanguinis, humores, qui ex eo derivantur, haud parum afficit. Post cibum et potum, copiosiores secernuntur humores quidam, lac præsertim, et urina, et halitus cutis, et sudor. Lac, copiosissimus in nutrice humor, post aliquot horarum inediam, vel nullum secernitur, vel parcum et acre, quale infans respuerit, neque profecto impune suxerit. Idem vero brevissimo post cibum spatio, copiosum, et blandum, et nutriens fluit. Urina quoque, statim fere ut multus potus haustus fuerit, imprimis frigidior, copiosa secernitur; quod adeo subito nonnunquam obser-

quod nonnunquam observatur adeo subito, ut sit vix
which sometimes is observed so suddenly, that it can be scarcely
 credibile potum ipsum pervenisse ad renes. Est probabile
credible that the drink itself arrived at the kidneys. It is probable
 quendam stimulum dari renibus ipsis, per consensum
that some stimulus is given to the kidneys themselves, through the sympathy
 quem habent cum ventriculo, et aliquem spasmum, forsan,
which they have with the stomach, and that some spasm, perhaps,
 induci remotioribus vasis, qualis dirigat plus sanguinis ad
is induced in the remoter vessels, such as may direct more (of) blood to
 renes, que intendat actionem eorum. Nec quisquam facile
the kidneys, and increase the action of them. Nor could any one easily
 sudaverit diu aut multum, nisi vel fuerit admodum
sweat a long time or much, except either he were of a very
 humidæ constitutionis, que habuerit multum tenuem humorem in venis,
moist constitution, and had much thin fluid in his veins,
 vel denique probe diluerit suos humores inter sudandum, que
or indeed should properly dilute his fluids while sweating, and
 impleverit corpus bibendo. Quin et hac ratione, nimirum,
should fill the body by drinking. Moreover by this means, namely,
 diluendo, possumus movere vel urinam vel sudorem, prout
by diluting, we can excite either the urine or sweat, according as
 corpus ipsum fuerit servatum frigidum vel calidum.
the body itself shall be kept cold or warm.

719. Postremo, pleræque, fortasse omnes, secretiones minuuntur
Lastly, most of, perhaps all, the secretions are diminished
 inter somnum, scilicet, quia tum motus sanguinis est temperatior,
during sleep, that is, because then the motion of the blood is more moderate,
 et secernentia organa, non secus ac universum corpus, minus sentiunt,
and the secreting organs, in like manner as the whole body, are less sentient,
 et igitur excitantur ægrius, et tardius ad solita
and therefore are excited more difficultly, and more slowly to their usual
 munera. Quod si sudor videtur augeri inter somnum, hoc,
functions. But if sweat seems to be increased during sleep, this,
 sine dubio, est tribuendum calidiori vestitui quo tum
without doubt, is to be attributed to the warmer clothing with which then
 solemus fovere nosmet: enim multum abest ut vel
we are accustomed to warm ourselves: for it is far from that we either
 sudemus, vel calescamus, si dormimus tecti tantum vestibus
sweat, or become warm, if we sleep covered only with the clothes
 quibus vigilantes utimur.
which waking we use.

vatur, ut vix credibile sit ipsum potum ad renes
 pervenisse. Probabile est stimulum quendam
 ipsis renibus dari, per consensum quem cum
 ventriculo habent, et *spasmum* aliquem forsan
 induci vasis remotioribus, qualis plus sanguinis
 ad renes dirigat (476), eorumque actionem in-
 tendat. Nec facile quisquam diu aut multum
 sudaverit, nisi vel humidæ admodum constitu-
 tionis fuerit, multumque humorem tenuem in
 venis habuerit, vel denique inter sudandum suos
 humores probe diluerit, corpusque impleverit,
 bibendo. Quin et hac ratione, diluendo nimi-
 rum, vel urinam vel sudorem movere possumus,

prout corpus ipsam frigidum vel calidum ser-
 vatum fuerit.

719. Postremo, inter somnum pleræque, for-
 tasse omnes, secretiones minuuntur, scilicet
 quia tum motus sanguinis temperatior est, et
 organa secernentia, non secus ac universum
 corpus, minus sentiunt, et ægrius igitur et tar-
 dius ad solita munera excitantur. Quod si
 sudor inter somnum videtur augeri, hoc sine
 dubio tribuendum est vestitui calidiori, quo tum
 nosmet fovere solemus: multum enim abest ut
 vel sudemus vel calescamus, si vestibus tantum
 quibus vigilantes utimur tecti dormimus.

720. Aliæ secretiones sunt copiosæ, aliæ omnino parcæ: vero
Some secretions are abundant, others altogether scanty: but
 quantitas singularum potest nullo modo reduci ad certas mensuras;
the quantity of each can by no means be reduced to certain measures;
 quippe quæ variet maxime, tum sano, sed multo magis
as being what varies very much, even in the healthy, but much more
 morbosò corpore, propter rationes memoratas. Enim, in
in the diseased body, on account of the reasons mentioned. Moreover, in
 plurimis exemplis, insignis et fere incredibilis copia salivæ,
very many examples, a remarkable and almost incredible quantity of saliva,
 succi ventriculi, aut demum fellis, secreta est brevi
of gastric juice, or indeed of bile, has been secreted in a short
 tempore.
time.

721. Neque facile judicatur (impersonal) de copiâ excre-
Nor can we easily judge of the quantity of the ex-
 tionum, nimirum, urinæ et sudoris, et halitus cutis et
cretions, for example, of the urine and sweat, and exhalation of the skin and
 pulmonis, quamvis plurima experimenta fuerint instituta ad
lungs, although very many experiments have been instituted to
 indagandam hanc rem, scilicet quam medici crediderint haud
investigate this subject, as being what physicians believed not
 difficile exploratu, et insignis utilitatis, cum ad tuendam
difficult to be examined, and of great utility, as well to preserve
 sanitatem, tum quoque ad sanandos morbos.
health, as also to cure diseases.

722. Profecto urina ponderatur facile: autem variat insigniter,
Indeed the urine is weighed easily: but it varies remarkably,
 secundum constitutionem, ætatem, genus vitæ, cibum que potum
according to the constitution, age, kind of life, the food and drink
 quibus utimur; sed imprimis prout exhalatio per cutem
which we use; but especially according as the exhalation by the skin
 fuerit copiosior ve parcior, sive ab exercitatione aut
shall be more abundant or scanty, whether from exercise or
 ignaviâ, sive a calore aut frigore admoto corpori. Enim
idleness, or from heat or cold applied to the body. For
 mirabile æquilibrium observatur inter has binas excretiones.
a wonderful equilibrium is observed between these two excretions.
 Aliquando vix una libra urinæ, aliquando quatuor vel quinque
Sometimes scarcely a single pound of urine, sometimes four or five
 redditæ sunt quotidie, etiam a sano homine; vero in morbis,
have been voided daily, even by a healthy person; but in diseases,

720. Secretiones aliæ copiosæ, aliæ parcæ omnino sunt: singularum vero quantitas nullo modo ad certas mensuras reduci potest; quippe quæ variet maxime tum sano, sed multo magis morbosò corpore, propter rationes (716, 719,) memoratas. Plurimis enim in exemplis insignis et fere incredibilis copia salivæ, succi ventriculi, aut demum fellis brevi tempore secreta est.

721. Neque facile judicatur de copia excretionum, urinæ nimirum, et sudoris, et halitus cutis et pulmonis, quamvis plurima experimenta instituta fuerint ad hanc rem indagandam, scilicet quam medici haud difficile exploratu

crediderint, et insignis utilitatis, cum ad tuendam sanitatem, tum quoque ad sanandos morbos.

722. Urina profecto ponderatur facile: variat autem insigniter secundum constitutionem, ætatem, vitæ genus, cibum potumque, quibus utimur; sed imprimis prout exhalatio per cutem copiosior fuerit parciore, sive ab exercitatione aut ignaviâ, sive a calore aut frigore corpori admoto. Mirabile enim inter has binas excretiones observatur æquilibrium. Aliquando vix una libra urinæ, aliquando quatuor vel quinque, etiam a sano homine, quotidie redditæ sunt: in morbis vero sæpe duodecim libræ et amplius:

sæpe duodecim libræ et amplius autem media quantitas, quam
often twelve pounds and more: but the medium quantity, which
 sanus homo reddiderit in die, erit a tribus libris ad
a healthy person should void in the day, will be from three pounds to
 tres cum semisse.
three with (and) a half.

723. Exhalatio per cutem et sudor variant pari ratione
The exhalation by the skin and the sweat vary in a similar way
 ac urina; sed vera quantitas eorum haud detegitur ita facile;
as the urine; but the true quantity of them is not detected so easily;
 scilicet, quia statera tantum ostendit excessum exhalati
that is, because the balance only shews the excess of the exhaled
 humoris, supra eum qui hauritur eodem tempore. Nec
fluid, above that which is swallowed in the same time. Nor
 desunt certissima experimenta, quæ probant corpus sæpe,
are there wanting very certain experiments, which prove that the body often,
 fortasse semper, haurire aliquid ab aëre, quod sane derogat
perhaps always, absorbs something from the air, which indeed derogates
 multum *Sanctorianis* observationibus. Enim corpus, hoc
much from the Sanctorian observations. For the body, in this
 modo, nonnunquam attrahit tantum ab aëre quantum æqua-
manner, sometimes attracts as much from the air as would have
 verit, vel etiam superaverit, copiam exhalationis: quod
equalled, or even would have exceeded, the quantity of the exhalation: which
 est imprimis notabile, si quis fuerit exhaustus valido labore
is especially remarkable, if a person has been exhausted by hard labour
 et inedia, vel ingente profluvio urinæ, vel hydropse recrudescente,
and fasting, or a great flow of urine, or a dropsy increasing anew,
 postquam aqua fuisset educta arte.
after that the water had been drawn off by art.

724. Omnis secretio, copiosior vel parcius justo, nocet,
Every secretion, more abundant or scanty than proper, hurts,
 nimirum quia functio cui inservit aut impeditur tum, aut
doubtless because the function to which it serves either is impeded then, or
 saltem corrumpitur nonnihil. Sic olfactus, et gustus, et concoctio
at least is depraved somewhat. Thus smell, and taste, and the digestion
 ciborum sæpe vitiantur, a nimis aut nimis parvis humoribus
of food often are vitiated, from the excessive or too scanty fluids
 narium, vel oris, vel ventriculi, vel intestinorum, vel
of the nostrils, or of the mouth, or of the stomach, or intestines, or
 jecoris. Excretio humoris naturâ non excernendi, quoque nocet
liver. The excretion of a fluid by nature not to be excerned, also hurts

media autem quantitas quam homo sanus reddiderit in die, erit a tribus libris ad tres cum semisse.

723. Exhalatio per cutem et sudor pari ratione variant ac urina; sed haud ita facile vera eorum quantitas detegitur: scilicet, quia statera excessum tantum humoris exhalati, supra eum qui eodem tempore hauritur, ostendit. Nec desunt certissima experimenta quæ probant corpus sæpe, fortasse semper, haurire aliquid ab aëre: quod sane multum derogat observationibus *Sanctorianis*. Tantum enim hoc modo corpus ab aëre nonnunquam attrahit, quantum

copiam exhalationis æquaverit, vel multum etiam superaverit: quod imprimis notabile est, si quis valido labore et inedia exhaustus fuerit, vel ingente urinæ profluvio, vel hydropse recrudescente, postquam aqua arte educta fuisset.

724. Nocet omnis secretio copiosior vel parcius justo (62); nimirum, quia tum functio, cui inservit, aut impeditur, aut saltem nonnihil corrumpitur. Sic olfactus, et gustus, et concoctio ciborum, vitiantur sæpe a nimis aut nimis parvis narium, vel oris, vel ventriculi, vel intestinorum, vel jecoris, humoribus. Nocet quoque haud parum excretio humoris natura

haud parum: veluti salivæ quam multi sæpe movent præter naturam, not a little: as of the saliva which many often excite unnaturally, varlis acribus medicamentis quibus utuntur, et assidue expuunt, by various acrid medicines which they use, and incessantly spit out, non sine suo magno malo: sic corpus exhauritur exinanitione omnino præter naturam, et concoctio ciborum perficitur curatione wholly against nature, and the concoction of the food is performed ægrius, salivâ, quæ debet juvare, deficienter. difficultly, from the saliva, which ought to assist, being deficient.

725. Quod si humores, excernendi naturâ, fuerint suppressi But if fluids, to be excreted by nature, should be suppressed vel retenti, vel excreti nimiam copiam, præsertim urina, or retained, or excreted in excessive quantity, especially the urine, et halitus cutis, valetudo afficitur adhuc magis et citius. and exhalation of the skin, the health is affected still more and more rapidly.

726. Exhalatio per cutem fit nimia, imprimis, The exhalation by the skin becomes excessive, in the first place, propter auctum impetum sanguinis, qui afficit alias on account of the increased impetus of blood, which affects the other secretiones parum, vero hanc multum, vel propter solutam secretions little, but this a great deal, or on account of the unbraced compagem cutis ipsius, que vasa et foramina ejus laxata texture of the skin itself, and the vessels and pores of it relaxed et patefacta, veluti a calore, calido balneo, laxa et flaccida and open, as from heat, the warm bath, a lax and flaccid constitutione corporis; vel denique, propter sanguinem dilutum constitution of body; or lastly, on account of the blood diluted multo tenui humore, quem facile dimittit atque exhalat. Hinc with much thin fluid, which it easily parts from and exhales. Hence ratio haud obscura redditur, sudoris quarundam partium, the reason not obscure is rendered, of the sweat of some parts, dum aliæ arescunt, vel frigidi sudoris, qualis sæpe observatur, whilst others grow dry, or of the cold sweat, such as often is observed, viribus quæ movent sanguinem deficientibus, et sane haud the powers which circulate the blood failing, and truly with no secundo omine. favourable omen.

727. Excessus excretionis per cutem nocet, potissimum hac ratione, Excess of excretion by the skin hurts, principally for this reason, quod exhauriat, debilitet, solvat corpus, laxet cutem, que that it exhausts, debilitates, unbraces the frame, relaxes the skin, and

non excernendi: veluti salivæ, quam multi sæpe, non sine magno suo malo, movent præter naturam, variis quibus utuntur acribus medicamentis, et assidue expuunt: sic corpus exhauritur exinanitione quæ omnino præter naturam est, et concoctio ciborum, deficienter quæ juvare debet salivâ, ægrius perficitur.

725. Quod si humores natura excernendi suppressi vel retenti fuerint, vel nimia copia excreti, urina præsertim, et halitus cutis, valetudo magis adhuc et citius afficitur (62).

726. Exhalatio per cutem nimia fit, imprimis propter auctum sanguinis impetum (467, 468) qui alias excretiones parum, hauc vero multum,

afficit (709), vel propter solutam ipsius cutis compagem, ejusque vasa et foramina laxata et patefacta, veluti a calore, balneo calido, constitutione corporis laxa et flaccida; vel denique propter sanguinem multo humore tenui dilutum, quem (715, 727) facile dimittit atque exhalat. Hinc ratio haud obscura redditur sudoris quarundam partium dum aliæ arescunt, vel sudoris frigidi qualis sæpe observatur, deficientibus quæ sanguinem movent viribus, et sane haud secundo omine.

727. Excessus excretionis per cutem haec potissimum ratione nocet, quod corpus exhauriat, debilitet, solvat, cutem laxet, hominemque

reddat hominem debilem, et præter solitum sentientem, et obnoxium
renders a person weak, and unusually sensitive, and liable

omnibus malis quæ proveniunt a frigore. Vero ingens
to all the mischiefs which proceed from cold. But great

sudor potest inducere syncopen, vel mortem ipsam, corpore
sweat may bring on syncope, or death itself, by the body

exhausto subito, et soluto. Vero exempla haud facile
being exhausted suddenly, and relaxed. But examples are not easily

ostenduntur sanguinis spissati, corrupti hoc modo, quæ
shewn of the blood being inspissated, corrupted in this manner, and

hominum ideo factorum proclivium ad febres, inflammationes, &c.
of persons thus rendered disposed to fevers, inflammations, &c.

728. Ingens sudor (est) familiaris quibusdam hominibus, quæ vix
Profuse sweating is common to some men, and scarcely

habendus morbosus, neque reprimendus sine gravi, et sæpe
to be considered diseased, nor to be repressed without great, and often

instante periculo. Copiosus sudor quoque solvit multos morbos,
immediate danger. A copious sweat also resolves many diseases,

præsertim febres: vero multorum est tantum signum et pars,
especially fevers: but of many it is only a symptom and part,

scilicet qui neque solvat morbum, neque cedit in
as being that which neither solves the disease, nor goes towards

salutem ullo modo, sed potius noceat ægro, viribus corporis
health in any manner, but rather hurts the sick, the powers of the body

exhaustis. Experientia sola docet, in singulis exemplis
being exhausted. Experience alone teaches, in the individual examples

morborum, sudor qui acciderit fuerit bonus an malus.
of diseases, whether the sweat which has happened has been good or bad.

Tamen, juvat scire, eum (sudorem) plerumque esse non
However, it is useful to know, that that for the most part is not

inutilem, qui est generalis, qui fluit libere usque ad pedes,
injurious, which is general, which flows freely down to the feet,

tenuis, calidus, constans, qui temperat calorem corporis, quem
thin, warm, constant, which moderates the heat of the body, which

æger fert bene, quæ molliores, pleniore, tardiores pulsus
the patient bears well, and softer, fuller, slower pulsations

arteriarum comitantur, et os et lingua humidiores, et
of the arteries accompany, and the mouth and tongue moister, and

anxietas minor, et levamen universæ molestiæ, et appetitus
the anxiety less, and alleviation of the general uneasiness, and the appetite

cibi renovatus; contra (juvat scire), tenacem et glutinosum,
for food renewed; on the other hand, that a tenacious and glutinous,

debilem et sentientem præter solitum, omnibus quæ a frigore proveniunt malis obnoxium reddat. Ingens vero sudor, exhausto subito et soluto corpore, syncopen, vel mortem ipsam, inducere potest. Haud facile vero ostenduntur exempla sanguinis hoc modo spissati, corrupti, hominumque ideo ad febres, inflammationes, &c. proclivium factorum.

728. Ingens quibusdam hominibus sudor familiaris, vixque morbosus habendus, neque sine gravi sæpe et instante periculo reprimendus. Copiosus quoque sudor multos morbos, præsertim febres, solvit: multorum vero signum et

pars tantum est, scilicet qui neque solvat morbum, neque ullo modo in salutem cedit, sed, exhaustis corporis viribus, ægro potius noceat. Sola experientia docet, singulis morborum in exemplis, bonus an malus fuerit sudor qui acciderit. Scire tamen juvat eum plerumque non inutilem esse, qui generalis est, qui ad pedes usque libere fluit, tenuis, calidus, constans, qui corporis calorem temperat, quem æger bene fert, pulsusque arteriarum molliores, pleniore, tardiores, et anxietas minor, et levamen universæ molestiæ, et cibi appetitus renovatus: contra,

frigidum, olidum sudorem, quarundam partium tantum
cold, strong smelling sweat, of some parts only (partial),
 veluti vultus, aut cervicum, aut pectoris, dum reliquum corpus,
as of the face, or shoulders, or breast, whilst the rest of the body,
 et artus præsertim, arescunt, esse malum; qui multum exhaurit
and the limbs especially, grow dry, is bad; which greatly exhausts
 ægrum, neque levat morbum: nam talis exinanitio, nisi
the patient, nor relieves the disease: for such evacuation, unless
 prodest, plerumque nocet. Denique, medici, edocti a Naturâ
it benefits, for the most part hurts. In fine, physicians, taught by Nature
 ipsâ, eliciunt arte copiosissimum sudorem, in multis morbis, sæpe
itself, elicit by art a most copious sweat, in many diseases, often
 cum insigni commodo ægotantium; de quo erit agendum
with remarkable advantage (of) to the sick; of which it will be to be treated
 plenius postea suo loco.
more fully afterwards in its own place.

729. Sudor que halitus cutis, haud raro observantur
The sweat and exhalation of the skin, not unfrequently are observed
 minutus vel suppressus. Hæ excretiones paulatim deficient, propter
diminished or suppressed. These excretions gradually fail, through
 otiosum et sedentarium genus vitæ, graves affectus animi,
an idle and sedentary kind of life, depressing passions of the mind,
 qui valde minuunt impetum sanguinis, fere omnem
which greatly diminish the impetus of the blood, almost every kind of
 debilitatem, frigidum et humidum cælum aut tempus, immunditiam,
debility, a cold and humid climate or season, uncleanness,
 durius genus cibi, difficilius exhalatu, et demum, propter
a harder kind of diet, more difficult to be exhaled, and lastly, on account of
 plurima foramina cutis, et minora vasa coarctata
the very many pores of the skin, and the smaller vessels being straitened
 aut conclusa, veluti in senibus, quibus semper est (pro habent)
(constricted) or shut up, as in old men, who always have
 exhalatio per cutem parcior, vero urina, pro ratâ parte,
the exhalation by the skin more scanty, but the urine, in proportion,
 copiosior quam junioribus (est.)
more plentiful than younger persons (have.)

730. Multa mala profiunt a tali defectu. Totum corpus
Many disorders proceed from such a deficiency. The whole body
 (nisi alia secretio aucta, compensaverit insolitam
(unless some other secretion being increased, should compensate the unusual
 retentionem,) fit plenum, et hebes, et languidum, et animus
retention, becomes full, and dull, and languid, and the mind

malum esse sudorem tenacem et glutinosum, frigidum, olidum, quarundam tantum partium, veluti vultus, aut cervicum, aut pectoris, dum reliquum corpus, et artus præsertim, arescunt; qui ægrum multum exhaurit, neque morbum levat: nam talis exinanitio, nisi prodest, plerumque nocet. Denique, sudorem copiosissimum, in multis morbis, medici, a Natura ipsa edocti, arte eliciunt cum insigni sæpe ægotantium commodo: de quo postea suo loco plenius agendum erit.

729. Minutus vel suppressus sudor halitusque cutis haud raro observantur. Deficiunt hæ ex-

cretiones paulatim propter vitæ genus otiosum et sedentarium, graves animi affectus (344, 346) qui impetum sanguinis valde minuunt, debilitatem fere omnem, cælum aut tempus frigidum et humidum, immunditiam, cibi genus durius, exhalatu difficilius, et demum propter plurima foramina cutis, et vasa minora, coarctata aut conclusa, veluti in senibus, quibus semper exhalatio per cutem parcior est, urina vero copiosior, pro rata parte, quam junioribus.

730. A tali defectu multa profiunt mala. Totum corpus plenum (nisi aucta alia secretio insolitam retentionem compensaverit) et hebes,

quoque demissus et tristis; nam hilaris et lætus animus
also cast down and sad; for a cheerful and joyful mind
 promovet exhalationem, et vicissim (lætus animus), quodammodo, effici-
promotes exhalation, and in turn, in some measure, is pro-
 tur a liberâ exhalatione. Concoctio, quoque, ciborum vitatur,
duced by a free exhalation. The digestion, also, of the food is depraved,
 et appetitus minuitur, propter insignem consensum inter
and the appetite is diminished, on account of the remarkable sympathy between
 cutem et ventriculum. Denique, est haud absimile totam
the skin and stomach. In fine, it is not improbable that the whole
 massam humorum corruptum iri paulatim, materiâ, quæ debuisset
mass of fluids would be corrupted gradually, by the matter, which ought
 excerni, retentâ diu, putrescente, vel saltem noxiâ.
to be excreted, being retained a long time, putrefying, or at least (becoming) noxious.

731. Autem sudor subito suppressus, nocet adhuc magis, et
But sweat suddenly suppressed, hurts still more, and
 citius; non modo propter materiam quam oporteret exhalare
more quickly; not only on account of the matter which it behoved (ought) to exhale
 retentam, sed propter humores, fluentes libere ad superficiem
being retained, but on account of the fluids, flowing plentifully to the surface
 corporis, pulsos inde, et directos in alias partes, validâ
of the body, being driven thence, and directed to other parts, by the strong
 contractionem vel spasmum inductis minutis vasis cutis. Hinc,
contraction or spasm induced in the minute vessels of the skin. Hence,
 febres, inflammationes, abnormes congestiones sanguinis, profluvia sanguinis
fevers, inflammations, irregular congestions of blood, fluxes of blood
 sæpe (nascuntur), quæ aliæ excretiones, imprimis urinæ et alvi,
often proceed, and the other excretions, especially of the urine and bowels,
 (sunt) auctæ et vitiatæ.
are increased and disordered.

732. Exhalatio et sudor supprimuntur sæpe et subito; imprimis
Perspiration and sweat are suppressed often and suddenly; especially
 a frigore admoto corpori æstuanti, vel interdum a gravibus
by cold applied to the body burning hot, or sometimes by depressing
 affectibus animi, quæ morbis generis spasmorum, veluti
passions of the mind, and by diseases of the order spasms, for instance
 hysteriâ. Supprimuntur quoque aliquâ contractionem, ut videtur,
hysteria. They are suppressed also by some contraction, as it seems,
 minutis vasis cutis, inductâ quibusdam causis, veluti quæ
in the minute vessels of the skin, induced by certain causes, as those which
 faciunt febres, tum intermittentes tum continuas, ratio quarum
cause fevers, as well intermitting as continual, the reason of which

et languidum fit, et animus quoque demissus et tristis; nam hilaris et lætus animus exhalationem promovet, et a libera exhalatione quodammodo efficitur vicissim. Concoctio quoque ciborum vitatur, et appetitus minuitur, propter insignem (357) inter cutem et ventriculum consensum. Denique, retenta diu materia putrescente, vel noxia saltem, quæ debuisset excerni, haud absimile est, totam massam humorum paulatim corruptum iri.

731. Subito autem suppressus sudor magis adhauc et citius nocet; non modo propter retentam materiam quam oporteret exhalare, sed propter humores, ad superficiem corporis libere fluentes, inde pulsos, et in alias partes directos,

valida contractionem vel spasmum vasis minutis cutis inductis. Hinc sæpe febres, inflammationes, congestiones sanguinis abnormes, sanguinis profluvia, aliæque excretiones, urinæ et alvi imprimis, auctæ et vitiatæ.

732. Exhalatio et sudor sæpe et subito supprimuntur: imprimis a frigore corpori æstuanti admoto, vel interdum a gravibus animi affectibus, morbisque spasmorum generis, veluti hysteriâ. Supprimuntur quoque contractionem aliqua, ut videtur, minutis vasis cutis inducta causis quibusdam, veluti quæ febres, tum intermittentes tum continuas, faciunt, quarum ratio parum hactenus intellecta est.

hactenus parum intellecta est.
hitherto has been little understood.

733. Urina quoque est sæpe nimis copiosa, sæpe diminuta vel
The urine also is often too copious, often diminished or
 suppressa, vel reddita ægre, et cum dolore, interdum etiam
suppressed, or voided difficultly, and with pain, sometimes even
 multum vitata. Redditur plurima, citra morbum, multo tenui
much vitiated. It is voided abundant(ly), without disease, by much thin
 humore diluente sanguinem, aut plurimo sale inficiente eundem,
fluid diluting the blood, or a great deal of salt infecting the same,
 et reddente acriorem solito, vel humoribus pulsâ a
and rendering it more acrid than usual, or the fluids being drawn from
 superficie corporis, et versis in internas partes. Ingens profluvium
the surface of the body, and directed to the internal parts. A great flow
 urinæ sæpe oritur, ab quovis acri inficiente sanguinem, et
of urine often arises, from any acrid infecting the blood, and
 delato ad renes, que irritante ipsos, radice Scillæ
conveyed to the kidneys, and irritating them, by the roots of the Scilla
 maritimæ, aut Colchici autumnalis, &c. Sæpe, etiam, urina
maritima, or of the Colchicum autumnale, &c. Often, also, the urine
 fluit limpida et copiosissima, a spasm, ut videtur, vasorum
flows limpid and very copious, from spasm, as it seems, of the vessels
 quæ vehunt sanguinem ad renes, sive ab irritatione ipsorum,
which carry the blood to the kidneys, or from irritation of themselves,
 veluti a calculo, sive a consensu cum aliis partibus,
for instance from a calculus, or from sympathy with other parts,
 fortasse intestinis, aut cute, veluti in hysteria. Denique, a
perhaps the intestines, or the skin, as in hysteria. In fine, from
 quodam vitio sæpe parum intellecto, sive renum sive
some disorder often little understood, whether of the kidneys or
 aliarum partium, sive demum universi corporis, incredibilis fluxus
of other parts, or finally of the whole body, an incredible flow
 urinæ aliquando observatus est, quæ ejus (urinæ) valde diversæ a
of urine sometimes has been observed, and it very different from
 sanâ urinâ, que continentis multum (oleum et) saccharum. Hoc
healthy urine, and containing much (oil and) sugar. This
 genus morbi vocatur Diabetes, natura et causæ cujus sunt
kind of disease is named Diabetes, the nature and causes of which are
 nondum plene deprehensæ: tamen, est probabile, præter vitia
not yet fully discovered: however, it is probable, besides the disorders
 renum, spasmus, relaxationem, &c. quandam corruptionem universæ
of the kidneys, spasm, relaxation, &c. that some corruption of the whole

733. Urina quoque sæpe nimis copiosa est, sæpe diminuta, vel suppressa, vel ægre et cum dolore reddita, interdum etiam multum vitata. Plurima redditur citra morbum multo tenui sanguinem diluente, aut plurimo sale inficiente, et acriorem solito reddente, vel humoribus a corporis superficie pulsâ, et in partes internas versis. Ingens sæpe urinæ profluvium oritur ab acri quovis sanguinem inficiente, et ad renes delato, ipsosque irritante; radice Scillæ maritimæ, aut Colchici autumnalis, &c. Sæpe etiam a spasm, ut videtur, vasorum quæ sanguinem ad renes vehunt, sive ab

ipsorum irritatione, veluti a calculo, sive a consensu cum aliis partibus, intestinis fortasse, aut cute, veluti in hysteria, urina limpida et copiosissima fluit. Denique, a vitio quodam parum sæpe intellecto, sive renum, sive aliarum partium, sive demum universi corporis, incredibilis aliquando observatus est urinæ fluxus, ejusque a sana urina valde diversæ, multumque saccharum constituentis. Hoc morbi genus vocatur Diabetes, cujus natura et causæ nondum plene deprehensæ sunt: tamen probabile est, præter renum vitium, spasmus, relaxationem, &c. corruptionem quandam universæ massæ san-

massæ sanguinis subesse, forsitan a pravâ concoctione, cum in
mass of blood exists, perhaps from depraved concoction, as well in
 ventriculo, tum quoque in pulmonibus: quoniam humor, adeo diversus
the stomach, as also in the lungs: because a fluid, so different
 a solito et naturali, derivatur a sanguine, que is, ut
from the usual and natural, is derived from the blood, and it, as it
 videtur, haud dissimilis alimentis nondum plene subactis
appears, not unlike to aliments not yet fully reduced (assimilated)
 justa concoctione.
by a due concoction.

734. Igitur ratio erit in aprico (figurative) cur nimius
Therefore the reason will be in the sum (evident) why an excessive
 fluxus urinæ noceat homini, nimirum viribus fractis,
flow of urine hurts a person, truly by the strength being broken,
 nutrimento impedito, que corpore exhausto. Neque, profecto, est
the nutriment impeded, and the body exhausted. Nor, indeed, is it
 mirum quosdam succubuisse tali morbo; et affectionem
wonderful that some should have sunk under such a disease; and that an affection
 vix intellectam sanari ægerrime, vel esse sæpe
scarcely understood should be cured with great difficulty, or should be often
 omnino insanabilem.
wholly incurable.

735. Autem profluvium urinæ, quamvis haud exiguum, plerumque
But a flow of urine, although not small, frequently
 est omnino levis momenti, et fugax malum familiare
is of altogether slight importance, and a transient disorder common
 laborantibus hysteriâ, que aliis morbis nervosi generis.
to those suffering from hysteria, and other diseases of the nervous system.

Juvabit, quoque, novisse nonnullos morbos, febres aliquando, et
It will benefit, also, to know that some diseases, fevers sometimes, and
 hydropem, varii generis, solvi tali profluvio. Quocirca factum
dropsy, of various description, are resolved by such a flow. Wherefore it was
 est, ut fuerit fere solenne medicis respicere ad statum
established, that it was almost customary with physicians to look to the state
 urinæ ægrotantium, imprimis febricitantium, que multi dederint
of the urine of sick persons, especially of feverish patients, and many bestowed
 operam ut redderent rationem varietatum ejus,
their labour (laboured) that they might render an account of the varieties of it,
 que variorum eventuum quos crederent prædici ex iis (sc. varieta-
and of the various events which they believed were predicted by them.
 tibus). Vero multum abest ut medici, nostris temporibus, confidant
But it is far from that physicians, in our times, confide

guinis subesse, forsitan a prava concoctione, cum in ventriculo, tum quoque in pulmonibus: quoniam humor, a solito et naturali adeo diversus, a sanguine derivatur, isque, ut videtur, haud dissimilis alimentis nondum justa concoctione plene subactis.

734. Ratio igitur in aprico erit, cur nimius urinæ fluxus homini noceat, fractis nimirum viribus, impedito nutrimento, exhausto corpore. Neque profecto mirum est, quosdam tali morbo succubuisse; et affectionem vix intellectam ægerrime sanari, vel sæpe omnino insanabilem esse.

735. Urinæ autem profluvium, quamvis haud exiguum, plerumque levis omnino momenti est et fugax malum, hysteriâ, aliisque nervosi generis morbis laborantibus familiare. Juvabit quoque novisse nonnullos morbos, febres aliquando, et hydropem varii generis, tali profluvio solvi. Quocirca factum est, ut medicis fere solenne fuerit ad statum urinæ ægrotantium, imprimis febricitantium, respicere, multique operam dederint, ut ejus varietatum rationem redderent, variorumque eventuum quos crederent ex iis prædici. Multum vero abest ut medici, nostris temporibus, tantum hujusmodi signis confidant

tantum quantum majores confisi essent signis hujus-
so much as our ancestors (predecessors) confided in signs of this
 modi. Vero est non dubium, notitiam istarum varietatum
sort. But it is not doubtful, that the knowledge of those changes
 fore interdum haud mediocris utilitatis sagaci et solerti
would be sometimes of no small utility to the sagacious and skilful
 medico, qui non spreverit vel minima.
physician, who will not despise even the most trifling things.

736. Postremo, ratio suasit, et experientia satis comprobavit,
Lastly, reason has advised, and experience has sufficiently proved,
 movere urinam præter solitum, arte, esse non inutile,
that to excite the urine beyond usual, by art, was not useless (was useful),
 in plurimis morbis; ratio cujus rei est reddenda
in very many diseases; the reason of which thing is to be rendered
 suo loco.
in its own place.

737. Urina sæpe supprimitur, cum insigni incommodo, et
The urine often is suppressed, with (to the) great disadvantage, and
 sane instante periculo ægotantis, nisi secretio vel excretio
indeed the imminent hazard of the patient, unless the secretion or excretion
 ejus fuerit brevi restituta. Hoc malum, cui nomen Ischuria
of it shall be quickly restored. This disorder, to which the name Ischuria
 datur, alii solent distinguere bifariam, alii quadri-
is given, some are accustomed to distinguish in a twofold, some in a fourfold
 fariam. Refert parum quot species morbi numeraverint,
manner. It matters little how many species of the disease they have enumerated,
 dummodo habeant bene perspectum multiplex malum
provided they have it clearly understood that this complicated disorder
 interdum ducere originem a variis vitiis renum, ureterum,
sometimes draws its origin from various diseases of the kidneys, of the ureters,
 vesicæ, urethræ, que vicinarum aut conspirantium partium.
of the bladder, urethra, and of the neighbouring or sympathising parts.
 Sic aliqua irritatio vel obstructio vel alterius vel utriusque renis,
Thus any irritation or obstruction either of one or both kidneys,
 vel ureteris, a calculo, sabulo, mucos, sanguine, inflammatione,
or of the ureter, from calculus, sand, mucus, blood, inflammation,
 suppuratione, scirrho, spasmo, tumore, et compressione vicinarum
suppuration, scirrhus, spasm, swelling, and compression of the contiguous
 partium, veluti a visceribus, et utero, aut abdomine ipso,
parts, as from the viscera, and uterus, or the abdomen itself,
 distentis a factu, vel stercore, vel aëre, vel aqua; vel non
being distended by the fætus, or fæces, or air, or water; either do not

quantum majores confisi essent. Non dubium vero est, notitiam istarum varietatum sagaci et solerti medico, qui vel minima non spreverit, haud mediocris interdum utilitatis fore.

736. Postremo, ratio suasit, et experientia satis comprobavit, plurimis in morbis non inutile esse urinam præter solitum arte movere; cujus rei ratio suo loco reddenda est.

737. Urina sæpe supprimitur cum insigni ægotantis incommodo, et sane instante periculo, nisi brevi restituta fuerit ejus secretio vel excretio. Malum hoc, cui nomen Ischuria datur, bifariam alii, alii quadrifariam, distinguere

solent. Parum refert quot morbi species numeraverint, dummodo bene perspectum habeant, multiplex malum a variis renum, ureterum, vesicæ, urethræ, partiumque vicinarum aut conspirantium vitiis, interdum originem ducere. Sic irritatio aliqua, vel obstructio, vel alterius, vel utriusque renis, vel ureteris, a calculo, sabulo, mucos, sanguine, inflammatione, suppuratione, scirrho, spasmo, partium vicinarum tumore et compressione, veluti a distentis visceribus et utero, aut ipso abdomine, a factu, vel stercore, vel aëre, vel aqua; vel non sicut urinam secerni, vel parcius justo, et sæpe multum muta-

sinunt urinam secerni, vel parcius justo, et sæpe permit the urine to be secreted, or more sparingly than proper, and often multum mutata; vel, denique, impediunt iter ejusdem much . changed; or, finally, prevent the passage of the same jam secretæ, ad vesicam. already secreted, to the bladder.

738. Quia et urina jam delata in vesicam, haud raro Moreover the urine already conveyed into the bladder, not unfrequently reprimatur ibi, propter varia vitia hujus organi, sæpe is retained there, by reason of the various disorders of this organ, often irritationem, vel inflammationem, vel spasmus, veluti a calculo, aut irritatio, or inflammation, or spasm, as from calculus, or acribus ingestis, aut consensu cum vicinis partibus; acrid things being ingested, or sympathy with the neighbouring parts; vel propter læsam fabricam vesicæ ipsius, veluti ab or on account of the injured structure of the bladder itself, as from hernia aut laceratione, vel propter debilitatem, aut paralyisin hernia or laceration, or on account of debility, or paralyisin fibrarum ejus, vero nonnunquam a nimia distentione, citra of the fibres of it, but sometimes from excessive distention, without paralyisin cujusvis alijs partis, ut observatur in generali paralyisi; vel paralyisi of any other part, as is observed in general paralyisi; or demum propter vesicam ipsam callosam, scirrhosam, ulceratam, vel even on account of the bladder itself being callous, scirrhous, ulcerated, or propter plurimum pus, aut crassiorem sanguinem, ve mucum, on account of a great deal of pus, or thicker blood, or mucus, vel calculum, obstructia collum vesicæ, vel denique, propter or calculus, obstructing the neck of the bladder, or lastly, by reason of haud pauca vitia urethræ, obstructæ, coarctatæ, vel concre- the no few diseases of the urethra, obstructed, constricted, or growing centis. Mala cujusmodi nonnunquam observata sunt, sine uliâ together. Diseases of which sort sometimes have been observed, without any notâ causâ, vero sæpe post venereos morbos imperite tractatos, known cause, but often after venereal diseases unskillfully treated, gonorrhœam virulentam, sanatam vel suppressam imprimis per varia the gonorrhœa virulenta, cured or suppressed first of all by various medicamenta, præsertim astringentia et acrida, vel etiam satis medicines, especially astringent and acrid, or even sufficiently blanda, infusa in urethram. bland, injected into the urethra.

739. Postremo, urina reprimatur in vesica a generali stupore, Lastly, the urine is retained in the bladder from general stupor, cerebro habente se male, veluti in quibusdam febribus, sicubi the brain having itself badly, as in certain fevers, whenever

tam; vel denique ejusdem jam secretæ iter ad vesicam impediunt.

738. Quia et urina in vesicam jam delata ibi haud raro reprimatur, propter varia hujus organi vitia, irritationem sæpe, vel inflammationem, vel spasmus, veluti a calculo, aut acribus ingestis, aut consensu cum partibus vicinis; vel propter læsam ipsius vesicæ fabricam, veluti ab hernia aut laceratione, vel propter debilitatem aut paralyisin ejus fibrarum, ut in paralyisi generali, nonnunquam vero a nimia distentione, ra alius cujusvis partis paralyisin (324), ob- vatur; vel demum propter vesicam ipsam

callosam, scirrhosam, ulceratam, vel propter plurimum pus, aut sanguinem mucumve crassiorem, vel calculum, collum vesicæ obstructia, vel denique propter vitia haud pauca urethræ, obstructæ, vel coarctatæ, vel concrecentis. Cujusmodi mala nonnunquam observata sunt sine ulla nota causa, sæpe vero post morbos venereos imperite tractatos, gonorrhœam virulentam imprimis per varia medicamenta, præsertim astringentia et acrida, vel etiam satis blanda, in urethram infusa, sanatam vel suppressam.

739. Postremo, a stupore generali (143, 173), cerebro male se habente (295), veluti in febribus

æger neque potest percipere solitum stimulum, ne quidem
the patient neither can perceive the ordinary stimulus, nor even
 multo graviorem, neque fibræ vesicæ ipsiùs cientur
a much more powerful one, nor are the fibres of the bladder itself excited
 in contractionem; quo fit ut hæc (sc. vesica) tandem
into contraction; whence it happens that it at length
 adeo distendatur, ut facta paralytica, possit vix, aut ne
is so distended, that rendered paralytic, it can scarcely, or not
 quidem vix, excitari iterum ad justam contractionem. Signum
even scarcely, be excited again to a due contraction. A symptom
 in febris, et sane omnibus morbis, semper malum, nonnunquam
in fevers, and indeed all diseases, invariably bad, sometimes
 fere lethale.
almost deadly.

740. Ingens, et aliquando fere incredibilis distentio vesicæ,
A great, and sometimes almost incredible distention of the bladder,
 oppressio, molestia, dolor, non modo ipsiùs, sed vicinarum
oppression, uneasiness, pain, not only of itself, but of the neighbouring
 partium, et sane universi corporis, oritur a urinâ sup-
parts, and indeed of the whole body, arises from the urine being sup-
 pressâ diu, quicquid demum fuerit causa ejus vitii;
pressed a long time, whatever indeed may have been the cause of that disorder;
 et forsân spasmus, vel insuperabilis contractio musculi qui
and perhaps spasm, or an insuperable contraction of the muscle which
 claudit ostium vesicæ, debilitas, aut vera paralysis aliarum
closes the mouth of the bladder, debility, or true paralysis of the other
 fibrarum, quæ contrahentes solent deplere eam, ita ut fistulâ
fibres, which contracting are accustomed to empty it, so that on the catheter
 immissâ ad educendam urinam quidem, hæc ne profuât;
being introduced to draw off the urine even, it does not flow forth;
 inflammatio vesicæ, et gangræna, aut laceratio; primo, gravis
inflammation of the bladder, and gangrene, or laceration; at first, severe
 irritatio universi corporis, deinde nausea, vomitus, vertigo,
irritation of the whole body, afterwards nausea, vomiting, vertigo,
 generalis stupor, inundatio totiùs massæ sanguinis, humore
general stupor, inundation of the whole mass of blood, with a fluid
 instar urinæ, qui demum effunditur in varia cava
like urine, which at length is poured out into the different cavities
 corporis, et capitis ipsiùs, inducturus soporem, tremores,
of the body, and of the head itself, about to induce sopor, tremors,
 convulsiones, et brevi mortem.
convulsions, and quickly death.

quibusdam, urina reprimatur in vesica, sicubi æger neque solitum stimulum, ne quidem multo graviorem percipere potest, neque fibræ ipsius vesicæ in contractionem cientur; quò fit ut hæc tandem adeo distendatur, ut paralytica facta, vix aut ne vix quidem ad justam contractionem iterum excitari possit. Signum in febris et sane omnibus morbis, semper malum, nonnunquam fere lethale.

740. A suppressa diu urina, quicquid demum ejus vitii causa fuerit, ingens oritur, et fere incredibilis aliquando, vesicæ distentio, oppressio, molestia, dolor, non ipsius modo, sed partium vicinarum, et sane universi corporis; et spasmus

forsân, vel contractio insuperabilis musculi qui vesicæ ostium claudit, debilitas aut vera paralysis (229, 81) aliarum fibrarum quæ contrahentes eam deplere solent, ita ut ne quidem immissa fistula ad educendam urinam, hæc profuât; inflammatio vesicæ, et gangræna aut laceratio; universi corporis gravis primo irritatio, deinde nausea, vomitus, vertigo, stupor generalis, inundatio totiùs massæ sanguinis humore instar urinæ (525, 526, 540) qui demum in varia cava corporis et capitis ipsius effunditur, soporem, tremores, convulsiones, et mortem brevi inducturus.

741. Urina redditur ægre et cum dolore, ab iisdem,
The urine is voided with difficulty and with pain, from the same,
 sed minus violentis, causis, scilicet, omni insolitâ irritatione, inflam-
but less violent, causes, namely, every unusual irritation, inflam-
 matione, ulcere, callo, calculo vesicæ, mucosâ ejus
mation, ulcer, callus, calculus of the bladder, the mucus (coat?) of it
 abraso, aut facto morbido, quibusdam acris medicamentis:
being abraded, or rendered morbid, by certain acrid medicines:

morbis vicinarum partium; quod genus mali vocatur Dysuria.
by diseases of contiguous parts; which kind of disorder is called Dysuria.

Urina, quoque, sæpe redditur rubra, nigra, sanguinolenta, purulenta,
The urine, also, often is voided red, black, bloody, purulent,
 mucosa, sabulosa: ratio omnium quarum rerum est haud obscura.
mucous, sandy: the reason of all which things is not obscure.

742. Frequentissimum vitium mingendi, accidit ubi
A very frequent disorder of making water, happens when
 molesta, fere perpetua, et inexplebilis cupiditas reddendæ urinæ,
a troublesome, almost perpetual, and insatiable desire of voiding the urine,
 urget, quamvis tantum paucæ guttulæ excernantur, plerumque,
troubles, although only a few little drops are excreted, for the most part,
 non sine aliquo dolore. Hoc malum vocatur Stranguria.
not without some pain. This disorder is called Strangury.

Quædam acria sæpe inducunt hoc vitium, etiam in sano homine;
Certain acrids often bring on this disorder, even in a healthy person;
 malum est familiare senibus, qui sæpe laborant a renibus
the disorder is common to old men, who often suffer from the kidneys
 et vesicâ, variis modis; sæpe oritur a calculo irritante
and bladder, in various ways; often it arises from a calculus irritating
 vesicam, aut vesicâ ipsâ inflammata, ulceratâ, orbatâ suo
the bladder, or the bladder itself being inflamed, ulcerated, deprived of its
 mucosâ, vel hoc corrupto propriis vitiis, vel denique a
mucus, or this being corrupted by its own disorders, or in fine by
 morbis, aut peculiari statu vicinarum aut consentientium
the diseases, or the peculiar state the neighbouring or sympathising
 partium, veluti uteri, vaginæ, urethræ, prostatæ glandulæ,
parts, as of the uterus, of the vagina, urethra, prostate gland,
 intestini recti, renum (sc. laborantium) inflammatione, tenesmo,
intestinum rectum, kidneys (suffering) from inflammation, tenesmus,
 calculo, prolapsu, graviditate.
calculus, prolapsus, pregnancy.

743. Quodammodo affinis huic est alia, neque rara affectio
In some degree akin to this is another, nor rare affection

741. Ab iisdem causis, sed minus violentis, omni scilicet irritatione insolita, inflammatione, ulcere, callo, calculo, vesicæ, mucosâ ejus abraso, aut morbido facto, acris quibusdam medicamentis, morbis vicinarum partium, urina ægre et cum dolore redditur: quod mali genus Dysuria vocatur. Urina quoque sæpe rubra, nigra, sanguinolenta, purulenta, mucosa, sabulosa, redditur; quarum rerum omnium haud obscura est ratio.

742. Frequentissimum mingendi vitium accidit, ubi molesta fere perpetua et inexplebilis urinæ reddendæ cupiditas urget, quamvis paucæ tantum guttulæ excernantur, plerumque

nou sine dolore aliquo. Hoc malum Stranguria vocatur. Acria quædam, etiam in sano homine, hoc vitium sæpe inducunt; malum senibus familiare est, qui sæpe a renibus et vesica variis modis laborant; oritur sæpe a calculo vesicam irritante, aut ipsa vesica inflammata, ulcerata, suo mucosâ orbatâ, vel hoc propriis vitiis corrupto, vel denique a morbis aut statu peculiari partium vicinarum, aut consentientium, veluti uteri, vaginæ, urethræ, glandulæ prostatæ, intestini recti, renum, inflammatione, tenesmo, calculo, prolapsu, graviditate.

743. Huic quodammodo affinis est alia, neque rara meiendi affectio, scilicet ubi lotium, ut

meiendi, scilicet, ubi lotium nequit retineri ut decet,
of making urine, that is, when the urine cannot be retained as it ought,
 et excerni justâ copiâ et tempore, sed ægrotante vel
and be excreted in the due quantity and time, but the sick person either
 nolente, vel prorsus inscio, redditur propriâ actione
being unwilling, or wholly unconscious, it is voided by the proper action
 suorum organorum, nullo imperio voluntatis adhibito, ut
of their own organs, no control of the will being applied, as
 solet in sanis; aliquando effluit assidue, et
is accustomed in healthy persons; sometimes flows out constantly, and
 fere guttatim, ægro inscio, quod strictius vocatur
almost drop by drop, the patient being unconscious, which more strictly is called
 Incontinentia urinæ, vero interdum urina retinetur aliquamdiu,
incontinence of urine, but sometimes the urine is retained for some time,
 tandem profluxura, majore copiâ, quamvis ægrotante adhuc
at length to flow forth, in greater quantity, although the patient as yet
 invito, vel saltem inscio.
unwilling, or at least unconscious.

744. Homo sæpe fit incontinens urinæ propter debilitatem,
A person often becomes incontinent of urine on account of debility,
 paralyzin, ulcus, vulnus, gravem et diurnam irritationem vesicæ,
paralysis, ulcer, wound, severe and continued irritation of the bladder,
 præsertim muscui qui præponitur ostio ejus, veluti a
especially of the muscle which is set before the mouth of it, as from
 calculo, aut generali paralyzi, aut difficili partu, inferente
a calculus, or general paralysis, or difficult parturition, doing
 magnam vim vicinis partibus. Simile vitium observatur
great violence to the contiguous parts. A similar disorder is observed
 in plurimis morbis, imprimis in febris, et hydrope capitis,
in many diseases, especially in fevers, and dropsy of the head,
 ubi est tantus sopor, ut æger non percipiat propensionem,
where there is so much sopor, that the patient cannot perceive the propensity,
 quamvis vesica ipsa, et muscui respirationis qui consentiunt
although the bladder itself, and the muscles of respiration which sympathise
 cum eo, pareant solito stimulo. Ratio est fere par cur
with it, obey the usual stimulus. The reason is almost similar why
 multi pueri, alioquin sanissimi, non bene retinent urinam,
many children, otherwise very healthy, do not well retain their urine,
 præsertim inter somnum: nimirum quibus sunt secretiones
especially during sleep: as being persons who have the secretions
 magis copiosæ, et somni altiores, haud adeo faciles ruptu,
more abundant, and the slumbers deeper, not so easy to be broken,

decet, retineri nequit, et justa copia et tempore
 excerni, sed vel nolente vel inscio prorsus
 ægrotante, propria suorum organorum actione
 redditur, nullo, ut in sanis solet, adhibito
 voluntatis imperio; et aliquando inscio ægro,
 assidue, fere guttatim effluit, quod strictius
 incontinentia urinæ vocatur: interdum vero
 urina retinetur aliquamdiu, majore copia,
 quamvis invito adhuc, vel inscio saltem ægro-
 tante, tandem profluxura.

744. Homo urinæ incontinens sæpe fit, propter
 debilitatem, paralyzin, ulcus, vulnus, gravem
 et diurnam irritationem vesicæ, præsertim

muscui qui ostio ejus præponitur, veluti a cal-
 culo, aut paralyzi generali, aut partu difficili
 magnam vim partibus vicinis inferente. Simile
 vitium in plurimis morbis observatur, imprimis
 in febris et hydrope capitis, ubi tantus sopor
 est, ut æger propensionem non percipiat, quam-
 vis solito stimulo vesica ipsa, et qui cum eo
 consentiunt muscui respirationis, pareant. Par
 fere ratio est, cur multi pueri urinam non bene
 retinent, præsertim inter somnum, alioquin
 sanissimi: nimirum, quibus secretiones magis
 copiosæ sunt, et somni altiores haud adeo
 faciles ruptu, et fibræ omnes musculorum

et omnes fibræ musculorum mobiliiores, et igitur vesica
and all the fibres of the muscles more irritable, and therefore the bladder
 magis impatiens amplificationis quam adultis. Urina nonnunquam
more impatient of enlargement than adults. The urine sometimes
 continetur ægre, propter tumores vicinarum partium
is retained with difficulty, because of tumours of the neighbouring parts
 comprimentes vesicam, veluti graviditatem. Aliquando ejcitur
compressing the bladder, as pregnancy. Sometimes it is ejected
 violentissime, præter naturam, vel generalibus spasms, vel vehementibus
very violently, beyond nature, either by general spasms, or by violent
 contractionibus musculorum respirationis, quales valde comprimunt
contractions of the muscles of respiration, such as greatly compress
 totum abdomen, veluti in tussi, sternutatione, risu, partu, &c.
the entire abdomen, as in cough, sneezing, laughing, parturition, &c.

745. Denique oportet annumerare, inter vitia urinæ,
In fine it behoves to reckon, amongst the disorders of the urine,
 formationem calculorum, quales solent facessere tot que
the formation of calculi, such as are accustomed to produce so many and
 tanta mala. Urina, præter aquam que sales, continet haud
such great diseases. The urine, besides water and salts, contains no
 exiguam portionem terræ, et glutinosæ partis sanguinis, jam
small portion of earth, and of the glutinous part of the blood, already
 nonnihil corruptæ, et pronæ in ulteriorem corruptionem.
somewhat corrupted, and prone to farther corruption.

746. Hinc fit ut urina, etiam sanissimi hominis,
Hence it happens that the urine even of the most healthy person,
 dum frigescit, deponat copiosum sedimentum, quale solet
whilst it is cooling, deposits a copious sediment, such as is accustomed
 brevi incrustare matulam. In sano homine urina demittit
quickly to incrust the urinal. In a healthy person the urine throws down
 nihil istiusmodi intra corpus, vero si vel minimum frustum
nothing of that sort within the body, but if even the smallest fragment
 cujusvis solidæ materiæ fuerit immissum in vesicam, et relictum
of any solid matter should be introduced into the bladder, and left
 ibi, tegitur brevi tali crustâ, et paulatim crescit in
there, it is covered quickly with such a crust, and gradually grows into
 magnam molem. Est probabile quædam vitia humorum, forsitan
a great bulk. It is probable that some diseases of the fluids, perhaps
 parum intellecta, aliquando subesse, et multum augere proclivitatem
little understood, sometimes are present, and greatly increase the proneness
 ad formandum calculum. Enim probe constat, non modo
to form the calculus. Moreover it is well established, not only

mobiliiores, et igitur vesica amplificationis magis impatiens quam adultis. Urina nonnunquam ægre continetur propter tumores partium vicinarum vesicam comprimentes, veluti graviditatem. Aliquando præter naturam ejcitur violentissime, vel *spasms* generalibus, vel vehementibus contractionibus musculorum respirationis, quales totum abdomen valde comprimunt, veluti in tussi, sternutatione, risu, partu, &c.

745. Denique, inter urinæ vitia annumerare oportet calculorum formationem, quales tot tautaque mala facessere solent (63). Urina, præter aquam salesque, portionem haud exi-

quam continet terræ et glutinosæ partis sanguinis, jam nonnihil corruptæ, et in ulteriorem corruptionem pronæ.

746. Hinc fit, ut sanissimi etiam hominis urina, copiosum, dum frigescit, sedimentum deponat, quale matulam brevi solet incrustare. In sano homine, urina intra corpus nihil istiusmodi demittit; si vero frustum vel minimum cujusvis materiæ solidæ in vesicam immissum, et ibi relictum fuerit, brevi tegitur tali crusta, et crescit paulatim in magnam molem. Probabile est, vitia quædam humorum, parum forsitan intellecta, aliquando subesse, et proclivitatem ad calculum formandum multum augere. Probe

morbum sæpe observari congenitum et hereditarium, verum
that the disease often is observed congenital and hereditary, but
 etiam homines qui laborant calculo esse sæpius obnoxios
also that men who suffer from calculus are very often liable
 morbis ventriculi, imprimis acori, que multos eorum
to diseases of the stomach, especially acidity, and that many of them
 accepisse haud exiguum levamen a variis remediis, qualia
have received no slight relief from different remedies, such as
 vel impediunt acorem in ventriculo et intestinis, vel corrigant
either prevent acidity in the stomach and intestines, or correct it
 jam existentem ibi. Porro, fuit olim et nuper opinio,
already existing there. Moreover, it was formerly and lately the opinion,
 aliud genus victus, et præsertim potus, acida vina, vel vina
that one kind of food, and especially of drink, acid wines, or wines
 parata è pomis, &c. facere homines calculosos,
prepared from apples, &c. rendered men calculous (disposed to calculi),
 aliud fere præstare eos incolumes a tali morbo.
that a different one commonly preserved them safe from such a disease.
 Quamvis omnia hæc sint minus firma, tamen est non
Although all these things may be less established, however it is not
 negandum, urinam esse plus minus sabulosam aliis atque aliis
to be denied, that the urine is more or less sandy in different
 hominibus, et vel continere plus concrecentis materiæ, vel
persons, and either that it contains more of the concreting matter, or
 facilius demittere eam quam continet, vel ipsam (sc. urinam),
that it more easily throws down that which it contains, or that itself,
 demum, facilius converti in talem materiam.
in fine, more readily is converted into such a material.

747. Præterea, a variis causis, quibusdam hominibus præ cæteris,
Besides, from various causes, in some persons before others,
 nuclei, quales fuerint fundamenta calculorum, formabuntur in
the nuclei, such as have been foundations of calculi, will be formed in
 viis quas urina subit. Sic, mucus ipse
the passages which the urine passes through. Thus, the mucus itself
 renum, vel secretus, morbosus, propter vitia suorum
of the kidneys, either secreted, diseased, because of the disorders of their own
 organorum, puta inflammationem, vel jam
organization (structure), for instance inflammation, or (when) already
 secretus, spissatus, aut coactus in crassiorem massam, vel sanguis,
secreted, thickened, or congealed into a thicker mass, or blood,
 vel gluten, vel pus, delapsa è vasis, propter relaxationem
or gluten, or pus, having escaped from the vessels, by reason of relaxation

eum constat, morbum non modo congenitum
 sæpe, et hæreditarium observari, verum etiam
 homines qui calculo laborant sæpius ventriculi
 morbis, acori imprimis, obnoxios esse, multos-
 que eorum haud exiguum levamen accepisse a
 variis remediis, qualia acorem in ventriculo et
 intestinis vel impediunt, vel ibi jam existentem
 corrigant. Porro, olim et nuper opinio fuit,
 aliud victus, et potus præsertim, genus, viua
 acida, vel viua e pomis parata, &c. homines
 calculosos facere, aliud, eos fere incolumes a
 tali morbo præstare. Quamvis hæc omnia minus
 firma sint, tamen non est negandum, urinam

aliis atque aliis hominibus plus minus sabulo-
 sam esse, et vel plus materiæ concrecentis
 continere, vel eam quam continet facilius
 demittere, vel ipsam demum facilius in talem
 materiam converti.

747. Præterea, a variis causis, quibusdam præ
 cæteris hominibus, nuclei in viis quas urina
 subit formabuntur, quales fundamenta fuerint
 calculorum. Sic mucus ipse renum, vel mor-
 bosus secretus, propter vitia suorum organo-
 rum, puta inflammationem, vel jam secretus,
 spissatus, aut coactus in massam crassiorem,
 vel sanguis, vel gluten, vel pus, e vasis delapsa,

aut inflammationem, aut demum concretiones, vel minimæ formatæ
 or inflammation, or finally concretions, even the smallest formed
 in rene, dabunt nucleos.
 in the kidney, will afford nuclei.

748. Vero concretiones hujusmodi, utcunque exiguæ primo, indies
 But concretions of this sort, however small at first, daily
 crescunt, propter rationes memoratas. Sæpe descendunt sponte
 increase, by reason of the causes mentioned. Often they descend spontaneously
 e renibus, sine magno dolore aut incommodo, neque commo-
 from the kidneys, without great pain or inconvenience, nor do they
 rantur in vesicâ, sed brevi excernuntur cum urinâ. Vero
 remain in the bladder, but quickly are excreted with the urine. But
 sæpius hærent in renibus donec adeptæ fuerint molem
 more often they remain in the kidneys until they have acquired a size
 tantam, quanta descenderit ægre per ureterem. Aliquando
 so great, as will descend with difficulty by the ureter. Sometimes
 latent diu in rene, nocentes parum, neque suspectæ
 they lie hid a long time in the kidney, injuring little, nor suspected
 priusquam delapsæ in ureterem, irritent et obstruant
 before that having fallen down into the ureter, they irritate and obstruct
 hunc, que afficiant vel alterum vel utrumque renem per consensum,
 this, and affect either one or both kidney by sympathy,
 et convellant totum corpus. Hinc ingens et dira cohors
 and convulse the whole body. Hence a great and dreadful train
 malorum: sæpe immanis dolor, ureteris, renum, que vicinarum
 of diseases: often severe pain, of the ureter, of the kidneys, and contiguous
 partium, nausea, vomitus, depravata concoctio ciborum, contractio
 parts, nausea, vomiting, depraved concoction of the food, contraction
 ureteris, qui instruitur moventibus fibris, obstructio urinæ,
 of the ureter, which is furnished with moving fibres, obstruction of urine,
 gravis irritatio, sæpe inflammatio, aliquando suppuratio renis,
 severe irritation, often inflammation, sometimes suppuration of the kidney,
 stranguria, dysuria, ischuria, urina interdum limpida, sæpe mucosa,
 strangury, dysuria, ischuria, the urine sometimes limpid, often mucous,
 quasi purulenta, vel sanguinolenta, vel nigra, et febris aliquando
 as if purulent, or bloody, or black, and the fever sometimes
 vehemens; nonnunquam renalis tabes, aliquando mira corruptio,
 intense; sometimes renal tabes, sometimes a wonderful corruption,
 obstructio, tumor, macies, fere destructio renis, ita ut alter
 obstructio, tumour, wasting, almost destruction of the kidney, so that the one
 aliquando visus fuerit, cadavere aperto defuisse.
 sometimes has seemed, on the dead body being opened, to have been wanting.

propter relaxationem aut inflammationem; aut in rene demum concretiones vel minimæ formatæ, nucleos dabunt.

748. Hujusmodi vero concretiones utcunque primo exiguæ, indies crescunt, propter rationes (746) memoratas. Sæpe descendunt e renibus sponte, sine magno dolore aut incommodo, neque in vesica commorantur, sed brevi cum urina excernuntur. Sæpius vero in renibus hærent, donec tantam adeptæ fuerint molem, quanta ægre per ureterem descenderit. Diu aliquando in rene latent, parum nocentes, neque prius suspectæ, quam in ureterem delapsæ hunc irritent et obstruant, renemque vel alterum vel

utrumque per consensum afficiant, et totum corpus convellant. Hinc ingens et dira malorum cohors: dolor sæpe immanis ureteris, renum, partiumque vicinarum, nausea, vomitus, concoctio ciborum depravata, contractio ureteris, qui fibris moventibus instruitur, obstructio urinæ, gravis irritatio, sæpe inflammatio, aliquando suppuratio renis, stranguria, dysuria, ischuria, urina limpida interdum, sæpe mucosa, quasi purulenta, vel sanguinolenta, vel nigra, et febris aliquando vehemens; nonnunquam tabes renalis, mira aliquando corruptio, obstructio, tumor, macies, fere destructio renis, ita ut alter aliquando aperto cadavere defuisse

Sæpe, etiam, dum calculus hæret in uretere, vel descendit
Often, also, whilst the calculus sticks in the ureter, or descends
 ægrius per eum, dolor propagatur ad testem, vel crus
more difficultly through it, pain is propagated to the testicle, or leg
 ejusdem lateris; vero ægri frequentius conqueruntur de
of the same side; but the patients more frequently complain of
 stupore cruris, et sensu quasi testis esset retractus. Hæc
numbness of the leg, and a feeling as if the testicle was drawn up. These
 signa, ipsa profecto levis momenti, ducentia originem a
signs, themselves indeed of slight importance, deriving their origin from
 spermaticâ fune, jacente proxime sub uretere, compressâ, vel
the spermatic cord, lying close under the ureter, being compressed, or
 saltem a quibusdam ramulis, forsân minutissimis, nervorum,
at least from some little branches, perhaps very minute, of nerves,
 tendentibus per psoam musculum ad testem vel crus,
going through the psoas muscle to the testicle or leg (thigh),
 irritatis vel compressis, sive ab meatu ipso urinæ dis-
ting irritated or compressed, or from the meatus itself of urine being dis-
 tento plurimum, sive a isto musculo, propter viciniam atque
tended very much, or from that muscle, on account of the vicinity and
 consensum cum parte laborante, tumente, vel fortasse inflammato,
sympathy with the part suffering, swelling, or perhaps being inflamed,
 tamen jure (sc. signa) vindicant sibi attentionem
nevertheless properly claim to themselves the attention
 medici, quatenus, plerumque, manifeste declarent
of the physician, inasmuch as, for the most part, they manifestly announce
 naturam morbi, stipati signis cæteroquin nonnunquam
the nature of a disease, accompanied with symptoms otherwise sometimes
 ambiguis.
doubtful.

749. Causa tot malorum est satis in aprico: neque
The cause of so many disorders is sufficiently evident: nor
 ratio obscura, quâ calculus paulatim descendat, lotio
is the principle obscure, upon which a calculus gradually descends, the urine
 urgente, et meatu ipso urinæ distento aut relaxato:
forcing (it), and the meatus itself of urine being distended or relaxed:
 neque ratio medendi obscurior, ad mitiganda singula
nor is the method of curing more obscure, to mitigate the individual
 mala quæ urgent maxime, vel expediendum descensum calculi,
evils which urge most, or facilitate the descent of the calculus,
 remediis quæ summoveant vel temperent inflammationem et febrem,
by remedies which can remove or moderate inflammation and fever,

visus fuerit. Sæpe etiam, dum calculus in uretere hæret, vel ægrius per eum descendit, dolor ad testem, vel crus ejusdem lateris, propagatur: frequentius vero de stupore cruris, et sensu quasi testis retractus esset, conqueruntur ægri. Hæc signa, ipsa profecto levis momenti, a compressa fune spermatica, proxime sub uretere jacente, vel saltem a ramulis quibusdam, forsân minutissimis nervorum per psoam musculum ad testem vel crus tendentibus, irritatis, vel compressis, sive ab ipso meatu urinæ plurimum distento, sive a musculo isto propter viciniam atque consensum (362) cum parte laborante,

tumente, vel fortasse inflammato, originem ducentia, medici tamen attentionem jure sibi vindicant, quatenus naturam morbi, ambiguis cæteroquin signis nonnunquam stipati, manifeste plerumque declarent.

749. Causa tot malorum satis in aprico est: neque obscura ratio qua calculus paulatim descendat, urgente lotio, et distento aut relaxato ipso urinæ meatu: neque obscurior medendi ratio ad mitiganda singula mala quæ maxime urgent, vel expediendum calculi descensum, remediis quæ inflammationem et febrem summoveant vel temperent, quæ sensum minuant,

quæ minuunt sensum, tollant irritationem, solvant contractionem
which can lessen sensibility, carry off irritation, relax the contraction
 meatûs ipsiûs, laxent totum corpus, depleant intestina,
of the meatus itself, unbrace the whole body, empty the intestines,
 compescant vomitum, que eluant vias quas urina subit,
restrain vomiting, and wash out the channels which the urine passes,
 diluant urinam ipsam, que foveant irritata et dolentia organa
dilute the urine itself, and foment the irritated and painful organs
 ejûs, et oblinant gummoso aut glutinoso humore, qui
of it, and anoint them with a gummy or glutinous fluid, which
 fungatur officio naturalis muci, abrasa vi
may perform the office of the natural mucus, carried off by the violence
 morbi.
of the disease.

750. Hoc modo præcavetur ab instanti periculo: vero proficitur
In this manner it is guarded from instant danger: but it is advanced
 parum, si calculus hæserit in vesicâ, quia tum, crescens
little, if the calculus should stop in the bladder, because then, increasing
 paulatim, nequit brevi excerni, et inducit gravem irritationem,
by degrees, it cannot quickly be excreted, and brings on severe irritation,
 tum dolorem vesicæ, sed adhuc magis ostii urethræ,
then pain of the bladder, but still more of the orifice of the urethra,
 stranguriam, dysuriam, ischuriam, incontinentiam urinæ, inflammationem,
strangury, dysuria, ischuria, incontinence of urine, inflammation,
 suppurationem, ulcus, gangrænâ, callum vesicæ, et tandem
suppuration, ulcer, gangrene, callus of the bladder, and at length
 (nisi æger citius succumbat his malis,) viribus
(unless the sick quickly yield (sink under) to these evils,) the strength
 miseri exhaustis perpetuo dolore et irritatione.
of the wretched person being exhausted by constant pain and irritation,
 lentam febrem, hecticam, maciem et tabem, tarde fortasse, sed
slow fever, hectic, emaciation and wasting, slowly perhaps, but
 certe lethales.
certainly fatal.

751. Postremo, non prætereundum est silentio, secernentia organa,
Lastly, we must not pass over in silence, that the secreting organs,
 quæ strictius vocantur Glandulæ, esse, præ reliquis
which more strictly are called Glands, are, before (more than) the remaining
 partibus corporis, obnoxia obstructioni, et quibusdam diris malis
parts of the body, liable to obstruction, and some terrible disorders
 quæ profluunt ex eâ (sc. obstructione).
which proceed from it.

irritationem tollant, contractionem ipsius meatus solvant, totum corpus laxent, intestina depleant, vomitum compescant, viasque quas urina subit eluant, ipsam urinam diluant, ejusmodi organa irritata et dolentia foveant et oblinant gummoso aut glutinoso humore, qui naturalis muci, vi morbi abrasa, officio fungatur.

750. Hoc modo ab instanti periculo præcavetur: parum vero proficitur, si in vesica calculus hæserit, quia tum paulatim crescens brevi excerni nequit, et gravem irritationem, dolorem tum vesicæ, sed magis adhuc ostii

urethræ, stranguriam, dysuriam, ischuriam, incontinentiam urinæ, inflammationem, suppurationem, ulcus, gangrænâ, callum vesicæ, inducit, et tandem (nisi his malis citius æger succumbat) exhaustis miseri viribus, perpetuo dolore et irritatione, febrem lentam, hecticam, maciem, et tabem, tarde fortasse, sed certe lethales.

751. Postremo, silentio non est prætereundum, organa secernentia, quæ strictius Glandulæ vocantur, obstructioni, et diris quibusdam quæ ex ea profluunt malis, præ reliquis partibus corporis obnoxia esse.

752. Hinc sæpe insignis tumor, et mirâ durities, non modo
Hence often great swelling, and wonderful hardness, not only
 sine dolore, sed sæpe cum minuto sensu affectæ partis;
without pain, but frequently with diminished sensibility of the affected part;
 quod genus mali vocatur Scirrhus. Idem (sc. scirrhus) aliquando
which kind of disorder is called Scirrhus. The same sometimes
 manet diu sine dolore, vel sane ullâ molestiâ: vero ocyus
remains a long time without pain, or truly any inconvenience: but sooner
 serius incipit dolere, et quidem acerrime; paulatim
or later it begins to be painful, and indeed very acutely so; by degrees
 abit in tardam atque malignam suppurationem, et tandem
it goes off into slow and malignant suppuration, and at length
 fit horrendum ulcus, primo non modo consumens affectam
becomes a horrible ulcer, at first not only consuming the affected
 partem, sed depascens omnes vicinas, et corrumpens totum
part, but feeding upon all the contiguous (parts), and corrupting the whole
 corpus acerrimo et immedicabili veneno. Hoc vocatur Carcinoma,
body with a very acrid and incurable poison. This is called Carcinoma,
 nonnunquam subito lethale, scilicet magnâ arteriâ aut venâ
sometimes suddenly fatal, that is by a large artery or vein
 erosâ, vero plerumque inducturum lentam et miserandam tabem,
being eroded, but generally will bring on slow and miserable wasting,
 interdum cum hecticâ febre, certissime exitiali.
sometimes with hectic fever, most certainly fatal.

753. Ratio horrendi mali hactenus est obscura. Tamen,
The cause of this horrid disease as yet is obscure. However,
 videtur credible, fabricam glandularum reddere motum
it seems credible, that the structure of the glands renders the motion
 sanguinis præter solitum languidum in iis: unde obstructio
of the blood unusually languid in them: whence obstruction
 facilior, et imperfecta et maligna suppuratio (est.) Porro,
is more easy, and an imperfect and malignant suppuration (arises.) Moreover,
 peculiaris constitutio corporis, sæpe congenita et hæreditaria, reddit
a peculiar constitution of body, often congenital and hereditary, renders
 homines opportunos huic morbo: scilicet, debilis, et languida, et
persons liable to this disease: that is, a weak, and languid, and
 torpida constitutio. Strumosi, quoque, observantur esse, præ aliis
torpid constitution. Strumous persons, also, are observed to be, more than other
 hominibus, obnoxii huic diro morbo. Morbus est multo
persons, liable to this dreadful disease. The disease is by much
 frequentior in vetulis quam junioribus, que in iis qui fuerint
more frequent in old women than in younger, and in those who have been

752. Hinc sæpe tumor insignis, et mirâ durities, non modo sine dolore, sed sæpe cum minuto partis affectæ sensu; quod mali genus Scirrhus vocatur. Idem diu aliquando manet sine dolore, vel sane ulla molestia: serius ocyus vero in suppurationem tardam atque malignam abit, et tandem ulcus horrendum fit, non modo partem primo affectam consumens, sed vicinas omnes depascens, et totum corpus acerrimo et immedicabili veneno corrumpens. Hoc Carcinoma vocatur, nonnunquam subito lethale, erosa scilicet magna arteria aut vena, plerum-

que vero lentam et miserandam tabem, interdum cum febre hecticâ certissime exitiali, inducturum. 753. Ratio horrendi mali hactenus obscura est. Credibile tamen videtur, fabricam glandularum motum sanguinis in iis præter solitum languidum reddere: unde facilior obstructio, et imperfecta, et maligna suppuratio. Porro, constitutio corporis peculiaris, sæpe congenita et hæreditaria, homines huic morbo opportunos reddit: constitutio scilicet, debilis, et languida, et torpida. Strumosi quoque, diro huic morbo, præ aliis hominibus, obnoxii esse observantur. In vetulis quam junioribus multo frequentior

vel debilitati ignaviâ, vel exhausti nimiâ et perpetuo labore:
either debilitated by idleness, or exhausted by excessive and constant labour:
 et in iis, demum, qui tolerant vitam pravo victu,
and in those, at length, who support their life (live) upon depraved diet,
 parum nutriente, difficili concoctu; vel, denique, quibus graves
no way nourishing, difficult to be digested; or, lastly, in whom severe
 et diuturni affectus animi multum fregerint omnes
and long continued affections of the mind have greatly broken down all
 vires, præsertim quæ movent sanguinem.
the powers, especially those which circulate the blood.

754. Scirrhus sæpe incipit sine notâ externâ causâ; aliquando
Scirrhus often begins without a known external cause; sometimes
 accedit post inflammationem non bene resolutam; sæpius
it comes on after inflammation not well resolved; more frequently
 oritur a externâ vi illatâ parti refertæ glandulis; neque
it arises from external violence done to a part full of glands; nor
 ratio harum rerum obscura, nimirum quæ lædant fabricam
is the reason of these things obscure, as being things which injure the structure
 glandulæ, que sæpe obstruant eam. Hic, omnibus rite per-
of the gland, and often obstruct it. Here, all things being rightly con-
 pensis, non erit mirum morbum, etiam incipientem,
sidered, it will not be wonderful that the disease, even when beginning,
 difficillimum sanatu, tandem inveteratum, evadere insanabilem.
is very difficult to be cured, at length inveterated, becomes incurable.

CAP. XXI.

CHAP. XXI.

De facultate generandi in utroque sexu, que variis morboris
Of the faculty of generating in both sex, and the various diseased
 affectionibus ejus, et organorum quæ inserviunt ei.
affections of it, and of the organs which subserve to it.

755. Quoniam singuli homines, annis labentibus, senescunt et
Because individual men, the years gliding on, grow old and
 moriuntur, secundum leges Naturæ; cautum est, (ut)
die, according to the laws of Nature; it has been provided, that
 genus ipsum ne pereat, mirabili facultate quâ (sc. facultate)
the race itself should not perish, by the wonderful faculty which

est morbus, inque iis qui vel ignavia debilitati fuerint, vel nimia et perpetuo labore exhausti: et in iis demum qui victu pravo, parum nutriente, difficili concoctu, vitam tolerant, vel denique quibus animi affectus graves et diuturni, vires omnes, præsertim quæ sanguinem movent, multum fregerint.

754. Incipit sæpe scirrhus sine nota causa externa; aliquando post inflammationem non bene resolutam accedit; sæpius a vi externa parti glandulis refertæ illata oritur: neque harum rerum obscura ratio, nimirum quæ

fabricam glandulæ lædant, eamque sæpe obstruant. Hic omnibus rite perpensis, non mirum erit morbum, etiam incipientem sanatu difficillimum, inveteratum tandem, insanabilem evadere.

CAP. XXI.—De Generandi Facultate in utroque Sexu, variisque ejus et quæ ei inserviunt Organorum Affectionibus Morboris.

755. QUONIAM singuli, secundum Naturæ leges, homines, labentibus annis, senescunt et moriuntur; ne genus ipsum pereat, cautum est

homo et omne animal fruitur gignendi prolem ex sese,
man and every animal enjoys of generating an offspring from himself,
 similem (sc. sui).
similar to itself.

756. Quamvis nemo hominum hactenus perscrutatus sit hoc
Although none of men hitherto has thoroughly investigated this
 ultimum arcanum Naturæ, neque fortasse unquam fuerit, cuiquam
last secret of Nature, nor perhaps ever will there be, to any one
 mortalium, facultas explorandæ aut explanandæ penitus rei
of mortals, the power of examining or of explaining thoroughly a subject
 adeo obscuræ; tamen, omnis medicus facturus est pretium
so obscure; nevertheless, every physician will reap the reward
 operæ qui didicerit singulares res veras, pertinentes huc,
of his labour who will learn the individual facts true, pertaining to this subject,
 utcunque exiguas et imperfectas, quas vel ratio docuit, vel
however scanty and imperfect, which either reason has taught, or
 observatio comprobavit: præsertim quum non modo functio ipsa,
observation has proved: especially since not only the function itself,
 haud levis momenti, sit obnoxia suis vitiis, sed status
of no slight moment, is liable to its own disorders, but the condition
 quoque partium quæ inserviunt eidem, multum afficiat
also of the parts which subserve to the same, may greatly affect
 universum corpus, que sæpe vel inducat varios morbos, vel
the entire body, and often either induce various diseases, or
 solvat jam urgentes.
resolve them already troubling.

757. Primâ ætate est nulla genitalis vis: vero, certâ
At the first age there is no generative power: but, at a certain
 ætate, plerumque circa decimum quartum annum, quum compago
age, generally about the fourteenth year, when the frame
 corporis, jam facta firmior, que quædam partes, ut videtur,
of the body, now become more firm, and certain parts, as it seems,
 appropinquant ad justam formam et magnitudinem, dirigunt
approaching to their due shape and size, direct
 cursum sanguinis alio, masculina genitalia organa, prius
the current of the blood elsewhere, the male generative organs, before
 inutilia et parva, et crescentia lente cum reliquo corpore, tantum
useless and small, and growing slowly with the rest of the body, only
 pro rata parte, subito mutantur, crescunt, et evolvuntur,
in proportion to the part, suddenly are changed, grow, and are evolved,
 facta idonea ad propria munera. Tum pubes
rendered fitted to their proper functions. Then the hair of the pubes

mirabili facultate qua homo et omne animal fruitur, ex sese prolem similem gignendi (12,13).

756. Quamvis nemo hominum hoc ultimum Naturæ arcanum lacteus perscrutatus sit, neque fortasse cuiquam mortalium rei adeo obscuræ penitus explorandæ aut explanandæ unquam facultas fuerit; tamen operæ pretium omnis medicus facturus est, qui res veras singulares, huc pertinentes, didicerit, utcunque exiguas et imperfectas, quas vel ratio docuit, vel observatio comprobavit: præsertim quum non modo ipsa haud levis momenti functio suis obnoxia sit vitiis, sed status quoque par-

tium, quæ eidem inserviunt, universum corpus multum afficiat, variosque sæpe morbos vel inducat (52), vel jam urgentes solvat.

757. Prima ætate, nulla vis genitalis est: certa vero ætate, plerumque circa decimum quartum annum, quum jam compago corporis firmior facta, partesque, ut videtur, quædam ad justam formam et magnitudinem appropinquant, sanguinis cursum alio dirigunt, organa genitalia masculina prius inutilia, et parva, et lente, pro rata tantum parte, cum reliquo corpore crescentia, mutantur subito, crescunt, et evolvuntur, ad propria munera

venit, que fecundum semen sucernitur, stimulo cuius adolescens comes, and a fruitful semen is secreted, by the stimulus of which the youth incitatur ad grata munera Veneris. is excited to the agreeable functions of Venery.

758. Hoc stimulo, quem multa juvant, multa augent, nimirum, By this stimulus, which many things assist, many increase, namely, quæ accendunt imaginationem, secundum leges consensûs, which inflame the imagination, according to the laws of sympathy,

cursus sanguinis versus genitalia organa augetur, quo the current of the blood towards the genital organs is increased, by which sanguine tandem influente per arterias, copiosiore quam blood at length flowing in by the arteries, more copious(ly) than

reducitur per venas, inguen tumet, riget, et it is brought back by the veins, the yard (penis) swells, stiffens, and

glans, demum, turgida plurimo sanguine, adipiscitur acutissimum the glands, in fine, turgid with a great deal of blood, acquires a very acute

sensum; ita ut levis titillatio ejusdem, qualis fuerit sensibility; so that a slight tickling of the same, such as may have been

in Venere, det vehementissimum sensum et voluptatem, que in Venery, produces a most exquisite sensation and pleasure, and

convellat totum nervosum genus in mirum modum, que agitates the whole nervous system in a wonderful manner, and

præsertim cieat vicinos musculos, dictos levatores ani, ad especially excites the contiguous muscles, named the levators ani, to

contractionem, quâ compressione, tandem, vesiculæ seminales que contraction, by which compression, at length, the vesiculæ seminales and

deferentes ductus exprimentur, atque deplentur. excretory ducts (vasa deferentia) are squeezed out, and are emptied.

Semen, quoque, ut videtur, secernitur copiosius, eodem The semen also, as it seems, is secreted more copiously, at the same

tempore, in testibus ipsis, per auctam actionem vasorum time, in the testicles themselves, by the increased action of the vessels

quæ efficiunt eos ex maximâ parte; et effunditur ex his in which form them for the greatest part; and is poured out from them into

urethram: vero ibi effusum vel rectâ (actione?) ex testibus, the urethra: but there poured out either directly from the testicles,

vel ex vesiculis seminalibus, dat novum stimulum, cui or from the vesiculæ seminales, gives a new stimulus, which

accelerator, musculus voluntarii motûs in reddendâ urina, the accelerator, a muscle of voluntary motion in voiding the urine,

organum involuti motûs in expellendo semine, paret, validâ an organ of involuntary motion in expelling the semen, obeys, by the powerful

idonea facta. Tam pubes venit, semenque fecundum secernitur, cujus stimulo adolescens ad grata Veneris munera incitatur.

758. Hoc stimulo quem multa juvant, multa augent, nimirum quæ imaginationem accendunt, secundum consensus leges, sanguinis cursus genitalia organa versus augetur, quo tandem sanguine copiosiore per arterias influente, quam per venas reducitur (422), inguen tumet, riget, et glans demum plurimo sanguine turgida acutissimum sensum adipiscitur (143, 170); ita ut levis ejusdem titillatio, qualis in Venere fuerit, vehementissimum sen-

sum et voluptatem det, totumque genus nervosum mirum in modum convellat, musculosque præsertim vicinos, levatores ani dictos, ad contractionem cieat, qua tandem compressione vesiculæ seminales, ductusque deferentes exprimentur atque deplentur. Semen quoque, ut videtur, eodem tempore copiosius in ipsis testibus secernitur, per auctam actionem vasorum quæ eos maxima ex parte efficiunt; et ex his in urethram effunditur: ibi vero vel recta ex testibus, vel ex vesiculis seminalibus, effusum, novum dat stimulum, cui musculus accelerator paret, in reddenda urina voluntarii motus, in expellendo

et repetitâ contractione cuius semen ejicitur tandem insigni
and repeated contraction of which the semen is ejected at length with great
 vi, nimirum quanta fuerit sat ad projiciendum fœcundum
force, truly as much as shall be sufficient to propel the fruitful
 humorem qua debet penetrare, vel saltem in uterum.
fluid where it ought to penetrate, or at least into the uterus.

759. Neque accelerator musculus solus convellitur: plerumque
Nor is the accelerator muscle alone convulsed: generally
 levis tremor aut convulsio, vero aliquando vehementissima convulsio
a slight tremor or convulsion, but sometimes a very violent convulsion
 omnium musculorum, observatur in venere: hinc anhelatio, palpitatio,
of all the muscles, is observed during venery: hence panting, palpitation,
syncope, nonnunquam epilepsia, vel demum subita mors, quæ
syncope, sometimes epilepsy, or even sudden death, which
 abripuit nonnullos occupatos cultu Veneris nec timentes
has snatched away some engaged in the worship of Venus nor fearing
 quidquam tale.
any such thing.

760. Opere finito, corpus semper languet nonnihl,
The work being finished, the body always is languid in some degree,
 aliquando diu; inguen detumet, sanguine affluente
sometimes for a long time; the penis subsides, the blood flowing
 parciore resumpto copiosiore per venas; cupido
more sparing (ly) being taken up more copious (ly) by the veins; the desire
 pacatur, irritatio summovetur, corpus solvitur, et somnus obrepit
is appeased, irritation is removed, the body is relaxed, and sleep steals on
 facilius.
more easily.

761. Homines pubescent tardius in frigidis regionibus, maturius
Men arrive at puberty more slowly in cold regions, more early
 in calidis. Pubertas quoque venit tardior in pueris occupatis
in warm ones. Puberty also comes on slower in boys occupied
 valido labore et utentibus parco et tenui victu; maturior fere
in hard labour and using a scanty and thin diet; earlier commonly
 viventibus laute et luxuriosis. Eadem sæpe festinatur
in those living sumptuously and in the luxurious. The same often is hastened
 non bene colloquiis aut cogitationibus quæ accendunt
not advantageously by conversation or thoughts which inflame
 imaginationem, vel turpi usu partium prius quam sit fas
the imagination, or by a base use of the parts before that it is permitted
 vibrare arma Veneris.
to brandish the arms of Venus.

semine inviti motus organum, cuius contrac-
 tione valida et repetita, semen tandem ejicitur
 insigni vi, quanta nimirum, sat fuerit ad hu-
 morem fœcundum, qua debet penetrare, vel
 saltem in uterum, projiciendum.

759. Neque solus accelerator musculus convel-
 litur; levis plerumque tremor aut convulsio,
 aliquando vero vehementissima convulsio om-
 nium musculorum, in venere observatur: hinc
 anhelatio, palpitatio, *syncope*, epilepsia nonnun-
 quam, vel demum subita mors, quæ nonnullos
 Veneris cultu occupatos, nec tale quidquam
 timentes, abripuit.

760. Finito opere, corpus nonnihl semper

languet, aliquando diu; inguen detumet, san-
 guine parciore affluente, copiosiore per venas
 resumpto; cupido pacatur, irritatio summove-
 tur, corpus solvitur, et somnus facilius obrepit.

761. Tardius pubescunt homines in regionibus
 frigidis, maturius in calidis. Pubertas quoque
 tardior venit pueris valido labore occupatis, et
 victu parco et tenui utentibus; maturior fere
 viventibus laute et luxuriosis. Eadem sæpe
 festinatur non bene, colloquiis aut cogitatio-
 nibus quæ imaginationem accendunt, vel turpi
 usu partium, priusquam Veneris arma vibrare
 fas sit.

762. Neque genitalia organa sola mutantur pubertate; totum corpus subit graves et sæpe saluberrimas mutationes. Barba pullulat, vox fit gravis et magis sonora, corpus evadit firmius et validius, et sæpe crescit multum et subito, que multi morbi provenientes vel a nimia laxitate solidarum partium, vel a mobilitate nervosi generis, convulsiones, struma, &c. sæpe evanescent suâ sponte. Quin et nova vis accedit æque animo ac corpori, que puerilibus moribus exutis juvenis brevi induit viriles. Vero nihil hujusmodi accidit eunuchis; neque vox mutatur, neque barba venit; et corpus manet debile, et raro adipiscitur justam formam; et ipsi fere sunt languidi, que levis, mollis, effœminati animi. Igitur est non dubium istas mutationes que similes sed adhuc majores quæ observantur in aliis animalibus quodammodo pendere a pubertate et secretionem seminis, quacunque ratione demum fiant. Refert parum sive semen fuerit retentum diu sive exhaustum justâ venere. Vero hæc (sc. vernus) nimis culta valde nocet, præsertim junioribus animos quorum pariter ac corpora multum degenerat: ratio cuius rei erit haud obscura si quis reputaverit secum quanta vis inferatur universo corpori et imprimis nervoso generi venere.

762. Neque sola genitalia organa mutantur pubertate; totum corpus graves, et sæpe saluberrimas, mutationes subit. Barba pullulat, vox fit gravis et magis sonora, corpus firmius et validius evadit, et sæpe multum et subito crescit, multique morbi, vel a nimia laxitate partium solidarum, vel a mobilitate generis nervosi provenientes, convulsiones, struma, &c. sæpe sua sponte evanescent. Quin et nova vis animo æque ac corpori accedit, moribusque puerilibus exutis, juvenis brevi viriles induit. Eunuchus vero nihil hujusmodi accidit: neque vox mutatur, neque barba venit; et corpus debile manet, et raro justam formam adipisci-

tur; et ipsi fere languidi sunt, animique levis, mollis, effœminati. Non dubium igitur est, istas mutationes, similesque sed majores adhuc, quæ in aliis animalibus observantur, a pubertate et secretionem seminis quodammodo pendere, quacunque demum ratione fiant. Parum refert, sive retentum fuerit diu, sive justa venere exhaustum semen. Hæc vero nimis culta valde nocet, præsertim junioribus, quorum animos pariter ac corpora multum degenerat: cuius rei ratio haud obscura erit, si quis secum reputaverit quanta vis universo corpori, et generi nervoso imprimis, inferatur venere.

763. Homines optime valent ad venerem florente et virili ætate.
Men are best able for venery in flowering and manly age.

Primâ senectute adhuc apti sed pigriores ad prælia
In commencing old age (they are) still fit but more sluggish for the battles

Veneris. Vero summâ senectute Venus aut est nulla aut sterilis,
of Venus. But in ripe old age Venus either is none or sterile,

et gravis elumbi et exsucco corpori, neque fere
and oppressive to the loin less (feeble) and sapless frame, nor scarcely

toleranda impune; quia nimirum omnis sensus deficit senibus
to be endured with impunity; because indeed every sense fails in old men

et nervosa vis est minor, et motus sanguinis languidior, et
and the nervous power is less, and the motion of the blood more languid, and

secretiones, fere pariores imprimis seminis, que musculi
the secretions, commonly more scanty especially of the semen, and the muscles

qui ejiunt hoc debiles et fere paralytici, propter
which eject this weak and almost paralytic, on account of

innumera mala horum organorum que vicinarum partium,
the numberless diseases of these organs and of the neighbouring parts,

quibus (sc. malis) senectus est obnoxia. Autem differentia hominum
to which old age is liable. But the difference of men

de his rebus (est) magna; enim exempla decantantur
about these things (in this respect) is great; for examples are related

senum merentium strenuissime in castris Veneris postquam
of old men serving very vigorously in the camps of Venus after that

compleverant centum annos; neque sane dubium, aut adeo
they had completed a hundred years; nor indeed (is it) doubtful, or so

raram octogenarium fieri patrem.
uncommon that the octogenarian becomes a father.

764. Facultas generandi aliquando deficit maribus, et est
The faculty of generating sometimes fails in males, and there is

nulla cupido, neque inguen unquam arrigit neque
no desire, nor does the penis ever rise up (become erect), nor

semen emittitur, propter vitia organorum fere
is the semen emitted, on account of defects of the organs commonly

ignota, puta, pravam fabricam, derivatam ab naturâ
unknown, for instance, a depraved structure, derived from nature

ipsâ, vel defectum sensûs vel secretionis. Vero talis impotentia
itself, or a defect of feeling or of secretion. But such impotence

sæpius oritur ab aliis morbis genitalium partium, lue
more frequently arises from other diseases of the genital organs, (as) lues

venereâ, vel fabricâ læsâ a contusione aut vulnere;
venerea, or the structure being injured by contusion or a wound;

763. Florente ætate, et virili, homines ad Venerem optime valent. Prima senectute apti adhuc, sed pigriores ad Veneris prælia. Summa vero senectute venus aut nulla est, aut sterilis, et elumbi et exsucco corpori gravis, neque fere impune toleranda; nimirum quia senibus sensus omnis deficit, et vis nervosa minor est, et sanguinis motus languidior, et secretiones fere pariores, imprimis seminis, musculique qui hoc ejiunt debiles, et fere paralytici, propter innumera horum organorum partiumque vicinarum mala, quibus senectus obnoxia est (715). Magna autem de his rebus hominum differentia:

decantantur enim exempla senum, in castris Veneris strenuissime merentium, postquam centum annos compleverant; neque sane dubium, aut adeo rarum, octogenarium patrem fieri.

764. Deficit aliquando maribus generandi facultas, et nulla cupido est, neque unquam arrigit inguen, neque semen emittitur, propter vitia fere ignota organorum, puta pravam ab ipsâ natura derivatam fabricam, vel defectum sensus vel secretionis. Sæpius vero talis impotentia oritur ab aliis partium genitalium morbis, lue venereâ, vel læsa fabrica a contusione

haud raro visa est oriri a nimia, præsertim solitaria
not unfrequently it has seemed to arise from excessive, especially solitary
 venere, scilicet cui est (pro habet) nullus modus.
venery, that is which has no bounds.

765. Est verisimile viros aliquando esse steriles a vitio
It is probable that men sometimes are sterile from a fault
 seminis, quamvis nulla vitia organorum appareant, et
of the semen, although no disorders of the organs may appear, and

ipsi (sc. viri) valeant probe ad venerem, que multa exempla
they themselves may be able thoroughly for venery, and many examples
 ostenderunt omnem virum esse non fœcundum cum omni
have shewn that every man was not fruitful with every

fœminâ, quamvis uterque foret satis fœcundus cum aliis.
woman, although each would be sufficiently fruitful with others.

766. Inguen nonnunquam arrigit pertinaciter et cum dolore, vel
The penis sometimes is erect obstinately and with pain, or
 citra cupidinem, vel cum ingente et inexplebili libidine. Rarum
without desire, or with great and insatiable lust. A rare

genus vitii, cui nomina Tentigo, Priapismus, Satyriasis,
kind of disorder, to which the names Tentigo, Priapism, Satyriasis,
 dantur. Oritur fere a gravi irritatione membri ipsius,
are given. It arises mostly from severe irritation of the member itself,

vel vicinarum partium, præsertim vesicæ, vel stimulatæ
or of the contiguous parts, especially of the bladder, either stimulated
 acribus medicamentis, veluti cantharidibus, sumptis, vel distentæ
by acrid medicines, as cantharides, being taken, or distended

multâ et acriore urinâ: hinc levior tentigo familiaris
with much and very acrid urine: hence the slighter tentigo common
 expergiscentibus, alioquin sanissimis, neque libidinosis: hinc quoque
to persons waking, otherwise very healthy, nor lustful: hence also

inguen sæpe riget infantibus que pueris impuberibus, quamvis
the penis often stiffens in children and boys under puberty, although
 fabrica ejus nondum ita evolvatur ut tumeat et
the structure of it may not yet be so evolved that it can swell and

arrigat, sicut solet viris.
erect itself, as is accustomed in men.

767. Fere eâdem ætate quâ pueri pubescunt, puellæ
Almost at the same age in which boys arrive at puberty, girls
 solent fieri nubiles: genitalia organa evolvuntur, et
are accustomed to become marriageable: the genital organs are evolved, and
 valent ad propria munera; pubes venit, mammæ
are adequate to their proper functions; the hair of the pubes comes, the breasts

aut vulnere: haud raro oriri visa est a nimia
 venere, præsertim solitaria, scilicet, cui nullus
 modus est.

765. Verisimile est, viros aliquando steriles
 esse a vitio seminis, quamvis nulla organorum
 vitia appareant, et ipsi ad venerem probe
 valeant; multaque exempla ostenderunt, non
 omnem virum cum omni fœmina fœcundum
 esse, quamvis uterque cum aliis satis foret
 fœcundus.

766. Nonnunquam inguen pertinaciter et cum
 dolore arrigit, vel citra cupidinem, vel cum in-
 gente et inexplebili libidine. Rarum vitii genus,
 cui nomina Tentigo, Priapismus, Satyriasis

dantur. Oritur fere a gravi irritatione ipsius
 membri, vel partium vicinarum, vesicæ præser-
 tim, vel acribus medicamentis, veluti cantha-
 ridibus, sumptis, stimulatæ, vel multa et
 acriore urina distentæ: hinc levior tentigo
 expergiscentibus, alioquin sanissimis, neque
 libidinosis, familiaris: hinc quoque inguen
 sæpe riget infantibus puerisque impuberibus,
 quamvis nondum ita evolvatur ejus fabrica, ut
 tumeat et arrigat, sicut viris solet.

767. Eadem fere ætate qua pueri pubescunt,
 puellæ solent nubiles fieri: genitalia organa
 evolvuntur, et ad propria munera valent; pubes
 venit, mammæ efflorescunt, nova venustas ori-

efflorescunt, nova venustas accedunt (plural, propt. duos nominativos)
shoot forth, a new beauty comes

ori, nova elegantia universæ formæ. Valetudo, quoque,
to the face, a new grace to the whole figure. The health, also,

siquando fuisset antea infirmior, sæpe et subito vertitur
if it had been previously more infirm, often and suddenly is changed

in meliorem, non secus ac accidit adolescentibus alteriûs sexûs.
into better, in like manner as happens to young persons of the other sex.

Vero multum abest ut tanta mutatio universi corporis accidat
But it is far from that so great a change of the whole body befalls

fœminis quanta observetur in viris. Enim neque vox mutatur,
women as is observed in men. For neither is the voice changed,

neque barba venit, neque eadem vis et robur
nor does the beard come, nor do the same strength and vigour

contingunt aut corpori aut animo: et nunc demum
befall either the body or the mind: and now at length

differentia sexuum, quod ad constitutionem corporis, in infantibus
the difference of the sexes, as to the constitution of the body, in infants

fere nulla, in pueris atque puellis obscura, neque semper observanda,
almost none, in boys and girls obscure, nor always to be observed,

manifeste prodit se.
manifestly sets itself forth.

678. Autem gravissima mutatio absolvitur in intimis visceribus
But the most important change is effected in the innermost viscera

puellæ, quâ uterus, prius inutile organum, effundat
of the girl, by which the uterus, before a useless organ, pours forth

pauillum sanguinis singulis mensibus, et evadat idoneus ad
a little (of) blood every month, and becomes fitted to

susciendam, et gestandam et alendam prolem, donec prodeat,
receive, and carry and nourish an offspring, until it come forth,

suo tempore, in auras que lucem.
at its due time, into the air and light.

769. Multum disputatum est inter medicos quo pacto
It has been much disputed amongst physicians by what means

menses evenirent, et quo consilio magna Parens rerum
the menses came forth, and with what design the great Parent of nature

tulisset legem adeo iniquam, ut videtur, fœminis solis. Enim
had imposed a law so unjust, as it appears, upon women alone. For

nondum constat num menses contingant aliis animalibus
it is not yet established whether the menses happen to other animals

nova elegantia universæ formæ accedunt. Valetudo quoque, siquando antea infirmior fuisset, sæpe et subito in meliorem vertitur, non secus ac adolescentibus alterius sexus accidit. Multum vero abest ut tanta universi corporis mutatio fœminis accidat, quanta in viris observetur. Neque enim vox mutatur, neque barba venit, neque eadem vis et robur aut corpori aut animo contingunt: et nunc demum differentia sexuum, quod ad corporis constitutionem, in infantibus fere nulla, in pueris atque puellis obscura neque semper observanda, manifeste se prodit.

768. Gravissima autem in intimis puellæ visceribus mutatio absolvitur, quæ uterus, prius inutile organum, pauillum sanguinis singulis mensibus effundat, et idoneus evadat ad prolem suscipiendam, et gestandam, et alendam, donec suo tempore in auras lucemque prodeat.

769. Multum disputatum est inter medicos, quo pacto menses evenirent, et quo consilio rerum magna Parens solis fœminis adeo iniquam ut videtur legem tulisset. Nondum enim constat, num aliis quoque animalibus menses contingant; si nullis, certe paucissimis, iisque tantum quæ generi humano simillima sunt.

quoque; si ullis certe paucissimis, que iis tantum quæ sunt
also; if to any certainly to very few, and to those only which are
 simillima humano generi.
most like the human race.

770. Nemo sanus conatus fuerit reddere rationem cur
No sensible person will endeavour to offer an explanation why
 talis fabrica qualis efficiat fluxum hujusmodi, data fuerit
such a mechanism as can cause a flow of this sort, should have been given
 fœminis, que iis solis: neque est (officium) medici
to women, and to them alone: nor is it (the duty) of the physician
 perscrutari arcana istiusmodi. Erit sat si explicaverit
to investigate secrets of that sort. It will be sufficient if he should explain
 quænam ista fabrica sit, et ostenderit quomodo fluxus
what that mechanism is, and should shew how the flow
 mensium fiat, quibus usibus inserviat, quibus causis
of the menses takes place, what purposes it serves, from what causes
 vitietur, quâ ratione vitiatum noceat, et quibus remediis
it is vitiated, in what manner (when) vitiated it injures, and by what remedies
 vitia ejus corrigantur. Autem plurima desiderantur
the disorders of it may be corrected. But very many things are required
 adhuc ut ratio talis menstrui fluxus reddatur.
as yet that an account of such a menstrual discharge be rendered.

771. Quum corpore crescente indies, quadam partes adeptæ sint
When by the body growing daily, certain parts have acquired
 fere justam molem, et figuram et firmitatem, videntur quodammodo
almost their due size, and shape and strength, they seem in some degree
 dirigere cursum sanguinis versus alias partes, laxiores, et nondum
to direct the course of the blood towards other parts, more lax, and not yet
 evolutas, sed aptas per suam fabricam, ut, propriis vitalibus
evolved, but so fitted by their own structure, that, by the proper vital
 viribus corporis juvantibus, tandem crescant et evolvantur certâ
powers of the body assisting, at length they grow and are evolved in a certain
 ratione. Est verisimile quoque ovaria ipsa, evoluta hoc
manner. It is probable also that the ovaries themselves, evolved in this
 modo, que tandem valentia ad suum munus, secernere
manner, and at length availing (becoming adequate) to their function, secrete
 quosdam fœcundos humores, qui demum plurimum afficiant uterum
some fruitful fluids, which indeed greatly affect the uterus
 que vicinas partes per suum stimulum, que invitent sanguinem
and neighbouring part by their stimulus, and invite the blood
 imprimis in arterias ipsarum.
first of all into the arteries of themselves (their own arteries).

770. Nemo sanus conatus fuerit rationem reddere, cur talis fœminis, iisque solis, fabrica data fuerit, qualis hujusmodi fluxum efficiat: neque medici est istiusmodi arcana perscrutari. Sat erit si quænam ista fabrica sit explicaverit, et ostenderit quomodo mensium fluxus fiat, quibus usibus inserviat, quibus causis vitietur, quâ ratione vitiatum noceat, et quibus remediis ejus vitia corrigantur. Plurima autem desiderantur adhuc, ut talis fluxus menstrui ratio reddatur.

figuram, et firmitatem, sanguinis cursum quodammodo dirigere videntur alias partes versus, laxiores, et nondum evolutas, sed per suam fabricam aptas, ut juvantibus propriis corporis viribus vitalibus (47) certa tandem ratione crescant et evolvantur. Verisimile quoque est ovaria ipsa, hoc modo evoluta, ad suumque tandem munus valentia, humores quosdam fœcundos secernere, qui demum per suum stimulum uterum, partesque vicinas, plurimum afficiant, sanguinemque imprimis in ipsarum arterias invitant (475).

771. Quum corpore indies crescente, partes quædam justam fere adeptæ sint molem, et

772. Vero omnes arteriæ comparatæ cum venis observantur capaces
But all the arteries compared with the veins are observed capacious
 et lax fœminis præ viris: imprimis descendens aorta, que
and lax in women more than men: in the first place the descending aorta, and
 præsertim rami ejûs qui tendunt ad uterum sunt præ cæteris
especially the branches of it which go to the uterus are more than the others
 capaces et laxi. Porro rami arteriarum uteri ampli,
capacious and lax. Moreover the branches of the arteries of the uterus being large
 flexuosi, serpentine, videntur aptissimi ad congerendum sanguinem;
flexuous, serpentine, seem very fitted to congest the blood;
 vero turgidi congesto sanguine hiant in uterum multis
but (when) turgid with congested blood they open into the uterus with many
 osculis, que fundunt sanguinem in eum, elapsurum brevi
small mouths, and pour the blood into it, to escape in a short time
 per vaginam.
by the vagina.

773. Igitur est probabile fœminas esse præ viris proclives
Therefore it is probable that women are more than men liable
 ad plenitudinem sanguinis; quod sane plurima confirmant, præsertim
to fulness of blood; which indeed many things confirm, especially
 quum corpore crescente lentius, omnis nutriens humor
when the body growing more slowly, all the nutritious fluid
 qui paratur non impenditur nutrimento ejûs; est quoque
which is prepared is not expended in the nutrition of it; it is also
 probabile nimiam copiam sanguinis congeri præcipue in
probable that an excessive quantity of blood is congested principally in
 arteriis et imprimis laxioribus ramis qui distenduntur facillime,
the arteries and chiefly in the laxer branches which are distended most easily,
 que ideo in vasis uteri. Vero hæc distenta et
and consequently in the vessels of the uterus. But these distended and
 irritata incitantur ad novos et validiores motus, que expriment
irritated are excited to new and more powerful motions, and press out
 humorem primo tenuem vix coloratum per oscula, jam
a fluid at first thin scarcely coloured by small mouths, now
 nonnihil patefacta, hiantia in uterum vero portea fundunt rubrum
somewhat expanded, opening into the uterus but afterward pour out red
 sanguinem. (Notandum est non sanguinem sed secretionem esse menses.)
blood.

774. Quamvis omnia hæc videantur quodammodo obscura et
Although all these things seem in some degree obscure and

772. Fœminis vero, præ viris, arteriæ omnes
 capaces et laxæ, cum venis comparatæ, obser-
 vantur: aorta descendens imprimis, ejus-
 que rami præsertim qui ad uterum tendunt,
 præ cæteris capaces et laxi sunt. Porro, rami
 arteriarum uteri, ampli, flexuosi, serpenti-
 nini, ad congerendum sanguinem aptissimi
 videntur: congesto vero sanguine turgidi,
 in uterum multis osculis hiant, sanguinem-
 que in eum fundunt, per vaginam brevi elap-
 surum.

773. Probabile igitur est, fœminas, præ viris,
 ad sanguinis plenitudinem proclives esse; quod

sane plurima confirmant, præsertim quum,
 lentius crescente corpore, humor nutriens qui
 paratur non omnis nutrimento ejus impenditur;
 probabile quoque est, nimiam sanguinis copiam
 in arteriis præcipue congeri, et imprimis in
 ramis laxioribus, qui facillime distenduntur,
 ideoque in vasis uteri. Hæc vero distenta et
 irritata ad novos et validiores motus incitan-
 tur, humoremque, primo tenuem vix coloratum,
 per oscula in uterum hiantia jam nonnihil
 patefacta expriment, postea vero rubrum san-
 guinem fundunt.

774. Quamvis hæc omnia quodammodo ob-
 E e

incerta; tamen confirmantur haud parum observatione multorum
uncertain; yet they are confirmed not a little by the observation of many
 signorum quæ præcedunt et comitantur menses erumpentes. Cujus
symptoms which precede and accompany the menses breaking forth. Of which
 modi sunt fluxus albidus humoris e vaginâ, recurrens
sort are the flow of a white fluid from the vagina, recurring
 incertis, sæpe longis intervallis, per unum ve alterum annum ante
at uncertain, often long intervals, for one or two years before
 plenam pubertatem; insolita lassitudo, dolor lumborum et capitis,
complete puberty; unusual lassitude, pain of the loins and of the head,
 vertigo, nausea, tumor et aliquando dolor mammarum, recrudescencia
vertigo, nausea, swelling and sometimes pain of the breasts, recurring
 per intervalla donec tandem sincerus sanguis prorumpat; quod simul
at intervals until at length pure blood bursts forth; which as soon as
 fit hæc mala evanescent, reditura, vero quamvis incerto
it happens these disorders vanish, to return, indeed although at an uncertain
 tempore. Sic menses sæpe redeunt longis et incertis
period. Thus the menses often return at long and uncertain
 intervallis puellis nondum plene puberibus; vero paulatim reducendi
intervals in girls not yet fully ripe; but gradually to be reduced
 ad menstruum intervallum, signis jam recensitis, nunc
to the menstrual interval, the symptoms already enumerated, sometimes
 levioribus nunc gravioribus, fere præcedentibus.
slighter sometimes more severe, commonly preceding.

775. Nulla ratio intervalli adeo æqualis reddita est hactenus;
No explanation of an interval so regular has been given hitherto;
 pleræque res tamen habent sua tempora quibus incipiunt
most things however have their own periods in which they begin
 et absolvuntur: vis consuetudinis videtur facere nonnihil hic.
and are completed: the force of habit seems to do something here.
 Neque tamen est intervallum ædeo æquale fœminis, quin menses
Nor however is the interval so regular in women, but that the menses
 redeant multis, alioquin sanissimis, per breviora aut longiora
may return in many, otherwise very healthy, at shorter or longer
 spatia. Exempla mulierum, quæ habent nullos menses, bene
periods. Examples of women, who have no menses, being
 valentium sunt rarissima, et fœcunditatis sine mensibus adhuc
in good health are very rare, and of fecundity without the menses still
 rariora: vero quædam puellæ factæ sunt matres priusquam
more rare: but some girls have become mothers before that
 menses erupissent: vero postea profluxuri (sunt) solito more.
the menses had broken forth: but afterward they will flow on in the usual manner.

scura et incerta videantur; tamen haud parum confirmantur observatione multorum signorum quæ erumpentes menses præcedunt et comitantur. Cujusmodi sunt fluxus humoris albidus e vagina, incertis intervallis, sæpe longis, recurrens, per annum unum alterumve ante plenam pubertatem; lassitudo insolita, dolor lumborum et capitis, vertigo, nausea, tumor et aliquando dolor, per intervalla recrudescencia, donec tandem sanguis sincerus prorumpat; quod simul fit, hæc mala evanescent, reditura vero, quamvis incerto tempore. Sic puellis nondum plene puberibus menses sæpe longis et incertis intervallis redeunt: paulatim

vero ad intervallum menstruum reducendi, præcedentibus fere signis jam recensitis, nunc levioribus nunc gravioribus.

775. Ratio intervalli adeo æqualis nulla hactenus reddita est: habent tamen sua tempora pleræque res, quibus incipiunt et absolvuntur: vis consuetudinis (317) nonnihil hic facere videtur. Neque tamen intervallum adeo æquale fœminis est, quin multis, alioquin sanissimis, per breviora aut longiora spatia, menses redeant. Rarissima sunt exempla mulierum bene valentium, quæ nullos menses habent, et rariora adhuc, sine mensibus, fœcunditatis: puellæ quædam vero prius matres factæ sunt, quam

776. Vero annis labentibus, in nostris regionibus vix ante
But the years gliding on, in our climate scarcely before
 quadragesimum, et fere ante quinquagesimum annum ætatis, menses
the fortieth, and mostly before the fiftieth year of age, the menses
 desinunt et cum his fœcunditas. Quo citius incipiunt fere
cease and with them fecundity. The earlier they begin commonly
 eo maturius desinunt. Neque plerumque reprimuntur subito;
the earlier they cease. Nor generally are they repressed suddenly;
 aliquando redeunt et ingente coplâ, insolitis intervallis, sive
sometimes they return and in great quantity, at unusual intervals, whether
 brevioribus sive longioribus justo (sc. intervallo;) sæpe cum gravibus
shorter or longer than (the proper one;) often with severe
 morbis uteri que partium vicinarum et conspirantium, imprimis
diseases of the uterus and of the parts contiguous and acting in concert, especially
 (morbo) fluore albo, neque mediocri discrimine valetudinis. Ratio
with fluor albus, nor with slight danger of the health. The cause
 harum rerum videtur esse firmitas et rigiditas totiûs corporis,
of these things seems to be the firmness and rigidity of the whole body,
 præsertim arteriarum, crescentes indies et tandem superantes
especially of the arteries, increasing daily, and at length overcoming
 vim venarum. Hinc ultima plenitudo arteriarum (fit)
the strength of the veins. Hence the last (latest) fulness of the arteries occurs
 in laxissimâ parte; paulatim tardior, sed inordinata, et tandem nulla.
in the laxest part; gradually slower, but irregular, and at length none.
 Nonnunquam quamvis rarissime, menses et fœcunditas simul manent
Sometimes, although very rarely, the menses and fecundity together remain
 ultra quinquagesimum annum. Vero plerumque, si vetula
beyond the fiftieth year. But for the most part, if an old woman
 habet menses est morbosum (sc. negotium.)
have the menses it is a diseased matter.

777. Igitur menses contingunt mulieribus, potissimum ut videtur
Therefore the menses happen to women, principally as it appears
 hac ratione, quod habent universam fabricationem corporis aptam
from this cause, that they have the entire mechanism of their body fitted
 ad comparandam plenitudinem seu abundantiam sanguinis, et idoneum
to acquire a plenitude or abundance of blood, and a fit
 organum est in promptu, per quod sanguis excernatur. Viri que
organ is at hand, by which the blood can be excreted. Men and
 cætera animalia haud fiunt nimis pleni sanguine ita facile, neque si
other animals do not become too full of blood so easily, nor if

menses erupissent: postea vero more solito profuxuri.

776. Labentibus vero annis, nostris in regionibus vix ante quadragesimum, et fere ante quinquagesimum ætatis annum, menses desinunt, et cum his fœcunditas. Quo citius incipiunt, eo fere maturius desinunt. Neque subito plerumque reprimuntur: aliquando insolitis intervallis, sive brevioribus sive longioribus justo, redeunt, et ingente copia; cum gravibus sæpe uteri partiumque vicinarum et conspirantium morbis, fluore albo imprimis, neque mediocri valetudinis discrimine. Harum rerum ratio videtur esse totius corporis, arteriarum præsertim, firmitas et rigiditas, indies

crescentes, et vim venarum tandem superantes. Hinc ultima arteriarum plenitudo in parte laxissima: paulatim tardior, sed inordinata, et tandem nulla. Nonnunquam, quamvis rarissime, menses simul et fœcunditas ultra quinquagesimum annum manent. Plerumque vero, si vetula menses habet, morbosum est.

777. Menses igitur, ut videtur, mulieribus contingunt hac potissimum ratione, quod universam corporis fabricationem, ad plenitudinem seu sanguinis abundantiam comparandam, aptam habent, et idoneum organum in promptu est per quod sanguis excernatur. Viri cæteraque animalia haud ita facile sanguine nimis pleni fiunt, neque si ita facti fuerint simile

facti fuerint ita, habent simile organum. (Menses) Deficiunt
they should have become so, have they a similar organ. They fail

vetulis, quia fabrica uteri mutatur haud parum
to old women, because the structure of the uterus is changed not a little

præsertim firmitas arteriarum ejûs. Porro, dum mulier
especially the strength of the arteries of it. Moreover, whilst a woman

uterum gerit fere habet nullos menses, quia pars uteri
is pregnant generally she has no menses, because the part of the uterus

unde solent profluere occupatur a placenta; neque
whence they are accustomed to flow forth is occupied by the placenta; nor

menses fluunt per plures menses dum mulier alit
do the menses flow during the many months whilst the woman nourishes

infantem, nimirum quia sanguis divertitur ad aliam partem
the infant, doubtless because the blood is diverted to another part

cui est (pro habet) mirus consensus cum utero.
which has a wonderful sympathy with the uterus.

778. Menses conducunt parum vel nihil ad cupidinem.
The menses conduce little or not at all to desire.

Auctus fluxus sanguinis versus genitalia organa, pubere ætate,
The increased flow of blood towards the genital organs, at ripe age,

que nonnulli humores, ut creditur, assidue secreti, possunt non non
and some fluids, as it is believed, constantly secreted, cannot not

stimulare et calefacere. Autem fœminæ feruntur in venerem
(must) stimulate and heat. But women are disposed for venery

minore impetu quam viri, et fœminæ fere omnium animalium
with a less impetus than men, and the females of almost all animals

(feruntur, &c.) quam mares; neque sane hi in quibusdam
than the males; nor indeed do the latter in some

generibus animalium subigunt suas fœminas sine quâdam vi.
species of animals subdue their females without some force.

Vero major ve minor cupido venerearum rerum facit nihil ad
But a greater or less desire of venereal congress contributes in no way to

fœcunditatem. Fœminæ calldioris constitutionis aliquando observantur
fecundity. Women of a warmer constitution sometimes are observed

steriles; dum frigidissimæ, quibus sæpe gaudia veneris (sunt) fere
sterile; whilst of the coldest, to whom often the pleasures of venery are almost

nulla, sunt mirâ fœcunditate. Vero efrænata et inexplebills
none, are of a wonderful fecundity. But an unbridled and insatiable

libdo, est demum morbus in fœminis non secus ac in viris,
desire, is indeed a disease in women in like manner as in men,

aliquando vere corporeus, inductus forsan a vitilis genitalium
sometimes a truly corporeal one, induced perhaps by diseases of the genital

organum habent. Deficiunt vetulis, quia fabrica uteri haud parum mutatur, præsertim firmitas ejus arteriarum. Porro, dum mulier uterum gerit, menses nullos fere habet, quia pars uteri unde profluere solent a placenta occupatur; neque per plures menses, dum infantem alit mulier, fluunt menses, nimirum quia ad aliam partem, cui mirus cum utero consensus est, sanguis divertitur.

778. Menses parum vel nihil ad cupidinem conducunt. Auctus, ætate pubere, genitalia organa versus sanguinis fluxus, humoresque ut creditur, nonnulli (634), assidue secreti, non possunt non stimulare et calefacere.

Fœminæ autem quam viri, et omnium fere animalium fœminæ quam mares, minore impetu in venerem feruntur; neque hi sane in quibusdam animalium generibus, sine vi quâdam suas fœminas subigunt. Nihil vero ad fœcunditatem facit major minorve cupido rerum venerearum. Fœminæ aliquando calldioris constitutionis steriles observantur; dum frigidissimæ sæpe, quibus Veneris gaudia fere nulla, mira fœcunditate sunt. Efrænata vero et inexplebills libido, in fœminis non secus ac in viris, morbus demum est, aliquando vere corporeus, forsan a vitilis genitalium organorum, irratione, nimio sanguinis fluxu,

organorum, irritatione, nimio fluxu sanguinis, nimiam secretionem
organs, irritation, excessive flux of blood, excessive secretion
 fecundorum humorum; vero sæpius ducens originem a læsâ
of fecundating humours; but more often deriving its origin from a diseased
 et corruptâ imaginatione.
and corrupted imagination.

779. In fecundâ venere est probabile non modo clitoridem que
In a fruitful congress it is probable not only that the clitoris and
 cæteras exteriores partes genitalium organorum fœminarum, sed quoque
other more external parts of the genital organs of females, but also
 intimas imprimis Fallopianas tubas, turgere et erigi
the inmost especially the Fallopian tubes, grow turgid and are erected
 sanguine influente; que has tubas ad moveri ad ovaria que
by the blood flowing in; and that these tubes are applied to the ovaries and
 amplecti eadem suis fimbriis, que deferre masculinum semen
that they embrace the same with their fimbriæ, and convey the male semen
 ad ea (sc. ovaria), que vel deducere ovum separatum ex ovario
to them, and either bring down the ovum separated from the ovarium
 postquam fuerit fecundatum, masculino semine, vel forsitan
after it has been fecundated, by the male semen, or perhaps
 tantum humorem rupti ovi mixtum cum semine, in uterum.
only the fluid of the ruptured ovum mixed with the semen, into the uterus.

780. Vero adhuc parum constat num hæc fiunt ita,
But as yet it is not decided whether these things take place so,
 vel demum quo tempore; scilicet quia occasiones observandi
or even at what time; truly because the opportunities of observing
 sunt admodum raræ in hominibus, que multa vetant adhibere
are very rare in men, and many things forbid us to give
 fidem plurimis observationibus, quas varii auctores protulerunt.
credit to the many observations, which various authors have set forth.
 Vero quantum possit colligi ex inspectionibus animalium institutis
But as far as can be collected from the inspections of animals instituted
 a peritissimis medicis, vel, denique, paucarum mulierum, cada-
by the most skilful physicians, or, finally, of the few women, the dead
 vera quarum fuerit facultas inspiciendi brevi tempore
bodies of whom there has been any possibility of examining a short time
 post conceptum, neque fœtus neque ovum possunt detegi ante
after conception, neither fœtus nor ovum can be detected before
 viginti dies post conceptum: tenax, glutinosus, pellucidus humor
twenty days after conception: a tenacious, glutinous, pellucid fluid
 tantum conspicitur in utero aut tubis; qui, tamen, continet
only is seen in the uterus or tubes; which, however, contains

nimia humorum fecundorum secretionem, inductus; sæpius vero a læsa et corrupta imaginatione originem ducens.

779. In fecunda venere probabile est, non modo clitoridem cæterasque partes exteriores genitalium organorum fœminarum, sed intimas quoque, tubas imprimis Fallopianas, influente sanguine turgere et erigi; hasque tubas ad ovaria ad moveri, eademque suis fimbriis amplecti, semenque masculinum ad ea deferre, ovumque vel separatum ex ovario, postquam semine masculino fecundatum fuerit, vel forsitan rupti tantum ovi humorem, cum semine mixtum, in uterum deducere.

780. Hæc vero num ita fiunt, vel quo demum

tempore, parum adhuc constat: scilicet, quia observandi occasiones in hominibus raræ admodum sunt, multaque vetant adhibere fidem plurimis, quas varii auctores protulerunt, observationibus. Quantum vero ex inspectionibus animalium, a peritissimis medicis institutis, vel denique paucarum mulierum, quarum cadavera brevi post conceptum tempore inspiciendi facultas fuerit, colligi possit, neque fœtus, neque ovum, ante viginti dies post conceptum, detegi possunt: humor tantum tenax, glutinosus, pellucidus in utero aut tubis conspicitur; qui tamen primordia novi animalis continet, quamvis oculis, etiam armatis optimis vitris, aciem fugientia. Quamprimum vero

primordia novi animalis, quamvis fugientia (sc. primordia) aciem
the rudiments of the new animal, although baffling the field
 oculi, etiam armati optimis vitris. Vero quam primum partes
of the eye, though armed with the best glasses. But as soon as the parts
 crudi fœtus adeptæ sunt tantum firmitatis et coloris ut
of the crude fetus have acquired so much firmness and colour that
 possint distingui, tum ovum observatur, constans ex molli
they can be distinguished, then the ovum is observed, consisting of a soft
 et tenui membranâ, et continens pellucidam aquulam, in quâ
and thin membrane, and containing a pellucid little water, in which
 novum animal natat, incurvum, pendulum per funem umbilici
the new animal swims, bent, pendulous by the cord of the navel
 a placentâ et membranâ ovi deforme, capite
from the placenta and membrane of the ovum shapeless, with the head
 pro ratâ parte ingente, corpore parvo, adhuc instructum nullis artubus,
in proportion large, the body small, as yet furnished with no limbs,
 hactenus mollissimum, et fere fluidum.
to this time (as yet) - very soft, and almost fluid.

781. Sterilitas a conclusis tubis, corpora lutea, ut vocantur,
The sterility from shut up tubes, corpora lutea, as they are called,
 reperta in ovariis semper post, nunquam ante, conceptum, que
found in the ovaries always after, never before, conception, and
 demum fœtus hærentes vel in ovariis, vel tubis vel delapsi
finally fetuses sticking either in the ovaries, or in the tubes or having fallen
 in abdomen ruptis tubis, docent masculinum semen penetrare,
into the abdomen from the ruptured tubes, prove that the male semen penetrates,
 quodammodo, per Fallopianas tubas ad ovaria feminarum,
in some way, through Fallopian tubes to the ovaries of females,
 aliquid necessarium ad generationem derivari ex ovariis, et
that something necessary to generation is derived from the ovaries, and
 descendere per easdam tubas ad uterum.
descends by the same tubes to the uterus.

782. Similitudo parentum, vel alterius tantum, vel mixta
The likeness of the parents, either of the one only, or a mixed
 utriusque, reviviscens in liberis, suadet primordia novi
of both, reviving in the children, persuades that the rudiments of the new
 animalis derivari pariter ex utroque parente: ita, tamen, ut alii
animal are derived equally from each parent: so, however, that some
 liberorum, qui habent mixtam similitudinem, inclinent ad patrem,
of the children, which have a mixed likeness, incline to the father,
 alii magis ad matrem: et singularis constitutio
others more to the mother: and the peculiar constitution (idiosyncrasy)

tantum firmitatis et coloris adeptæ sunt partes crudi fœtus, ut possint distingui, tum ovum observatur ex molli et tenui membranâ constans, et aquulam pellucidam continens, in qua novum animal, incurvum, per funem umbilici a placenta et membranâ ovi pendulum, deforme, ingente pro rata parte capite, parvo corpore, nullis adhuc artubus instructum, natat, mollissimum hactenus et fere fluidum.

781. Semen masculinum ad ovaria feminarum per tubas Fallopianas quodammodo penetrare, aliquid ad generationem necessarium ex ovariis derivari, et per eandem tubas descendere ad uterum, docent sterilitas a conclusis tubis, corpora lutea ut vocantur in ovariis semper post conceptum, nunquam ante, reperta, fœtusque demum, vel in ovariis, vel in tubis hærentes, vel ruptis tubis in abdomen delapsi.

782. Primordia novi animalis ex utroque parente pariter derivari, suadet similitudo parentum, vel alterius tantum, vel utriusque mixta, in liberis reviviscens: ita tamen ut liberorum, qui mixtam similitudinem habent, alii ad patrem, alii magis ad matrem, incli-

patris renascatur, vel pura, vel mixta et correcta in filio,
of the father revives, either pure, or mixed and corrected in the son,
 et sic proclivitas ad suscipiendos multos morbos transeat a
and thus a tendency to take on many diseases may pass from
 parentibus in prolem, aliquando nihil imminuta, immo,
parents to their offspring, sometimes nothing diminished, nay,
 forsā facta gravior, vero sæpe mitior et levior, et paulatim
perhaps become more severe, but often milder and lighter, and gradually
 delenda, si tanta cura impenderetur generationi hominum
to be obliterated, if as great care were expended on the generation of men
 quanta datur propagandis equis, et juvenicis, et catulis. Maxima
as is given in propagating horses, and bullocks, and whelps. The greatest
 varietas quæ observatur in humano genere, scilicet, inter
difference which is observed in the human race, namely, between
 Æthiopes et Europæos, post aliquot generationes, ut fertur
the Æthiopians and Europeans, after some generations, as it is said
 quatuor, deletur penitus, et evanescit, nec unquam renascitur si
four, is obliterated entirely, and disappears, nor does it ever revive if
 mixta proles habuerit nuptias cum altero genere tantum. Autem
the mixed offspring should contract marriage with one race only. But
 plurimæ varietates, multo minus notabiles, *Temperamenta* ut
very many varieties, much less remarkable, Temperaments as
 dicuntur, statura et forma corporis, lineamenta vultus,
they are called, stature and shape of the body, lineaments of the countenance
 color oris, capillorum, oculorum, *miscentur*
(features), colour of the face, of the hair, eyes, are mixed
 facillime in humanâ gente, et sæpe latent diu: sed
very easily in the human race, and often lie dormant for a long time: but
 usque vigent in stirpe; nunquam penitus delendæ. Enim
constantly prevail in the progeny; never wholly to be destroyed. For
 illæ minutæ varietates hominum prodeunt identidem, summo
those minute varieties of men go forth occasionally, with the most profound
 neque obscuro consilio, fortasse post multas generationes, non minus
nor obscure wisdom, perhaps after many generations, not less
 puræ quam extiterant triginta secula ante; alioquin singuli
pure than they had existed thirty ages before; otherwise individual
 homines possent vix, aut ne quidem vix secerni et
men could scarcely, or not even scarcely be separated and
 internosci invicem a se.
be distinguished in turn from themselves (each other).

783. Vero profecerunt parum hactenus, qui conati sunt
But they have effected little hitherto, who have endeavoured

ment; et constitutio singularis patris vel pura renascatur in filio, vel mixta et correctata, et sic proclivitas ad multos morbos suscipiendos a parentibus in prolem transeat, aliquando nihil imminuta, immo forsā facta gravior, vero sæpe mitior et paulatim delenda, si tanta cura impenderetur generationi hominum quanta datur propagandis equis, et juvenicis, et catulis observatur varietas, scilicet inter Æthiopes et Europæos, post aliquot generationes, quatuor ut fertur, deletur penitus, et evanescit, nec unquam renascitur, si mixta proles cum altero tantum genere nuptias habuerit. Pluri-

mæ autem varietates, multo minus notabiles, *Temperamenta* ut dicuntur, statura et forma corporis, lineamenta vultus, color oris, capillorum, oculorum, in gente humana *miscentur* facillime, et sæpe diu latent: sed vigent usque in stirpe; nunquam penitus delendæ. Summo enim neque obscuro consilio, multas fortasse post generationes, identidem prodeunt minutæ illæ hominum varietates, non minus puræ quam ante triginta secula extiterant: alioquin singuli homines a se invicem vix aut ne vix quidem secerni possent et internosci.

783. Parum vero profecerunt hactenus qui conati sunt rationem reddere variarum partium

reddere rationem variarum partium quas uterque parens conferret ad generationem. Nec melius intelligitur quænam (sit) tributa to generation. Nor is it better understood what is the virtue of the male semen, quisnam usus minutissimorum animalium quæ scaturit ibi, aut quid depromatur ex ovario, aut corpore luteo. Vero est non dubium quandam fabricam, utcunque imperfectam, novi animalis, subesse ab conceptione ipso, quamvis non obviam nostris sensibus; nimirum, quia simul potest conspici, fœtus habet cerebrum, et cor, et aortam, et actionem cordis, et motum sanguinis, quamvis nondum rubri, et ideo actionem cerebri; neque quisquam facile contenderit nihil istiusmodi adfuisse pridie quam tota fabrica facta esset visibilis nostris oculis.

784. Autem nemo est qui dixerit unde variæ partes, quæ sunt omnino necessariae ad vitam, veniant, et quando et quo ordine perficiantur, aut quomodo talis conditio datur, ut videtur rudi que indigestæ massæ, qualis fecerit eandem idoneam ut distendatur certo modo, et tandem crescat in pulcherrimam formam.

785. Tamen, juvabit novisse talem fabricam subesse a principiis vitæ, evolvendam certo tempore et ordine, et magnam et constantem vim quæ distendat (subesse,) et

quas uterque parens ad generationem conferret. Nec melius intelligitur quænam virtus seminis masculini, quisnam minutissimorum quæ ibi scaturit animalium usus, aut quid ex ovario aut corpore luteo depromatur. Non dubium vero est, fabricam quandam, utcunque imperfectam, novi animalis, ab ipso conceptu subesse, quamvis nostris non obviam sensibus: nimirum, quia simul conspici potest, fœtus cerebrum habet, et cor et aortam, et actionem cordis, et motum sanguinis, quamvis nondum rubri, et ideo actionem cerebri (359); neque facile quisquam contenderit nihil istiusmodi adfuisse pridie

quam tota fabrica nostris oculis visibilis facta esset.

784. Variæ autem partes quæ ad vitam omnino necessariae sunt, unde veniant, et quando et quo ordine perficiantur, nemo est qui dixerit, aut quomodo talis conditio rudi indigestæque, ut videtur, massæ detur, qualis eandem idoneam fecerit, ut certo modo distendatur, et crescat tandem in pulcherrimam formam.

785. Juvabit tamen novisse talem, a principiis vitæ, subesse fabricam, certo tempore et ordine evolvendam, et magnam et constantem vim quæ distendat, et compagem fœtus

compagem fœtus (esse) mollissimam, et ideo aptissimam
that the frame of the fœtus is very soft, and therefore very fit
 ad extentionem.
for extention.

786. Distendens vis est actio cordis et arteriarum,
The distending force is the action of the heart and arteries,
 propellens humores quaquaversum per totum corpusculum:
driving the fluids in every direction through the whole (of) the little body:
 hæc vis, incipiens, ut videtur, a primo ventriculo cordis
this force, beginning, as it seems, from the first ventricle of the heart
 qui conspicitur, evolvit aortam, que extendit primo in simplicem
which is seen, evolves the aorta, and extends it first into a simple
 tubum, dividendum paulatim in ramulos, qui inveniunt, vel
tube, to be divided gradually into little branches, which find, or
 aperiant, vel evolvant venas respondentes sibi.
open, or evolve the veins answering (corresponding) to them.

787. Hæc vis, ut videtur, dirigitur primâ fabricatione corporis
This force, as it seems, is directed by the first construction of the body
 in alia atque alia organa, variâ proportione, et hæc igitur
to the different organs, in various proportion, and they therefore
 crescunt, et sane admodum inæqualiter. Sic caput efficitur
grow, and indeed very unequally. Thus the head is rendered
 grande, et thymus et jecur ingentia, occupantia magnam partem
large, and the thymus and liver great, occupying a large proportion
 thoracis, cum pulmo adhuc est exiguus, et nulli artus
of the thorax, when the lung as yet is small, and no limbs
 apparent. Vero hi veniunt suo ordine, et superiores
appear. But they come in their proper order, and the upper ones
 (sc. artus) pullulant prius.
shoot forth first.

788. Totus homunculus quum primo potest conspici, vix
The whole homunculus (little man) when first it can be seen, scarce
 major formicâ, et pendens unum ve alterum granum, natat
larger than an ant, and weighing one or another (two) grain, swims
 in ovo, quod facile contineat duas ve tres uncias aquæ:
in the ovum, which easily can contain two or three ounces of water:
 vero quo plus ovum crescit, eo minus aquæ, pro rata parte,
but the more the ovum grows, the less (of) water, in proportion,
 est in eo, et fœtus qui habitat major: donec, tandem,
there is in it, and the fœtus which inhabits it is larger: until, at length,
 sub finem graviditatis, fere impleat ingens ovum, aquâ
towards the end of pregnancy, it nearly fills up the great ovum, the water

mollissimam, et ideo ad extensionem aptissimam (81, 84).

786. Vis distendens est actio cordis et arteriarum humores quaquaversum per totum corpusculum propellens: hæc vis, ut videtur, a primo qui conspicitur cordis ventriculo incipiens, aortam evolvit, extenditque, primo in simplicem tubum, paulatim in ramulos dividendum, qui venas sibi respondentes inveniunt, vel aperiant, vel evolvant.

787. Hæc vis, prima, ut videtur, corporis fabricatione, variâ proportione in alia atque alia organa dirigitur, et hæc igitur certo

ordine crescunt, et sane admodum inæqualiter. Sic caput grande efficitur, et thymus et jecur ingentia magnam thoracis partem occupantia, cum pulmo adhuc exiguus est, et artus nulli apparent. Hi vero suo ordine veniunt, et prius superiores pullulant.

788. Totus homunculus, quum primo conspici potest, vix formica major, et granum unum alterumve pendens, natat in ovo, quod facile duas tresve uncias contineat: quo plus vero crescit ovum, eo minus pro rata parte aquæ in eo est, et fœtus qui habitat major: donec tandem, sub finem graviditatis, ingens

relictâ parcâ, ipse (sc. fœtus) tum sesquipedalis, et pendens
being left scanty, itself then a foot and half long, and weighing
 circiter octo libras.
about eight pounds.

789. A primis diebus funis prodit ex umbilico, constans ex
From the first days a cord proceeds from the navel, consisting of
 binis arteriis, quibus unica vena respondet, et format placentam
two arteries, to which a single vein answers, and forms the placenta
 quæ tecta (quoad) concavam partem intimâ membranâ
which covered as to its concave portion with the inmost membrane
 ovi, convexam externâ, plerumque adnectitur ovo
of the ovum, on its convex with the external, generally is connected with the ovum
 et utero prope superiorem partem utriusque et efficit comateum
and uterus near the upper part of both and effects a communication
 inter matrem que fœtum, nimirum ducens sanguinem ab alterâ
between the mother and fœtus, namely carrying the blood from the one
 ad alterum que reducens.
to the other and bringing it back.

790. Profecto nondum constat apud medicos quo modo
Indeed it is not yet agreed among physicians by what means
 hic comateus absolvatur, sive iter a matre ad
this communication is effected, whether the passage from the mother to
 fœtum sit per continua vasa vehentia sanguinem, sive
the fœtus be by continuous vessels carrying blood, or whether
 sanguis effundatur in cavernulas ex vasis utriusque,
blood be poured out into little cells from the vessels of each,
 resorbendus denuo per hiantia vasa. Lis ipsa dirimenda
to be absorbed again by open vessels. The dispute itself to be removed
 experiendo non argumentando, pertinet parum ad medicum
(settled) by experimenting not by arguing, pertains little to medical
 usum. Tamen, oportet meminisse auctum impetum sanguinis
practice. However, it is necessary to remember that the increased impetus of the blood
 in vasis uteri sæpe separare placentam et ideo
in the vessels of the uterus often separates the placenta and on that account
 inducere abortum, et hanc (placentam) quocunque modo separatam,
brings on abortion, and that it in whatever way separated,
 sive naturali partu, sive abortu, sivi magnâ vi admotâ
whether by natural parturition, or by abortion, or by great force applied
 funi umbilici, veluti ab imperitâ obstetrice post partum
to the cord of the navel, as by an unskilful obstetrician after delivery
 semper efficere aliquem, nonnunquam ingentem et lethalem, fluxum
always causes some, sometimes a great and fatal, flow
 sanguinis.
of blood.

ovum fere impleat, parca relicta aqua, ipse tum sesquipedalis, et circiter octo libras pendens.

789. A primis diebus funis ex umbilico prodit, ex binis arteriis constans, quibus unica vena respondet, et placentam format, quæ intima ovi membrana tecta concavam partem, externa convexam, ovo et utero plerumque prope partem superiorem utriusque adnectitur, et comateum inter matrem fœtumque efficit, sanguinem nimirum ab altera ad alterum ducens reducensque.

790. Nondum profecto constat apud medicos, quo modo hic comateus absolvatur, sive per vasa sanguinem vehentia continua, iter a matre

ad fœtum sit, sive sanguis ex utriusque vasis effundatur in cavernulas, per vasa hiantia denuo resorbendus. Lis ipsa, experiendo non argumentando dirimenda, parum ad usum medicum pertinet. Oportet tamen meminisse, auctum sanguinis in vasis uteri impetum placentam sæpe separare, et ideo abortum inducere, et hanc quocunque modo separatam, sive partu naturali, sive abortu, sive magna vi funi umbilici admota, veluti ab imperita obstetrice post partum, aliquem semper sanguinis fluxum, nonnunquam ingentem et lethalem, efficere.

791. Singularis cursus sanguinis in fœtu longe diversus ab
A particular course of the blood in the fœtus far different from
 eo qui observatur in adulto, nimirum, per foramen ovale,
that which is observed in the adult, namely, through the foramen ovale,
 et ductum arteriosum, inter pulmonalem arteriam et aortam, et
and ductus arteriosus, between the pulmonary artery and aorta, and
umbilicales arterias et placentam, et umbilicalem venam et ductum
the umbilical arteries and placenta, and the umbilical vein and ductus
venosum, jam descriptus est; neque igitur repetendus
venosus, has already been described; nor therefore to be repeated
 fusus hic.
more at large here (in this place).

792. Parum constat de origine variarum tunicarum
It is not at all established concerning the origin of the different tunics
 quæ formant ovum, sive formentur ex fœcundis liquoribus
which form the ovum, whether they be formed of the fecundating liquors
 utriusque sexûs non secus ac fœtus ipse, sive deriventur
of both sex in like manner as the fœtus itself, or whether they be derived
 ab utero. Saltem exterior membrana chorii, dicta
from the uterus. At least the external membrane of the chorion, named
 decidua, videtur esse ab utero nimirum quæ fertur
the decidua, seems to be (arise) from the uterus as being one which is said
 adfuisse in utero quum fœtus que ovum hærent in
to have been in the uterus when the fœtus and ovum were sticking in
 Fallopianâ tubâ.
the Fallopian tube.

793. Uterus ipse crescit in mirum modum dum mulier
The uterus itself grows in a wonderful degree whilst the woman
 est gravida, factus fere quinquagies capaciôr quam fuerat
is pregnant, becoming nearly fifty times more capacious than it had been
 in virgine. Neque fit ideo tenuior: scilicet
in the virgin. Nor does it become on that account thinner: because
 vasa vehentia sanguinem evolvuntur, et continent plurimum
the vessels carrying blood are evolved, and contain a great deal of
 sanguinem, et forsan reticulata tela, quæ nectit musculosas
blood, and perhaps the cellular tissue, which connects the muscular
 fibras, crescit quoque.
fibres, grows also.

794. Nonnullæ mulieres, ut fertur, statim ut conceperint,
Some women, as it is said, as soon as they have conceived,
 norunt id certo sensu, qualis abfuit a sterili venere,
know it by a certain feeling, such as was absent from a barren embrace,

791. Singularis sanguinis in fœtu cursus, ab eo qui in adulto observatur longe diversus, nimirum per foramen ovale, et ductum arteriosum inter arteriam pulmonalem et aortam, et arterias umbilicales et placentam, et venam umbilicalem et ductum venosum, jam descriptus est (417); neque igitur hic fusus repetendus.

792. Parum constat de origine variarum quæ ovum formant tunicarum, sive ex liquoribus fœcundis utriusque sexus formentur, non secus ac ipse fœtus, sive ab utero deriventur. Exterior saltem membrana chorii, decidua dicta, ab utero videtur esse, nimirum quæ in utero adfuisse

fertur, quum fœtus ovumque in tuba Fallopiana hærent.

793. Uterus ipse, dum mulier gravida est, mirum in modum crescit, quinquagies fere capaciôr factus quam in virgine fuerat. Neque ideo tenuior fit: vasa scilicet sanguinem vehentia evolvuntur, et plurimum sanguinem continent, et tela forsan reticulata, quæ fibras musculosas nectit, crescit quoque.

794. Nonnullæ mulieres, ut fertur, statim ut conceperint, id norunt, certo sensu, qualis a sterili venere abfuit, et horrore aliquo illico ingruento, et nausea, postridie fortasse, vel

et aliquo horrore ingruente illico, et nausæ accedente
and some shivering attacking thereupon, and nausea coming on
 postriedie fortasse, vel saltem paucis diebus. Plerisque mulieribus
the following day perhaps, or at least in a few days. In most women
 dum gerunt uterum, os ejus clauditur, et sunt
whilst they carry the uterus, the mouth of it is closed, and there are
 nulli menses, et norunt potissimum hoc signo se
no menses, and they know chiefly by this sign that they
 concepsisse. Neque tamen est adeo rarum gravidam
have conceived. Nor however is it so uncommon that a pregnant woman
 habere solitum fluxum (sc. mensium) primis mensibus.
should have the usual flow in the first months.

795. Multæ (sc. mulieres) laborant a stomacho usque a
Many suffer from the stomach incessantly from
 conceptu ad partum, et vexantur importunissimâ nausæ et
conception till delivery, and are teased with the most urgent nausea and
 vomitu, præsertim matutinis horis; paucæ quidem sunt omnino
vomiting, especially in the morning time; few indeed are wholly
 immunes ab his malis, ita ut vix habeantur
exempt from these evils, so that they scarcely can be considered
 morbosa (sc. mala). Abnormis appetitus cibi que potûs, qualis vocatur
diseased. An irregular appetite for food and drink, such as is called
 Malacia, nonnunquam accidit gravidis. Mala hujusmodi
Malacia, sometimes happens to gravid women. Disorders of this sort
 oriuntur a consensu inter stomachum et uterum, que ne
arise from the sympathy between the stomach and uterus, and not
 ab mole hujus organi comprimente reliqua viscera:
from the bulk of the latter organ compressing the remaining viscera:
 quippe quia sæpe incipiunt prius quam uterus tumeat, et
in as much as they often begin before that the uterus can swell, and
 aliquando desinunt vel sublevantur ultimis mensibus graviditatis,
sometimes cease or are relieved in the last months of pregnancy,
 cum uterus est amplissimus.
when the uterus is largest.

796. Haud pauca alia incommoda quoque aliquando oriuntur a
Not a few other inconveniences also sometimes arise from
 graviditate, præsertim tumor pedum et crurum, hæmorrhoids
pregnancy, especially swelling of the feet and legs, hæmorrhoids (piles),
 et quædam vitia urinæ; ratio quarum rerum est
and certain disorders of the urine; the reason of which things is
 haud obscura. Vero nonnullæ mulieres dum sunt plenæ
not obscure. But some women whilst they are full (pregnant)

saltem paucis diebus, accedente. Plerisque mulieribus, dum uterum gerunt, os ejus clauditur, et menses nulli sunt, et hoc potissimum signo norunt se concepisse. Neque tamen adeo rarum est, gravidam primis mensibus solitum fluxum habere.

795. Multæ a conceptu ad partum usque a stomacho laborant, et importunissima nausæ, et vomitu, præsertim horis matutinis, vexantur: paucæ quidem ab his malis omnino immunes sunt, ita ut vix morbosa habeantur. Abnormis cibi potusque appetitus, qualis Malacia (615) vocatur, nonnunquam gravidis accidit. Hujus-

modi mala a consensu inter stomachum et uterum oriuntur, neque ab hujus organi mole reliqua viscera comprimente: quippe quia prius incipiunt sæpe, quam uterus tumeat, et aliquando desinunt, vel sublevantur, ultimis mensibus graviditatis, cum uterus amplissimus est.

796. Alia quoque haud pauca a graviditate aliquando oriuntur incommoda; pedum præsertim et crurum tumor, hæmorrhoids, et quædam urinæ vitia (743, 744); quarum rerum ratio haud obscura est. Nonnullæ vero mulieres, dum plenæ sunt, optima et firmissima valetu-

fruuntur optimâ et firmissimâ valetudine: ita ut
enjoy the best and firmest (most steady) health: so that
 graviditas sæpe fuerit his remedio multorum morborum.
pregnancy often will bring to them the remedy (of) for many diseases.

797. Finis graviditatis est nono mense: mulier rarissime
The end of pregnancy is in the ninth month: a woman very seldom
 gerit uterum ultra decem menses. Partus sex mensium superstites
carries the uterus beyond ten months. Births of six months that survive
 rarissime observantur; vero septem et octo mensium sæpe, et
very seldom are observed; but of seven and eight months often, and
 quo propius ventum fuit (sc. ab iis imperis.) ad justum tempus,
the nearer they have approached to the proper time,
 eo validior infans, et in meliore spe.
the stronger the infant (is), and in the better hope.

798. Demum, justo tempore, quum fœtus tandem adeptus est
Finally, at the due time, when the fœtus at length has acquired
 debitam molem et vigorem, et liquor amnii factus est pro
its proper bulk and vigour, and the liquor amnii has become in
 ratâ parte multo parcior, que igitur uterus magis stimulat
proportion much more scanty, and therefore the uterus is more stimulated
 pondere et motu infantis, dolores puerperii adoriuntur,
by the weight and motion of the infant, the pains of labour arise,
 naturali molimine ad producendos menses, ut videtur, sæpe
the natural endeavour to produce the menses, as it seems, often
 juvante.
assisting.

799. Isti dolores paulatim recrudescentes frequentius excitant
Those pains by degrees recurring more frequently excite
 uterum ipsum, et musculos respirationis, qui consentiunt cum
the uterus itself, and the muscles of respiration, which cooperate with
 eo (sc. utero), ad validam contractionem, quæ (sc. contractio) tandem
it to powerful contraction, which at length
 patefaciat os uteri, que propellat membranas ovi per
opens the os uteri, and propels the membranes of the ovum through
 hoc in vaginam: ibi ruptæ vel laceratæ vel vi
it into the vagina: there ruptured or lacerated either by the violence
 contractionis, vel externâ arte, effundunt liquorem amnii cum
of the contraction, or by external art, they pour out the liquor amnii with
 pauxillo sanguinis, qui laxet atque emolliat partes per quas
a little blood, which relaxes and softens the parts through which
 fœtus debet exire.
the fœtus ought to go out.

dine fruuntur: ita ut his graviditas multorum sæpe morborum remedio fuerit.

797. Finis graviditatis nono mense est: rarissime ultra decem menses uterum gerit mulier. Partus sex mensium rarissime superstites observantur: septem vero et octo mensium sæpe, et quo propius ad justum tempus ventum fuit, eo infans validior, et in meliore spe.

798. Justo demum tempore, quum fœtus tandem adeptus est debitam molem et vigorem, et liquor amnii pro rata parte multo parcior factus est (788), uterusque igitur, pondere et motu infantis magis stimulatnr, dolores puerperii

adoriuntur, juvante sæpe, ut videtur, molimine naturali ad menses producendos.

799. Isti dolores paulatim frequentius recrudescentes uterum ipsum, et qui cum eo consentiunt respirationis musculos, ad validam contractionem excitant, quæ tandem os uteri patefaciat, membranasque ovi per hoc in vaginam propellat: ibi vel vi contractionis, vel arte externa, ruptæ vel laceratæ, liquorem amnii cum pauxillo sanguinis effundunt, qui partes, per quas fœtus exire debet, laxet atque emolliat.

800. Tum dolores fere mitescunt paulisper, autem reddituri
Then the pains generally moderate a little, but to return
 brevi vehementiores, que tandem expulsuri infantem, præcipitem,
shortly more violent, and at length to expel the infant, head foremost,
 cum immani cruciату, et tremore totiùs corporis, aliquando
with severe torture, and tremor of the whole body, sometimes
 etiam convulsione nonnunquam forsân lethali: vero quam primum
even with a convulsion occasionally perhaps fatal: but as soon as
 caput ejùs exiverit reliquum corpus facile sequitur.
the head of it has gone forth the rest of the body easily follows.

801. Brevi post partum placenta separatur ab utero, et
Shortly after birth the placenta is separated from the uterus, and
 expellitur cum reliquâ partibus ovi, plerumque
is expelled with the rest (of) the parts of the ovum, for the most part
 non sine magnâ jacturâ sanguinis, qualis sæpe non caruerit
not without great loss of blood, such as often would not be free
 periculo, præsertim si aliqua vis ad separandam placentam fuerit
from danger, especially if any force to separate the placenta should be
 admota. Vero plerumque fluxus sanguinis brevi compescitur, vel
applied. But generally the flow of blood quickly is suppressed, or
 saltem temperatur subitâ et validissimâ contractione uteri:
at least is moderated by the sudden and very strong contraction of the uterus:
 ita ut fluxus, qui vocatur lochia, brevi evadat parclor et
so that the flux, which is called lochia, soon becomes more scanty and
 pallidior, et tandem omnino serosus. Idem serius ocyus
paler, and at length altogether serous. The same later (or) sooner
 reprimitur penitus, secundum constitutionem puerperæ
is repressed entirely, according to the constitution of the puerperal woman
 et rationem vitæ: nonnullis uno vel altero die, vero
and the manner of life: in some on the first or second day, but
 nonnullis vix intra mensem; recurrit quoque interdum quum
in some scarcely within the month; it recurs also sometimes when
 puerpera primo redit ad solita munera.
the puerperal woman first returns to her usual duties.

802. Corpus, debilitatum et exhaustum doloribus, et nixu, et
The body, debilitated and exhausted with pains, and straining, and
 jacturâ sanguinis, non recuperat illico vires, et partim
the loss of blood, does not recover immediately its strength, and partly
 propter infirmitatem, partim propter auctam mobilitatem et
because of weakness, partly through increased mobility and
 sensum, afficitur multum et male sæpe levibus causis. Neque
sensibility, is affected much and badly often from slight causes. Nor

800. Tum dolores paulisper fere mitescunt, brevi autem vehementiores reddituri, tandemque cum immaui cruciату, et totiùs corporis tremore, aliquando etiam convulsione, forsân lethali nonnunquam, infantem præcipitem expulsuri: quam primum vero caput ejus exiverit, reliquum corpus facile sequitur.

801. Brevi post partum, placenta ab utero separatur, et cum reliquis ovi partibus expellitur, non sine magna plerumque sanguinis jactura, qualis sæpe periculo non caruerit, præsertim si vis aliqua ad separandam placentam admota fuerit. Plerumque vero sanguinis fluxus brevi

compescitur, vel temperatur saltem, subita et validissima uteri contractione: ita ut fluxus, qui lochia vocatur, brevi parclor et pallidior, et tandem serosus omnino evadat. Idem serius ocyus reprimitur penitus, secundum puerperæ constitutionem, et vitæ rationem: nonnullis die uno vel altero, nonnullis vero vix intra mensem; recurrit quoque interdum, quum primo puerpera ad solita munera redit.

802. Corpus, doloribus, et nixu, et sanguinis jactura, exhaustum et debilitatum, non illico vires recuperat, et partim propter infirmitatem, partim propter auctam mobilitatem et sensum,

sane omnis cura quæ datur puerperis absurda: vero
indeed (is) all the care which is given to puerperal women absurd: but
 erraverunt multum qui, habentes omnem puerperam pro
they have erred much who, considering every puerperal woman as
 morbosâ, voluerunt custodire eas nimîa solitudine,
a diseased one, wished to guard them with too much care,
 et non modo defendere a gravi irritatione, aut frigore, sed
and not only to defend them from great irritation, or cold, but
 fovere perpetuo calore, vel fortasse adhibere remedia ad
to heat them with constant heat, or perhaps to exhibit remedies to
 excitandum sudorem; scilicet quia talis ratio ipsa tractandi
excite sweating; truly because such a method itself of treating
 non caret periculo, et debilitat corpus magis que magis, et
is not devoid of danger, and debilitates the body more and more, and
 reddit aptius ad suscipiendos morbos.
renders it more fit (liable) to take on diseases.

803. Incerto tempore post partum sanguis, pulsus contractione
At an uncertain period after parturition the blood, driven by the contraction
 uteri, ab eo fertur majore copiâ versus mammas
of the uterus, from it is conveyed in greater quantity towards the mammae,
 quæ brevi tument, et incipiunt secernere lac. Tantus fluxus
which shortly swell, and begin to secrete milk. So great a flow
 sanguinis ad mammas aliquando accidit, ut ipsæ turgid
of blood to the breasts sometimes occurs, that they become turgid
 multum et nonnunquam inflammentur et
very much (become greatly turgid) and sometimes are inflamed and
 suppurentur, et sic vel secreto lactis impediatur, vel lac
are suppurated, and thus either the secretion of milk is impeded, or the milk
 jam secretum nequeat exsugi præ dolore et tumore
already secreted cannot be sucked out for the pain and the swelling
 fere obruente papillam mammæ. Aliquando etiam mulieres,
almost burying in the nipple of the breast. Sometimes even women,

alioquin sanæ, habent nullum lac; quod tamen est
in other respects healthy, have no milk; which however is
 multo rarius vitium quam vulgo dictum est. Plerumque
by much a rarer defect than commonly has been said. Generally
 si infans admovetur mammæ paucis horis post partum, ut
if the infant be put to the breast a few hours after delivery, as
 Natura ipsa docet esse faciendum, (supp. nobis,) neque
Nature herself teaches ought to be done, (or that we ought to do,) neither
 lac deficit, neque venit nimis subito, neque vehemens
does the milk fail, nor does it come too suddenly, nor do the violent

levibus sæpe causis multum et male afficitur. Neque sane absurda omnis quæ puerperis datur cura: multum vero erraverunt, qui omnem puerperam pro morbosa habentes, eas nimia solitudine custodire voluerunt, et non modo a gravi irritatione, aut frigore defendere, sed perpetuo calore fovere, vel fortasse remedia adhibere ad sudorem excitandum: scilicet, quia talis tractandi ratio ipsa periculo non caret, et corpus magis magisque debilitat, et ad morbos suscipiendos aptius reddit.

803. Incerto post partum tempore, sanguis, uteri contractione ab eo pulsus, mammas versus majore copia fertur, quæ tument brevi, et lac

incipiunt secernere. Aliquando tantus sanguis ad mammas fluxus accidit, ut ipsæ multum turgæant, et nonnunquam inflammentur et suppurentur, et sic vel lactis secreto impediatur, vel lac jam secretum exsugi nequeat præ dolore, et tumore mammæ papillam fere obruente. Aliquando etiam mulieres, alioquin sanæ, nullum lac habent: quod tamen multo rarius vitium est, quam vulgo dictum est. Plerumque, si infans paucis post partum horis mammæ admovetur, ut ipsa Natura faciendum esse docet, neque lac deficit, neque nimis subito venit, neque vehemens tumor, neque inflammatio mammarum, neque fibris, acci-

tumor, neque inflammatio mammarum neque febris accidunt,
swelling, nor the inflammation of the breasts nor the fever come on,
 et eo citius fluxus sanguinis ab utero reprimitur.
and the more quickly the flow of blood from the uterus is restrained.

804. Lac, quale primum secernitur post partum, est tenue et parum
Milk, such as it is first secreted after delivery, is thin and no way
 nutriens, et ut vulgo fertur, purgat infantem deorsum
nutrient, and as is commonly said, purges the infant downwards
 magis quam aliud lac; quod tamen est minus certum; vero
more than other milk; which however is less certain; but
 paulatim fit crassius et magis nutriens. Si mulier alit
gradually it becomes thicker and more nutrient. If a woman suckles
 suum infantem menses plerumque non redeunt per majorem partem
her child the menses generally do not return for the greater part
 anni, vel fortasse per integrum annum; neque nutrix facile
of the year, or perhaps for a whole year; nor does the nurse easily
 fit gravida hoc tempore, quamvis non abstinuerit a
become gravid at this period, although she should not have abstained from
 venere: sin minus, menses solent redire fere
venery; but if not (do not suckle), the menses are accustomed to return nearly
 menstruo spatio post partum.
at the menstrual interval after delivery.

805. Si nutrix pergit nutrire infantem, lac manebit
If the nurse continues to suckle the infant, the milk will remain
 forsitan per plures annos. Vero si infans fuerit depulsus
perhaps for several years. But if the infant should be driven
 a mamma secretio lactis reprimetur brevi.
from the breast (weaned) the secretion of milk will be suppressed in a short time.

Observatur lac, mensibus instantibus, plerumque male
It is observed that milk, the menses approaching, generally badly
 afficere infantem, quamvis dum fluunt sæpe non noceat
affects the child, although whilst they are flowing often it does not hurt
 eidem (sc. infanti).
the same.

806. Quædam mulieres exhauriuntur alendo infantem, et habent
Some women are exhausted by suckling the child, and feel
 se male. Vero pleræque hoc tempore fruuntur optimâ sanitate:
themselves badly. But most at this time enjoy the best health:
 appetunt cibum præter solitum, et concoquunt bene, et dormiunt
they desire food beyond the usual, and digest well, and sleep
 bene, et sunt boni coloris, et sæpe pinguescunt. Neque
well, and are of a good colour, and often grow fat. Nor

dunt, et sanguinis ab utero fluxus eo citius reprimitur.

804. Lac, quale primum post partum secernitur, tenue est, et parum nutriens, et, ut vulgo fertur, infantem deorsum purgat magis quam aliud lac; quod tamen minus certum est; paulatim vero crassius fit et magis nutriens. Si mulier suum infantem alit, menses plerumque non redeunt per majorem partem anni, vel fortasse per annum integrum; neque hoc tempore nutrix facile gravida fit, quamvis a venere non abstinuerit; sin minus, menses redire solent menstruo spatio.

805. Si nutrix infantem nutrire pergit, lac manebit forsitan per plures annos. Si vero infans a mamma depulsus fuerit, secretio lactis brevi reprimetur. Observatur lac, instantibus mensibus, infantem plerumque male afficere, quamvis dum fluunt, eidem sæpe non noceat.

806. Quædam mulieres infantem alendo exhauriuntur, et male se habent. Pleræque vero optima hoc tempore sanitate fruuntur: cibum præter solitum appetunt, et bene concoquunt, et bene dormiunt, et boni coloris sunt, et sæpe pinguescunt. Neque profecto rarum est, plures

perfecto est rarum plures morbos, præsertim quales ducunt
indeed is it uncommon that many diseases, especially such as derive
originem a abnormali distributione sanguinis, arceri vel
their origin from an irregular distribution of the blood, are prevented or
depelli, donec mulier gerat uterum, vel postea alat infan-
driven away, while a woman is pregnant, or afterwards nurses the infant.

807. Postremo, est dignum observatu, quamvis periculum haud
Lastly, it is worthy to be observed, although the danger should not
fuerit exiguum in puerperio fœcundas vivere diutius et
be trifling in child-bearing, that fruitful live longer and
sanius quam steriles (sc. fœminas) que eas quæ nupserant
more healthily than barren (women) and those who had married
primâ juventute, et fuerant fœcundissime quam eas quæ
in early youth, and had been most fruitful than they who
factæ erant matres serius. Est verisimile nonnullos morbos
had become mothers later. It is probable that some diseases

quibus amabilis sexus plectitur, qui non modo afficiunt
with which the lovely sex is attacked, which not only affect
genitalia organa ipsa sed sæpe labefactant totam valetudinem,
the genital organs themselves but often undermine the whole health,

vel induci vel multum ingravescere viginitate; ad quam
either are induced or greatly increase by virginity; for which
scilicet, fœminæ sunt non natæ: neque est incredibile eosdem
truly, women are (were) not born: nor is it incredible that the same
morbos sæpe sanatum iri connubio ratione haud obscurâ.
diseases often would be cured by marriage for a reason no way obscure.

808. Demum, cuncta numerâ propria muliebri sexui sæpe
In fine, all the functions peculiar to the female sex often
vitiantur, non sine gravi incommodo et magno periculo
are vitiated, not without serious inconvenience and great danger
valetudinis.
of health.

809. Est plane vitium, si menses non proflexerint
It is evidently a disease, if the menses should not have flowed forth

solitâ ætate: ætas quâ puellæ incipiunt habere menses
at the usual age: the age at which girls begin to menstruate

variat multum, sanitate adhuc salvâ; scilicet qui fere
varies much, the health being still good; as being which commonly

accidunt maturius in calidis regionibus, que puellis bene pastis
come on earlier in hot climates, and in girls well fed

et luxuriosis, et desidibus que iis quæ crescunt subito, et
and luxurious, and indolent and those who grow suddenly, and

morbos, præsertim quales a distributione sanguinis abnormali (474, 478) originem ducunt, arceri, vel depelli, donec mulier uterum gerat, vel postea infantem alat.

807. Postremo, observatu dignum est, quamvis periculum in puerperio haud exiguum fuerit, fœcundas quam steriles, easque quæ prima juventute nupserant, et fœcundissimæ fuerant, quam eas quæ serius matres factæ erant, diutius et sanius vivere. Verisimile est, nonnullos quibus amabilis sexus plectitur morbos, qui non modo ipsa genitalia organa afficiunt, sed totam valetudinem sæpe labefactant, vel induci virginitate, vel multum ingra-

vescere; scilicet, ad quam non natæ sunt fœminæ: neque incredibile est, eosdem sæpe morbos, haud obscura ratione, connubio sanatum iri.

808. Cuncta demum munera muliebri sexui propria sæpe vitiantur, non sine gravi incommodo, et magno valetudinis periculo.

809. Vitium plane est, si menses solita ætate non proflexerint: ætas qua puellæ menses habere incipiunt variat multum, salva adhuc sanitate; scilicet, qui maturius fere accidunt in regionibus calidis, puellisque bene pastis, et luxuriosis, et desidibus, iisque quæ subite crescunt, et justam corporis formam cito

cito adipiscuntur justam formam corporis; vero tardius, etiam
quickly attain the due form of body; but more slowly, even
 citra morbum in frigidis regionibus, et puellis debilibus crescentibus
without disease in cold countries, and in girls weakly, growing
 lente, tolerantibus vitam tenui victu, et assuetis valido
slowly, supporting life on slender diet, and accustomed to hard
 labori.
labour.

810. Vero plerumque, si menses non prorumpunt justo
But generally, if the menses do not break forth at the proper
 tempore, valetudo multum afficitur. Omnis vigor perit, fere
time, the health is much affected. All vigour perishes, nearly
 singulæ functiones corporis impediuntur plus ve minus, appetentia
all the functions of the body are impeded more or less, the desire
 cibi deficit aut vitatur, concoctio ejus corrumpitur, totum
for food fails or is vitiated, the concoction of it is corrupted, the whole
 corpus solvitur, flaccescit, pallet, marcescit, sanguis ipse
body is relaxed, grows flaccid, grows pale, wastes, the blood itself,
 evadit tenuis et pallidus, et sic via sternitur plurimis morbis.
becomes thin and pallid, and thus the way is paved for many diseases.
 Talis defectus mensium dicitur *Emansio* apud medicos (frequentius
Such a defect of the menses is called Emansio by physicians

hodie terentio.) Lenta valetudo oriunda ex eâ vocatur *chlorosis*.
The lingering disease arising from it is called chlorosis.

811. Vero sæpe postquam menses profluxerint diu justis
But often after that the menses have flowed a long time at the proper
 intervallis ut decet (sc. iis), vel non redeunt solito
intervals (periods) as they ought, either they do not return at the usual
 tempore, citra graviditatem, vel jam fluentes subito reprimuntur.
period, without pregnancy, or already flowing suddenly are suppressed.

Hoc genus mali vocatur *Amenorrhœa* seu suppressio mensium.
This kind of disease is called Amenorrhœa or suppression of the menses.

812. Hinc plurima mala; autem varia secundum constitutionem
Hence many diseases; but varying according to the constitution
 ægræ (sc. fœminæ) que multas externas concurrentes res: primo plenitudo
of the patient and many external concurring things: first fulness
 vasorum uteri vehementium sanguinem, postea universi
of the vessels of the uterus carrying blood, afterwards of the whole
 corporis, abnormis distributio sanguinis et auctus impetus ejus,
body, irregular distribution of the blood and increased impetus of it,
 febris, congestiones sanguinis in variis partibus, fluxus sanguinis
fever, congestions of blood in different parts, fluxes of blood

adipiscuntur; tardius vero, etiam citra morbum, in regionibus frigidis, et puellis debilibus, lente crescentibus, victu tenui vitam tolerantibus, et valido labori assuetis.

810. Plerumque vero, si menses justo tempore non prorumpunt, valetudo multum afficitur. Vigor omnis perit, singulæ fere corporis functiones plus minusve impediuntur, appetentia cibi deficit aut vitatur, concoctio ejus corrumpitur, totum corpus solvitur, flaccescit, pallet, marcescit, sanguis ipse tenuis et pallidus evadit, et sic plurimis morbis via sternitur. Talis mensium defectus *Emansio* apud medicos

dicitur. Lenta valetudo ex ea oriunda *Chlorosis* vocatur.

811. Sæpe vero, postquam menses diu, ut decet, justis intervallis profluxerint, vel solito tempore, citra graviditatem, non redeunt, vel jam fluentes subito reprimuntur. Hoc mali genus *Amenorrhœa* vocatur, seu *Suppressio Mensium*.

812. Plurima hinc mala; varia autem secundum constitutionem ægræ, multasque res externas concurrentes: plenitudo primo vasorum sanguinem vehementium uteri, postea universi corporis, distributio sanguinis fluxus a maribus

a naribus, pulmonibus, ventriculo, ano, in quibusdam exemplis, ut
from the nose, lungs, stomach, anus, in some examples, as
 fertur, ab fere omni parte corporis: dolor lumborum,
it is said, from almost every part of the body: pain of the loins,
 capitis, pectoris, ventriculi, vertigo, nimia mobilitas, aliquando
head, breast, stomach, vertigo, excessive irritability, sometimes
hysteria, tandem generalis debilitas, omnes functiones, impeditæ, et
hysteria, at length general debility, all the functions, impeded, and
 valetudo labefacta ab omni parte.
the health undermined from (in) every part.

813. Variæ causæ mensium vel suppressorum vel nunquam
The various causes of the menses either being suppressed or never
 profluentium sunt eo magis dignæ attentione quod sanatio
flowing forth are the more worthy attention because the cure
 morbi et revocatio fluxûs potissimum pendent ex naturâ
of the disease and the recall of the discharge principally depend upon the nature
 earum (sc. causerum) bene perspectâ.
of them being well understood.

814. Menses deficient aliquando fortasse, sed rarissime, propter
The menses fail sometimes perhaps, though very seldom, through
 pravam fabricam uteri quâ minus valeat ad congerendum
a depraved structure of the uterus by which it is less adequate to accumulate
 et effundendum sanguinem; interdum etiam, quamvis haud multo
and pour out the blood; sometimes also, although not much
 frequentius sanguis effusus in uterum reprimatur ibi,
more frequently the blood poured out into the uterus is retained there,
 viâ scilicet, ex utero impeditâ præter naturam.
the passage, indeed, from the uterus being impeded unnaturally.

815. Vero sæpius, fabricâ organorum omnino salvâ,
But more often, the structure of the organs being altogether sound,
 menses non prorumpunt solitâ ætate ob defectum istius
the menses do not break forth at the usual age through a want of that
 conditionis, ovariorum unde secretio fœcundorum
condition, of the ovaries whence (upon which) the secretion of the fecundating
 humorum qui videntur esse stimulo utero pendet; vel
fluids which seem to be a stimulus to the uterus depends; or
 propter corpus non bene nutritum aut exhaustum gravi
on account of the body not being well nourished or exhausted by severe
 labore aut valetudine, vel denique valde debilitatum quâcunque
labour or disease, or in fine greatly debilitated by whatever
 causâ, ita ut vel nulla abundantia sanguinis possit fieri, vel
cause, so that either no abundance of blood can take place, or

pulmouibus, ventriculo, ano, in quibusdam ut fertur exemplis, ab omni fere corporis parte: dolor lumborum, capitis, pectoris, ventriculi, vertigo, nimia mobilitas, hysteria aliquando, tandem debilitas generalis, omnesque functiones impeditæ, et valetudo ab omni parte labefacta.

813. Variæ sunt causæ mensium vel suppressorum, vel nunquam profluentium, eo magis attentione dignæ, quod ex earum natura bene perspecta, morbi sanatio et fluxus revocatio potissimum pendent.

814. Deficiunt aliquando fortasse menses, sed rarissime, propter pravam uteri fabricam, qua

minus valent ad sanguinem congerendum et effundendum; interdum etiam, quamvis haud multo frequentius, sanguis in uterum effusus ibi reprimatur, via scilicet ex utero præter naturam impedita.

815. Sæpius vero, salva omnino organorum fabrica, menses solita ætate non prorumpunt ob defectum istius conditionis ovariorum, unde secretio humorum fœcundorum qui utero stimulo videntur esse (771) pendet; vel propter corpus non bene nutritum, aut gravi labore aut valetudine exhaustum, vel denique quâcunque causa valde debilitatum, ita ut vel nulla sanguinis abundantia fieri possit, vel si-

si qua (abundantia) fuerit facta nulla vis adsit quæ invitet
if any should be produced no force is present which can invite
 sanguinem ad uterum, vel propellat per vasa ejûs. Ex iisdem
the blood to the uterus, or propel it through the vessels of it. From the same
 causis menses sæpe supprimuntur fœminis quæ ante habuissent eos
causes the menses often are suppressed in women who before had them
 naturali modo.
in the natural way.

816. Sæpe etiam menses jam instantes impediuntur, vel dum
Often also the menses now approaching are impeded, or whilst
 fluunt subito sistuntur variis causis quales possint inducere
they are flowing suddenly are stopped by various causes such as may bring on
 vel debilitatem istius modi, vel contractionem, aut spasmus utero
either debility of that kind, or contraction, or a spasm upon the uterus
 que arteriis ejûs, vel divertere sanguinem allo: cujusmodi sunt
and the arteries of it, or divert the blood elsewhere: of which kind are
 vehementes affectus animi, sive excitantes sive deprimentes, frigus
violent affections of the mind, whether exciting or depressing, cold
 præsertim admotum pedibus, magnæ exinanitiones, fortiora medicamenta,
especially applied to the feet, large evacuations, stronger medicines,
 demum varii morbi. Menses quoque instantes impediuntur, vel
in fine various diseases. The menses also impending are impeded, or
 fluentes reprimuntur eo facilius causis quæ viderentur
while flowing are suppressed the more easily by causes which seem
 levissimæ, que suppressi nocent eo magis quod dum instant vel
the slightest, and suppressed hurt the more because whilst they approach or
 fluunt insolita mobilitas universi corporis viget.
are flowing an unusual irritability of the whole body prevails.

817. Hinc ratio erit in promptu cur plurima et admodum
Hence the reason will be in readiness why very many and very
 diversa remedia aut inducant aut revocent menses, aut
different (opposite) remedies either may induce or recall the menses, or
 sublevant mala provenientia ex suppressione eorum;
relieve the disorders proceeding from the suppression of them;
 nimirum quæ impleant, depleant, roborent laxent stimulent
as being things which can replete, deplete, strengthen, relax, stimulate,
 sopiant corpus, ve dirigant sanguinem versus uterum: qualia
lull the body, or direct the blood towards the uterus: such
 sunt lautior victus, detractio sanguinis, stimulantia medicamenta,
are more sumptuous fare, abstraction of blood, stimulating medicines,
 veluti niger helleborus, aut calida gummi, electrica aura, exercitatio,
as black hellebores, or the warm gums, the electric spark, exercise,

qua facta fuerit, vis nulla adsit quæ sanguinem ad uterum invitet, vel per ejus vasa propellat. Ex iisdem causis, menses sæpe supprimuntur fœminis quæ ante eos naturali modo habuissent.

816. Sæpe etiam impediuntur jam instantes menses vel subito sistuntur, dum fluunt, variis causis, quales vel istiusmodi debilitatem, vel contractionem, aut spasmus utero ejusque arteriis inducere vel sanguinem alio divertere possint: cujusmodi sunt vehementes animi affectus, sive excitantes sive deprimentes, frigus, præsertim pedibus admotum, magnæ exinanitiones, medicamenta fortiora, varii

demum morbi. Menses quoque eo facilius impediuntur instantes, vel reprimuntur fluentes causis quæ viderentur levissimæ, suppressive quoque magis nocent, quod insolita, dum instant vel fluunt, universi corporis mobilitas viget.

817. Hinc ratio in promptu erit, cur plurima, et admodum diversa remedia, aut inducant aut revocent menses, aut mala sublevant ex eorum suppressione provenientia; nimirum, quæ corpus impleant, depleant, roborent, laxent, stimulent, sopiant, sanguinem versus uterum dirigant: qualia sunt victus lautior, sanguinis detractio, stimulantia medicamenta, veluti helleborus niger, aut gummi calida, aura

bañeum, fomenta, opium, &c. neque erit mirum omnia, etiam
the bath, fomentations, opium, &c. nor will it be wonderful that all, even
 laudatissima remedia sæpe fallere spem medici; neque sane
the most celebrated remedies often deceive the hope of the physician; nor indeed
 (est) credibile quodvis remedium unquam repertum iri, vel casu vel
(it is) credible that any remedy ever will be found, either by accident or
 ratione, quod fuerit semper utile, que sanaverit morbum qui
research, which will be always useful, and will cure a disease which
 agnoscat tot que tam varias causas, que noceat corpori
acknowledges so many and so varied causes, and hurts the body
 tot que tam diversis modis.
in so many and such different ways.

818. Porro menses haud raro vel profluunt nimia
Moreover the menses not unfrequently either flow forth in too great
 copia vel redeunt nimis frequenter: que alterum (sc. vitium) sæpe
quantity or return too frequently: and the one often
 jungitur cum altero vitio; nimirum quia utrumque agnoscit
is joined with the other disorder; doubtless because both acknowledges
 fere similes causas.
nearly similar causes.

819. Frequentissimæ causæ talis vitii sunt nimia abundantia
The most frequent causes of such a disease are too great abundance
 sanguinis, que auctus impetus præsertim directus versus
of blood, and increased impetus (of it) especially directed towards
 uterum, vel stimulantibus admotis huic que vicinis partibus,
the uterus, or stimulants applied to it and the neighbouring parts,
 vel spasmu, seu aliqua contractione inductis aliis et remotis
or by spasm, or by some contraction brought on other and remote
 partibus; impeditus reditus sanguinis per venas ex utero,
parts: impeded return of blood by the veins from the uterus,
 propter varias obstructions; laxitas et debilitas uteri que
on account of various obstructions; laxity and debility of the uterus and
 arteriarum ejus a crebra graviditate aut frequente abortu; vel
of the arteries of it from frequent pregnancy or frequent abortion; or
 demum varias vitia uteri, ulcus, erosio, carcinoma.
in fine various diseases of the uterus, ulcer, erosion, cancer.

820. Igitur ratio erit in aprico, cur multiplex vitium
Therefore the reason will be evident, why a complicated disease
 aliquando postulet varia, et quæ videantur contraria medicamenta,
sometimes should require different, and what may seem opposite medicines,
 veluti detractionem sanguinis, tenuem diætam, laxantia, roborantia,
as detraction of blood, thin (low) diet, relaxing, strengthening,

electricæ, exercitatio, bulneum, fomenta, opium, &c. neque mirum erit omnia, etiam laudatissima remedia, spem medici sæpe fallere; neque sane credibile, remedium quodvis, vel casu vel ratione unquam repertum iri, quod semper utile fuerit, morbumque sanaverit, qui tot tamque varias agnoscat causas, corporique tot tamque diversis modis noceat.

818. Porro, menses haud raro vel nimia copia profluunt, vel nimis frequenter redeunt; alterumque cum altero vitio sæpe jungitur; nimirum, quia utrumque similes fere causas agnoscit.

819. Causæ talis vitii frequentissimæ sunt,

nimia sanguinis abundantia, auctusque impetus, præsertim uterum versus directus, vel stimulantibus huic partibusque vicinis admotis, vel spasmu seu contractione aliqua aliis et remotis partibus inductis (475, 476); impeditus sanguinis ex utero per venas reditus, propter varias obstructions; laxitas et debilitas uteri ejusque arteriarum a crebra graviditate aut frequente abortu; vel demum varia uteri vitia, ulcus erosio, carcinoma.

820. Ratio igitur in aprico erit, cur multiplex vitium, varia, et quæ videantur contraria, medicamenta aliquando postulet; veluti sanguinis detractionem, tenuem diætam, laxantia,

refrigerantia, (sc. medicamenta,) anodyna, &c.
 refrigerating, (medicines,) anodynes, &c.

821. Tale profuvium exhaurit corpus, laxat solidas partes,
 Such a profuvium exhausts the body, relaxes the solid parts,
 attenuat fluidas (sc. partes) debilitat uterum, inducit fluorum album,
 alternates the fluids weakens the uterus, brings on fluor albus,
 reddit mulieres vel steriles vel proclives ad abortum et demum impedit
 renders women either barren or subject to abortion and at length impedes
 omnes functiones, labefactat universam valetudinem, raro subito lethale,
 all the functions, undermines the whole health, seldom suddenly fatal,
 vero aliquando origo et causa morborum fere insanabilium.
 but sometimes the origin and cause of diseases almost incurable.

822. Aliud vitium, familiare et molestissimum muliebri sexui,
 Another disease, common and very troublesome to the female sex,
 quod vocatur Fluor Albus (Leucorrhœa), videtur quodammodo affine
 which is called Fluor Albus (whites), seems in some degree akin
 huic: scilicet fluxus albidi humoris e vaginâ.
 to this: namely a flow of whitish fluid from the vagina.

823. Hoc vitium sæpe comitatur profuvium mensium, que tum
 This disorder often accompanies a flux of the menses, and then
 fere præcedit et consequitur eos; nimirum, quum arteriæ
 commonly precedes and follows them; that is, when the arteries
 que foramina hiantia in uterum, nondum ita dilatantur, ut
 and foramina opening into the uterus, are not yet so dilated, that
 possint transmittere crassum et rubrum sanguinem; tenuior pars
 they can transmit the thick and red blood; the thinner part
 sola ejus transit, et nonnihil spissata per remoram, que
 alone of it passes, and somewhat thickened during its delay, and
 fortasse aliter mutata, et mixta cum muco, elabitur e
 perhaps otherwise changed, and mixed with mucus, escapes from
 vaginâ; que, pari ratione, postquam eadem vasa et
 the vagina; and, for a like reason, after that the same vessels and
 foramina, aliquantum constricta, cohibent cruorem, fluxus
 foramina, somewhat constricted, restrain the cruor (the red part), the flow
 tenuis et albidi humoris adhuc superest paulisper. Vero
 of the thin and whitish humour still remains for a little. But
 malum ingravescens, fit constans, que occupat totum
 the disorder increasing, becomes constant, and occupies the whole
 intervallum mensium.
 interval of the menses.

824. Hoc malum, non secus ac profuvium mensium, debilitat
 This disorder, in like manner as the flux of the menses, weakens

roborantia, refrigerantia, anodyna, &c.

821. Tale profuvium corpus exhaurit, solidas partes laxat, fluidas attenuat uterum debilitat, fluxum album inducit, mulieres vel steriles reddit, vel ad abortum proclives, et demum omnes functiones, impedit, universam valetudinem labefactat, raro subito lethale, aliquando vero insanabilem fere morborum origo et causa.

822. Huic quodammodo affine videtur alind vitium, sexui muliebri familiare et molestissimum, quod Fluor Albus vocatur: fluxus scilicet humoris albidi e vaginâ.

823. Mensium profuvium hoc vitium sæpe

comitatur, eosque tum fere præcedit et consequitur; nimirum quum arteriæ, foraminaque in uterum hiantia, nondum ita dilatantur, ut crassum et rubrum sanguinem transmittere possint; pars ejus tenuior sola transit, et spissata nonnihil per remoram aliterque fortasse mutata, et cum muco mixta e vagina elabitur; parique ratione, postquam eadem vasa et foramina aliquantum constricta cruorem cohibent, tenuis adhuc et albidi humoris fluxus paulisper superest. Ingravescens vero malum constans fit, totumque mensium intervallum occupat.

824. Hoc malum non secus ac mensium pro-

uterum, exhaurit corpus, sæpe facit mulierem sterilem, et
the uterus, exhausts the body, often renders a woman barren, and
 labefactat universam valetudinem. Frequentissime ducit originem
undermines the whole health. Very frequently it derives its origin
 a profluvio mensium debilitante uterum, laxante totum
from a flux of the menses weakening the uterus, relaxing the whole
 corpus, attenuante sanguinem; oritur ex fere iisdem causis, que
body, attenuating the blood; arises from nearly the same causes, and
 sæpe reprimitur similibus remediis. Tamen, oritur haud raro
often is repressed by similar remedies. However, it arises not unfrequently
 a mensibus suppressis vel deficientibus. Mulleres quæ laborant
from the menses being suppressed or deficient. Women who suffer
 tali morbo, haud fiunt gravidæ ita facile ac sanæ (sc. mulieres),
from such a disease, do not become pregnant so easily as healthy ones,
 vel, si conceperint, crudus fœtus sæpe effluit brevi.
or, if they should conceive, a crude fœtus often escapes in a short time.
 Quod si talis mulier prospere gesserit uterum, morbus
But if such a woman should prosperously carry the uterus, the disease
 quo prius laboraverat fere reprimitur, fortasse
from which she had previously suffered generally is repressed, perhaps
 nunquam rediturus: præsertim si fuerit idonea ratio vitæ
never to return: especially if there should be a proper kind of life
 post partum.
after parturition.

825. Demum, est vitium, si menses, quamvis neque suppressi
In fine, it is a disorder, if the menses, although neither suppressed
 neque profluentes nimis copiose, tamen erumpunt solitis
nor flowing too copiously, notwithstanding break forth at the usual
 et naturalibus intervallis ægre, et cum dolore uteri,
and natural intervals with difficulty, and with pain of the uterus,
 lumborum, capitis, que gravi perturbatione totiûs corporis. Multæ
loins, head, and great perturbation of the whole system. Many
 fœminæ quæ expertæ erant nulla vel admodum levia incommoda
women who had experienced none or very slight inconveniences
 hujusmodi primis puberibus annis, adhuc florente ætate, que
of this sort in the first ripe years, yet in flourishing age, and
 ipsæ vegetæ, et alioquin sanæ, fere ægrotant hoc modo,
themselves fresh, and otherwise healthy, mostly get ill in this manner,
 quoties menses debent fluere. Incommodum oriundum vel
as often as the menses ought to flow. An inconvenience arising either
 a crescente firmitate solidarum partium, vel a nimiâ
from the increasing firmness of the solid parts, or from excessive

fluvium uterum debilitat, corpus exhaurit, mulierem sæpe sterilem facit, et universam valetudinem labefactat. Frequentissime a profluvio mensium, uterum debilitante, totum corpus laxante, sanguinem attenuante, originem ducit; ex iisdem fere causis oritur (819), similibusque sæpe remediis reprimitur. Haud raro tamen oritur a suppressis vel deficientibus mensibus. Mulleres, quæ tali morbo laborant, haud ita facile ac sanæ gravidæ fiunt, vel, si conceperint, crudus fœtus sæpe brevi effluit. Quod si prospere uterum gesserit talis mulier, morbus quo prius laboraverat fere reprimitur,

fortasse nunquam rediturus; præsertim si post partum idonea vitæ ratio fuerit.

825. Vitium demum est, si menses, quamvis neque suppressi neque nimis copiose profluentes, ægre tamen et cum dolore uteri, lumborum, capitis, gravique totiûs corporis perturbatione, solitis et naturalibus intervallis erumpunt. Multæ fœminæ, quæ nulla vel levia admodum hujusmodi, primis puberibus annis, expertæ erant incommoda, florente adhuc ætate, ipsæque vegetæ, et alioquin sanæ, hoc modo fere ægrotant, quoties menses debent fluere. Incommodum vel a crescente solidarum

contractione arteriarum et foraminum uteri, sublevatur optime
contraction of the arteries and foramina of the uterus, is relieved best
 laxantibus remediis et anodynis: neque confugiendum est (sc. nobis)
by relaxing remedies and anodynes: nor must we have recourse
 temere ad calefacientia, stimulantia, aut cardiaca remedia, qualia
rashly to heating, stimulating, or cordial remedies, such as
 mulierculæ amant præcipere; quamvis, profecto, remedia
the little women (doctresses) like to prescribe; although, truly, remedies
 istiusmodi, possint nimirum, motu sanguinis incitato,
of this sort, may no doubt, by the motion of the blood being quickened,
 superare illum renixum ortum a firmitate uteri que con-
overcome that resistance arising from the firmness of the uterus and con-
 tractione arteriarum ejûs, que promovere menses.
traction of the arteries of it, and promote the menses.

826. Est quoque vitium, si mulier est sterilis ætate quâ
It is also a disease, if a woman is barren at an age in which
 debet esse fœcunda. Hoc aliquando fit propter pravam
she ought to be fruitful. This sometimes happens on account of a depraved
 fabricam uteri, aut tubarum, aut ovariorum, qualis
structure of the uterus, or of the tubes, or of the ovaries, such as
 detecta fuerit inspectione cadaverum, in nonnullis,
has been detected (discovered) by the inspection of dead bodies, in some,
 quamvis admodum raris exemplis; neque sivisset masculinum semen
although very rare examples; and had not permitted the male semen
 penetrare ad ovaria, vel muliebri, quicquid fuerit, necessarium
to penetrate to the ovaria, or the female, whatever it might be, necessary
 ad generationem misceri cum eo, vel habere justum comæatum
for generation to be mixed with it, or to have a proper communication
 cum utero; puta obstructum aut scirrhosum uterum, vel
with the uterus; as for instance an obstructed or scirrhus uterus, or
 tubas conclusas, vel ovaria facta hydropica, &c.
the tubes closed up, or the ovaries become dropsical, &c.

827. Vero mulieres sæpius fiunt steriles a vitiis mensium,
But women more often become barren from diseases of the menses,
 suppressione, profluvio, fluore albo; scilicet quæ vel
(as) suppression, immoderate flow, fluor albus; as being things which either
 non sinunt eas concipere, vel ejiciunt fœtum adhuc fluidum,
do not permit them to conceive, or eject the fœtus as yet fluid,
 vel impediunt justum et naturale nutrimentum ejûs per placentam,
or prevent the due and natural nourishment of it by the placenta,
 et vasa umbilici.
and the vessels of the umbilicus.

partium firmitate, vel a nimia arteriarum et foraminum uteri contractione oriundum, remediis laxantibus et anodynis optime sublevatur: neque temere ad calefacientia, stimulantia, aut cardiaca remedia, qualia mulierculæ amant præcipere, confugiendum est; quamvis istiusmodi profecto remedia, incitato nimirum sanguinis motu, renixum illum a firmitate uteri ejusque arteriarum contractione ortum superare, mensesque promovere, possint.

826. Vitium quoque est, si mulier, ætate qua debet esse fœcunda, sterilis est. Hoc aliquando fit propter pravam uteri, aut tubarum, aut ovariorum, fabricam, qualis, in nonnullis quam-

vis admodum raris exemplis, inspectione cadaverum detecta fuerit; neque sivisset semen masculinum ad ovaria penetrare, vel muliebri quicquid fuerit ad generationem necessarium cum eo misceri, vel justum cum utero comæatum habere; puta, uterum obstructum, aut scirrhosum, vel tubas conclusas, vel ovaria hydropica facta, &c.

827. Sæpius vero a vitiis mensium, suppressione, profluvio, fluore albo, mulieres steriles fiunt; scilicet quæ eas vel non sinunt concipere, vel fœtum adhuc fluidum et naturale nutrimentum ejus per placentam et vasa umbilici impediunt.

828. Humores ipsi, quotquot fœminæ debent conferre ad
The fluids themselves, whatever women ought to contribute to
 generationem, possunt corrumpi, non secus ac virile semen, et
generation, may be corrupted, like as the male semen, and
 fieri parum fœcundi. Venus quoque, nimis culta, solet
become no way fruitful. Venus also, too much indulged, is accustomed
 facere fœminas steriles.
to render women barren.

829. Fœcunditas pendet multum a primâ et congenitâ consti-
Fecundity depends much upon the original and congenital consti-
 tutione corporis; quippe quæ observetur mira, et fere
tution of the body; as being what is observed wonderful, and almost
 constans, in quibusdam familiis, dum quædam antiquæ stirpes
constant (uniform), in some families, whilst some ancient races
 tulerint unicum filium per plures generationes.
have borne a single offspring through several generations.

830. Ignavia et luxus vel paulatim reddunt omnes homines steriles,
Idleness and luxury either gradually render all persons sterile,
 vel producunt debilem atque morbosam prolem, qualis superaverit
or produce a weak and diseased offspring, such as will pass over
 infantiam ægre, et raro attigerit virilem ætatem. Sic
infancy with difficulty, and seldom will reach virile age. Thus
 almost omnes rustici fœcundi sanæ et vegetæ prolis;
almost all country persons (are) fruitful of sound and vigorous offspring;
 vero urbani sæpe vel steriles, vel parentes miserandæ
but townspeople often either (are) sterile, or the parents of a miserable
 progeniei. Rus solum, quidem, ferax hominum, quos
progeny. The country alone, indeed, (is) fruitful of men, whom
 educat non sibi soli, sed urbibus quoque, quæ aliter
she brings up not for herself alone, but for the cities also, which otherwise
 brevi forent inanes: enim exempla, familiarum artificum quæ
quickly would be empty: for examples, of the families of artificers which
 floruerunt per quatuor generationes rara. Quin et, nobilissimæ
have flourished for four generations (are) rare. Moreover, the most noble
 et antiquissimæ gentes optimatum et principum minuuntur indies, et
and ancient races of grandes and princes are diminished daily, and
 pereunt: ita ut brevi nulla nobilitas superesset, nisi
are perishing: so that in a short time no nobility would remain, unless
 nuptiæ fierent cum plebe, et novi homines eveci ad
marriages were made with the common people, and commoners raised to
 summos honores, adscriberentur antiquis familiis; quamvis sit
the highest dignities, were enrolled with the old families; although it is

828. Humores ipsi, quotquot fœminæ ad generationem conferre debent, corrumpi possunt, non secus ac semen virile (765), et parum fœcundi fieri. Venus quoque nimis culta fœminas solet steriles facere.

829. Fœcunditas pendet multum a primâ et congenita corporis constitutione; quippe quæ mira et fere constans in quibusdam familiis observetur, dum stirpes quædam antiquæ unicum per plures generationes filium tulerint.

830. Ignavia et luxus omnes homines vel steriles paulatim reddunt, vel prolem producunt debilem atque morbosam, qualis infantiam

ægre superaverit et raro virilem ætatem attigerit. Sic rustici fere omnes fœcundi sanæ et vegetæ prolis; urbani vero, sæpe vel steriles, vel miserandæ progeniei parentes. Solum quidem rus ferax hominum, quos non sibi soli educat, sed urbibus quoque, quæ aliter brevi inanes forent: rara enim exempla familiarum artificum quæ per quatuor generationes floruerunt. Quin et nobilissimæ et antiquissimæ gentes optimatum et principum indies minuuntur, et pereunt; ita ut nulla nobilitas superesset, nisi cum plebe nuptiæ fierent, et novi homines ad summos honores eveci, anti-

non dubium, patrem longe alium ac (eum quem) nuptiæ
not doubtful, that a father far different than (him whom) nuptials
 demonstrarent sæpe multum emendasse nobilem stirpem, onustam
would point out often has greatly amended a noble race, loaded
 vitis et morbis animi et corporis viginti atavorum,
with the vices and diseases of mind and body of twenty great grandfathers
 et aliquando renovasse perituram.
(generations), and sometimes has revived it (when) about to perish.

831. Quamvis constitutio utriusque parentis, corrupta luxu et
Although the constitution of either parent, corrupted by luxury and
 ignaviâ, possit conferre ad hanc degenerationem aut sterilitatem;
idleness, may contribute to this degeneracy or sterility;
 tamen satis constat maximum vitium et causam
nevertheless it is sufficiently established that the greatest fault and cause
 sterilitatis sæpe esse in fœminis, scilicet quæ solvuntur,
of sterility often is (exists) in the women, as being persons who are relaxed,
 et multum debilitantur, et fiunt nimis plenæ sanguine tali
and are much debilitated, and become too full of blood by such
 genere vitæ; et ideo habent menses copiosiores quam
a kind of life; and therefore have the menses more copious than
 rusticæ et robustæ fœminæ solent habere, et laborant sæpe
rustic and robust women are accustomed to have, and suffer often
 fluore albo, sæpe profluvio, sæpe suppressione mensium.
from fluor albus, often from a flux, often suppression of the menses.

832. Expulsio crudi fœtus vocatur abortus; sane frequentis-
The expulsion of the crude fœtus is called abortion; indeed a very fre-
 simum vitium; accidens sæpius tertio mense; repetitum
quent disorder: happening more often in the third month; repeated
 aliquoties facile transiens in consuetudinem, difficillimè rum-
several times easily passing into a habit, very difficultly to be
 pendam: fere eo periculosius quo propius fuerit ventum (im-
broken: commonly the more dangerous the nearer it shall be come (it shall
 pers.) ad justum tempus.
approach) to the proper (full) time.

833. Agnoscit fere easdem causas ac profluviu mensium,
It acknowledges nearly the same causes as a profluviu of the menses,
 cuius sæpe est pars et effectus; plerumque, si oritur a
of which often it is a part and effect; generally, if it arises from
 interno vitio, accidens tempore mensium, et ducens
an internal disease, happening at the time of the menses, and deriving
 originem, ut videtur, a solito molimine naturæ ad produendos
its origin, as it seems, from the usual endeavour of nature to produce

quis familiis adscriberentur; quamvis non dubium sit, longe alium ac nuptiæ demonstrant patrem, nobilem stirpem, vitis et morbis animi et corporis viginti atavorum, onustam, multum sæpe emendasse, et aliquando renovasse perituram.

831. Quamvis utriusque parentis constitutio, luxu et ignavia corrupta, ad hanc degenerationem aut sterilitatem conferre possit; tamen satis constat, maximum sæpe vitium et causam sterilitatis in fœminis esse, scilicet, quæ tali vitæ genere solvuntur, et debilitantur multum, et sanguine nimis plenæ fiunt; et menses ideo copiosiores habent, quam rusticæ et robuste

mulieres habere solent, et sæpe fluore albo, sæpe profluvio, sæpe suppressione mensium laborant.

832. Abortus vocatur crudi fœtus expulsio; vitium sane frequentissimum: sæpius tertio mense accidens; aliquoties repetitum facile in consuetudinem transiens, difficillime rumpendam: eo fere periculosius quo propius ad justum tempus ventum fuerit.

833. Easdem fere agnoscit causas ac mensium profluviu, cuius sæpe pars est et effectus; plerumque, si a vitio interno oritur, tempore mensium accidens, et, ut videtur, a solito naturæ molimine ad eos producendos originem ducens. Quicquid præterea commeatum inter

eos (sc. menses). Præterea, quicquid rumpit comæatum inter matrem et fœtum, vel stimulat, debilitat, vel ullo modo lædit uterum, vel convellit nervosum genus, vel calefact corpus, potest inducere abortum: scilicet, auctus impetus sanguinis, præsertim in vasis uteri; vehemens febris, quæ sane raro accidit gravidis, neque fere sine periculo abortus, vel discrimine vitæ ipsius; valida exercitatio, defatigatio, ingens nixus, externa vis illata corpori, præsertim ventri, immodica venus, irritatio vicinarum partium, veluti a fortibus medicamentis; graves affectus animi, sive excitantes sive deprimentes, ingens debilitas, vel generalis, vel tantum uteri, vel demum, syncope, veluti ab enormibus exinanitionibus; et denique, nonnulla vitia fœtus ipsius, monstrosi mole vel figurâ, que minus idoneus situs ejus in utero, vel morbi qui faciunt circuitum sanguinis per placentam languere, vel denique mors, quæ sistit omnem motum humorum per placentam, que rumpit commercium cum matre.

834. Igitur, ratio præcavendi ab instante malo, haud erit obscura, detractio sanguinis, decumbendo, quiete animi et corporis, anodynus remediis (hoc superevacuum est), frigore admoto variis modis, que aliis remediis adhibitis prout

matrem et fœtum (789, 790) rumpit, vel uterum stimulat, debilitat, vel ullo modo lædit, vel genus nervosum convellit, vel corpus calefact, abortum inducere potest: auctus scilicet sanguinis impetus, præsertim in uteri vasis; febris vehemens, quæ sane raro gravidis accidit, neque fere sine abortus periculo, vel vitæ ipsius discrimine; exercitatio valida, defatigatio, nixus ingens, vis externa corpori, præsertim ventri, illata, venus immodica, irritatio partium vicinarum, veluti a fortibus medicamentis; graves animi affectus, sive excitantes sive deprimentes, ingens debilitas, vel generalis, vel

uteri tantum, vel syncope demum, veluti ab enormibus exinanitionibus; et vitia denique nonnulla fœtus ipsius, mole vel figura monstrosi, ejusque minus idoneus in utero situs, vel morbi qui circuitum sanguinis per placentam languere faciunt, vel mors denique, quæ omnem humorum per placentam motum sistit, commerciumque cum matre rumpit.

834. Ratio igitur haud obscura erit ab instante malo præcavendi, sanguinis detractio, decumbendo, quiete animi et corporis, anodynus remediis, frigore variis modis admoto, aliisque remediis, prout res postulaverint, adhibitis.

res postulaverint. Neque aut mulier semper facit abortum,
circumstances shall require. Nor does either the woman always abort,
 aut infans perit, quamvis nonnihil aquæ vel sanguinis etiam
 or the infant perish, although some water or blood even
 effluerit, nimirum quia placenta, si fuerit aliquantum
 should flow out, truly because the placenta, though it should be somewhat
 separatæ, potest rursus concrescere cum utero, et liquor
 separated, may again grow together (reunite) with the uterus, and the liquor
 amnii iterum suppleri.
 amnii again be supplied.

835. Vero quum sit jam ventum ad justum tempus, partus
 But when it is already come to the full time, parturition
 sæpe fit difficilis et laboriosus, aut periculosus, propter
 often becomes difficult and laborious, or dangerous, on account of
 plurimas causas, perpendere quas speciatim, et excogitare idonea
 many causes, to consider which particularly, and to think of the proper
 auxilia singularum, est obstetricis. Erit sat hic
 aids for each, is for (belongs) to the obstetrician. It will be sufficient here
 memorasse, naturalem et felicissimum partum, penitus carere
 to state, that natural and the most prosperous parturition, is entirely free from
 neque dolore neque quodam periculo: vero periculum et dolorem
 neither pain nor from some danger: but that the danger and pain
 pariter esse fere majora junioribus puellis, que annosis fœminis,
 alike are commonly greater in young girls, than in oldish women,
 primiparis, nimirum quia illis (pro nom.) est (pro habent) nondum
 on first deliveries, truly because the former have not as yet
 justa magnitudo, aut conformatio, aut robur partium que patiuntur
 the due size, or conformation, or strength of the parts which suffer
 in puerperio; et contra, nimia rigiditas omnium reddit
 in childbirth; and again on the contrary, too much rigidity of all renders
 transitum fœtûs difficiliorum his; vero maximum
 the transit of the fœtus more difficult in the latter; but that the greatest
 periculum instare, si fabrica vel uteri vel ossium
 danger threatens, if the structure either of the uterus or of the bones
 pelvis fuerit prava, ita ut hæc (sc. ossa) nequeant transmittere
 of the pelvis should be bad, so that the latter cannot transmit
 partum (met. fœtum), nec ille (uterus) edere justam vim,
 the fœtus, nor the former put forth (exert) the due force,
 neque tolerare eam sine periculo lacerationis. Quoque delicatæ,
 nor bear it without the danger of laceration. Also delicate,
 debiles, valde mobiles mulieres, impatientes doloris, exhaustæ morbis,
 weak, very irritable women, impatient of pain, exhausted by diseases,

Neque semper aut mulier abortum facit, aut infans perit, quamvis aquæ nonnihil, vel sanguinis etiam, effluerit, nimirum quia placenta, si separatæ aliquantum fuerit, cum utero rursus concrescere potest, et liquor amnii iterum suppleri.

835. Quum vero jam ad justum tempus ventum sit, partus sæpe difficilis et laboriosus, aut periculosus, fit, propter plurimas causas, quas speciatim perpendere, et idonea singularum auxilia excogitare, obstetricis est. Sat erit hic memorasse, partum naturalem et felicissimum, neque dolore neque periculo quodam penitus

carere: periculum vero et dolorem pariter fere majora esse, puellis junioribus, feminisque annosis primiparis, nimirum, quia illis, nondum justa est magnitudo, aut conformatio, aut robur, partium quæ in puerperio patiuntur; et his contra nimia omnium rigiditas transitum fœtus difficiliorum reddit; maximum vero periculum instare, si prava vel uteri vel ossium pelvis fabrica fuerit, ita ut hæc partum transmittere nequeant, nec ille justam vim edere, neque eam sine lacerationis periculo tolerare. Mulieres quoque delicatæ, debiles, valde mobiles, doloris impatientes, morbis exhaustæ,

versantur majore periculo quam sanæ et validæ (sc. mulieres). Porro, are in greater danger than healthy and strong women. Moreover, varia vitia fœtus, placentæ, que funis, sæpe reddunt various disorders of the fœtus, of the placenta, and of the cord, often render partum difficilem, aliquando prorsus impediunt: veluti deformitas the delivery difficult, sometimes wholly impede it: as deformity fœtus, ingens caput, monstruosus situs; placenta concrescens of the fœtus, a large head, preternatural position; the placenta growing insolitæ parti uteri, nimis longa funis, contorta præterto an unusual part of the uterus, too long a cord, twisted unnaturalam circa fœtum, &c. Plurima vitiorum hujusmodi possunt naturally about the fœtus, &c. Very many of the disorders of this sort may concurrere simul, que igitur efficere varias et inexpectatas occur together, and therefore cause various and unexpected difficultates pariendi. difficulties of child-bearing.

836. Denique, lochia sæpe, post partum, aut fluunt nimiam Lastly, the lochia often, after delivery, either flow in too great copiam, aut subito supprimuntur: ratio et damnum utriusque quantity, or suddenly are suppressed: the cause and injury of either vitii intelligentur facile ex dictis, præsertim si disease will be understood easily from (what has been) said, especially if attendamus animum ad hoc, nimirum, corpus, exhaustum et debilitatum doloribus puerperii, et jacturâ sanguinis, fieri valde mobile tated by the pains of childbirth, and by loss of blood, becomes very mobile et irritabile; que uterum ipsum, delicatissimum organum, multum and irritable; and that the uterus itself, a most delicate organ, (when) much irritated, is rendered disposed to inflammation: by which it happens ut levissimæ causæ sæpe male afficiant puerperas, que that the slightest causes often badly affect puerperal women, and accendant vehementem febrem, aut inflammationem uteri, serpturam excite intense fever, or inflammation of the uterus, that will creep aliquando ad vicina viscera, et desituram facile in sometimes to the neighbouring viscera, and that will terminate easily in gangrænam. Ratio maxime frequentium vitiorum secernendi lactis, gangrene. An account of the most frequent disorders of secreting milk, post partum, jam est reddita. after delivery, has already been given.

837. Est observandum, quo plus negotium pariendi It is to be observed, the more the affair of child-bearing (parturition)

quam sanæ et validæ, majore periculo versantur. Porro, varia fœtus, placentæ, funisque vitia, partum sæpe difficilem reddunt, aliquando prorsus impediunt; veluti deformitas fœtus, ingens caput, situs monstruosus; placenta insolitæ parti uteri concrescens, funis nimis longa, præter naturam circa fœtum contorta, &c. Hujusmodi vitiorum plurima simul concurrere possunt, variasque igitur et inexpectatas pariendi difficultates efficere.

836. Denique, lochia post partum sæpe aut nimia copia fluunt, aut subito supprimuntur: utriusque vitii ratio et damnum facile intelligentur, ex dictis (811), præsertim si animum

ad hoc attendamus, nimirum, corpus, doloribus puerperii et sanguinis jactura exhaustum et debilitatum, valde mobile et irritabile fieri; uterumque ipsam, delicatissimum organum, multum irritatum, ad inflammationem proclivem reddi: quo fit ut levissimæ causæ puerperas sæpe male afficiant, febremque vehementem, aut inflammationem uteri ad vicina viscera aliquando serpturam, et in gangrænam facile desituram, accendant. Vitiorum lactis post partum secernendi, maxime frequentium, ratio jam (803) reddita est.

837. Observandum est, quo plus pariendi et lactandi negotium Naturæ committitur, eo fere

et lactandi committitur Naturæ, eo felicius utrumque
and of suckling is intrusted to Nature, that the more prosperously do both
 fere succedere; quod peritissimi medici qui susceperunt
generally succeed; which the most skilful physicians who have undertaken
 munus obstetricis nunc demum agnoscunt, et qui
the duty of the obstetrician now at length acknowledge, and (they) who
 soli norunt fere opem confidunt parum arti, plurimum
alone know (how) to render assistance trust little to art, a great deal
 Naturæ; nisi in raris exemplis jam recensitis.
to Nature; except in the rare examples already enumerated.

CAP. XXII.

CHAP. XXII.

De nutrimento, incremento, statu, imminutione,
 Of the nutrition, growth, full age (acme or perfection), decay,
 et morte corporis; que (de) morbis qui solent
and death of the body; and of the diseases which are accustomed
 comitari et affligere varias ætates.
to accompany and to afflict the various ages (periods of life).

833. En aliud arcanum Naturæ, vix minus mirabile
Behold another secret of Nature, scarcely less wonderful
 generatione ipsâ, neque eo melius intellectum quod perficitur
than generation itself, nor the better understood because it is performed
 magis aperte. Nimrum infans, parvus, debilis, impotens pariter
more openly. That the infant, small, weak, impotent alike
 animi ac corporis, crescit paulatim, et adipiscitur pulcherrimam et
in mind and body, grows by degrees, and acquires a very beautiful and
 perfectam formam, tandem factus compos omnium facultatum
perfect shape, at length rendered possessed of all the faculties
 animi que corporis.
of mind and of body.

839. Humanum corpus viget aliquamdiu perfectissimum formâ,
The human body flourishes for some time most perfect in shape,
 sanitate, viribus; vero annis labentibus, delabitur lenta ruina;
health, strength; but the years rolling on, it decays in a slow ruin;

utrumque felicius succedere; quod peritissimi qui obstetricis munus susceperunt medici nunc demum agnoscunt, et qui soli opem fere norunt, parum arti, plurimum Naturæ, confidunt; nisi in raris exemplis jam (835) recensitis.

CAP. XXII.—De Corporis Nutrimento, Incremento, Statu, Imminutione, et Morte; Morbisque qui varias Ætates comitari et affligere solent.

833. EN aliud Naturæ arcanum, ipsa genera-

tione vix minus mirabile, neque eo melius intellectum, quod magis aperte perficitur. Infans nimrum, parvus, debilis, animi pariter ac corporis impotens, paulatim crescit, et pulcherrimam et perfectam formam adipiscitur, omnium tandem animi corporisque facultatum compos factus (14).

839. Aliquamdiu corpus humanum viget, forma, sanitate, viribus perfectissimum; labentibus vero annis, lenta ruina delabitur (12);

Ille flos juventæ perit, et vis animi et vigor corporis.
that flower of youth perishes, also the strength of mind and vigour of body.

Invida ætas minuit quemque robustissimum immedicabili
Envious age (time) consumes every strongest person by incurable

morbo, qui cogit omnes mortales eodem. Et profecto
disease, which collects all mortals in the same place. And truly

senectus premitur tantis que tam continuis malis, ut mors
old age is pressed by so many and so continued evils, that death

ipsâ, si homines saperent, veniret omnibus, optata finis
itself, if men were wise, would come to all, wished for (as) the ter-

tot ærumnarum.
mination of so many miseries.

840. Philosophi et medici conati sunt reddere rationem
Philosophers and physicians have endeavoured to render an account

harum rerum, et explicare quomodo corpus accipiat suum nutrimentum,
of these things, and explain how the body receives its nourishment,

cur certo tempore crescat, cur tandem desinat crescere, et
why at a certain time it grows, why at length it ceases to grow, and

demum decrescat suo tempore. Quamvis subsit adhuc multum ob-
finally decreases at its proper time. Although there be as yet much of ob-

scuri et incerti (pro substantivis) hic, tamen oportet novisse quid
scure(ity) and of uncertain(ity) here, nevertheless it behoves to know what

fuerit propositum de gravissimo argumento, quid stabilitum,
has been advanced concerning this very weighty subject, what established,

quid fictum: præterea, plurimi morbi pendent ab ætate, scilicet,
what imagined: besides, many diseases depend upon the age, namely,

qui oriuntur a mutationibus quas corpus subit variis
those which arise from the changes which the body undergoes at the various

ætatibus; igitur, decet medicum intelligere naturam et
ages; therefore, it becomes the physician to understand the nature and

causas horum.
causes of them.

841. Constat, certissimis et simplicissimis experimentis,
It is established, by the most certain and simple experiments,

omnes partes corporis, solidas pariter ac fluidas, assidue dissipari
that all parts of the body, solid as well as fluid, constantly are dissipated

et deteri variis functionibus vivi hominis. Neque est
and worn down by the various functions of the living man. Nor is it

dubium alimenta quæ sumimus reparare hanc jacturam.
doubtful that the aliments which we take repair this loss.

Vero hæc primo confecta, et soluta, et concocta in ore
But these first chewed, and dissolved, and concocted in the mouth

flos ille juventæ perit, et vis animi, et vigor corporis. Robustissimum quemque invida ætas minuit, immedicabili morbo, qui omnes mortales eodem cogit. Et profecto, tantis tamque continuis malis senectus premitur, ut mors ipsâ, si homines saperent, omnibus veniret.

840. Philosophi et medici conati sunt rationem reddere harum rerum, et explicare quomodo corpus suum nutrimentum accipiat, cur certo tempore crescat, cur crescere tandem desinat, et demum suo tempore decrescat. Quamvis multum hic subsit obscuri et incerti adhuc,

tamen oportet novisse, quid de gravissimo argumento propositum fuerit, quid stabilitum, quid fictum: præterea, plurimi morbi ab ætate pendent, scilicet qui a mutationibus quas corpus variis ætatibus subit oriuntur; horum igitur naturam et causas medicum decet intelligere (22, 51).

841. Certissimis et simplicissimis experimentis constat, omnes corporis partes, solidas pariter ac fluidas, variis functionibus vivi hominis assidue dissipari et deteri. Neque dubium est alimenta quæ sumimus hanc jacturam reparare. Hæc vero primo in ore et ventriculo, et intes-

et ventriculo, et intestinis, postea forsitan amplius mutata in
and stomach, and intestines, afterwards perhaps further changed in
 pulmone, demum vertuntur in sanguinem, gluten cuius,
the lungs, at length are changed into blood, the gluten of which,
 (scilicet, fibrina, albumen, et gelatina,) ut videtur, est (pro affert)
(that is, the fibrine, albumen, and gelatine,) as it appears, brings
 nutrimento solidis partibus.
nourishment to the solid parts.

842. Humores corporis posse reparari tali subsidio,
That the fluids of the body may be replenished by such a supply,
 facile intelligitur: vero ratio quâ solidæ partes reficiantur
is easily understood: but the means by which the solid parts are recruited
 multo obscurior.
(is) much more obscure.

843. Sunt auctores, neque profecto parvi nominis, qui credunt
There are authors, nor indeed of small reputation, who believe
 particulas solidarum partium, vasorum, fibrarum, ossium, reticulatæ
that the particles of the solid parts, vessels, fibres, bones, cellular
 telæ, detritas variis muneribus vitæ, relinquere scrobes seu
tissue, worn out by the various functions of life, leave behind furrows or
 fossulas; que has fossulas, puta, in intima superficie
trenches; and that these trenches, for instance, in the inmost surface
 cuiusdam vasis vehentis sanguinem, impleri glutinoso humore
of any vessel carrying blood, are filled with the glutinous fluid
 qui præterfluit, attrahere crassam partem ejusdem humoris
which flows through it, that they attract the thick part of the same fluid
 sibi, demittere tenuem, perpetuo motu et compressione
to themselves, send off the thin, the constant motion and compression
 quo omnes partes agitantur juvante et exprimente; si
by which all the parts are agitated assisting and expressing; if
 fossula esset non penitus impleta, minorem scrobem quæ
the fossa were not completely filled up, that the smaller indentation which
 tunc superesset, pari ratione, attrahere sibi et detinere
then would remain, for a similar reason, attracted to itself and detained
 plus glutinis; vero si plus glutinis justo esset receptum hoc
more gluten; but if more gluten than proper were admitted in this
 modo, ita ut vel minimum frustum excresceret et emineret
manner, so that even the smallest fragment grew out and stood out
 in medium vas, hoc brevi deteri rivo
into the middle (of the) vessel, that this was quickly worn down by the current
 præterfluente, donec interna superficies esset facta levis et
flowing by, until the internal surface were rendered smooth and

tinis, confecta, et soluta, et concocta (615, 616), postea forsitan in pulmone amplius mutata (566), in sanguinem demum vertuntur (494, 505), cuius gluten (*fibrina*, scilicet, *albumen*, et *gelatina*), ut videtur, solidis partibus nutrimento est.

842. Facile intelligitur humores corporis tali subsidio reparari posse: multo vero obscurior ratio qua solidæ partes reficiantur.

843. Sunt qui credunt, neque profecto parvi nominis auctores, particulas solidarum partium, vasorum, fibrarum, ossium, telæ reticulatæ, variis vitæ muneribus detritas, scrobes seu fossulas relinquere; hasque fossulas, puta

in intima superficie vasis cuiusdam sanguinem vehentis, humore glutinoso qui præterfluit impleri, crassam ejusdem humoris partem attrahere sibi, tenuem demittere, juvante et exprimente perpetuo quo omnes partes agitantur motu et compressione; si fossula non penitus impleta esset, minorem quæ tunc superesset scrobem, pari ratione, plus glutinis sibi attrahere et detinere; si vero plus justo hoc modo glutinis receptum esset, ita ut frustum vel minimum excresceret et emineret in medium vas, hoc brevi præterfluente rivo deteri, donec superficies interna ut antea levis et æqualis

æqualis ut antea. Porro, hi auctores crediderunt externas
equal as before. Moreover, these authors believed that the external
 partes vasorum, et reticulatam telam, et fibras nervorum et
parts of the vessels, and cellular tissue, and fibres of the nerves and
 musculorum, et demum ossa, nutriri fere simili
muscles, and in fine the bones, were nourished almost in a similar
 modo, vel per minuta vasa vehentia et apponentia gluten et
manner, either by minute vessels carrying and placing gluten and
 terram, vel per glutinosum humorem exhalatum, qui irrorat
earth, or by a glutinous fluid (being) exhaled, which bedews
 omnia cava corporis: que tandem, tenuiore parte nutrientis
all the cavities of the body: and at length, the thinner part of the nutritious
 humoris expressâ, et exhalatâ, et resumptâ, solidam
fluid being expressed, and exhaled, and taken up, that the solid
 materiam demum relinquit tantam et talem qualis detrita fuerat.
matter at last was left so much and such as it had been worn down.

844. Crediderunt se conspexisse exemplum et demonstrationem
They believed that they had seen an example and demonstration
 nutrimenti hujusmodi in concretionem vulneris, veluti parvæ
of a nutriment of this kind in a growing together of a wound, as of a small
 arteriæ, quæ coalescit suâ sponte, et fere hac ratione,
artery, which coalesces of its own accord, and commonly in this way,
 quod brevi obturatur glutine effuso, et concrecente
that it is quickly plugged up by gluten being effused, and growing together
 in massam, quæ compescat fluxum sanguinis, que resarciat arteriam
into a mass, which restrains the flow of blood, and repairs the artery
 ipsam, ita ut post paucas horas, humores fluant iterum per
itself, so that after a few hours, the fluids flow again through
 eam solito more, nequidem guttulâ elabente; quicquid
it in the usual manner, not even a small drop escaping; whatever
 nimirum glutinosæ massæ emineret in arteriam, rivus
indeed of the glutinous mass projected into the artery, the current
 humorum rapuit secum; quod superesset, motus com-
of the fluids hurried off along with it; what remained, the motion com-
 pressit in firmam substantiam, que resorbentia vasa hausiverunt
pressed into a firm substance, and the absorbing vessels drank up
 expressum humorem. Vero glutinosa massa quæ formatur circa
the expressed fluid. But the glutinous mass which is formed about
 sauciam arteriam haud abraditur ita subito; quamvis hæc
the wounded artery is not rubbed off so suddenly; although this
 quoque paulatim fere minuitur et evanescit, præsertim si
also by degrees generally is diminished and disappears, especially if

facta esset. Crediderunt porro hi auctores partes vasorum externas, et telam reticulatam, et fibras nervorum et musculorum, et ossa demum simili fere modo nutriri, vel per vasa minuta gluten et terram vehentia et apponentia, vel per exhalatum humorem glutinosum (437) qui omnia cava corporis irrorat: tandemque, expressa, et exhalata, et resumpta, tenuiore parte humoris nutrientis, solidam demum relinquit materiam, tantam et talem, qualis detrita fuerat.

844. Hujusmodi nutrimenti exemplum et demonstrationem crediderunt se conspexisse, in concretionem vulneris, veluti parvæ arteriæ,

quæ sua sponte coalescit, et fere hac ratione, quod brevi obturatur glutine effuso et concrecente in massam quæ sanguinis fluxum compescat, arteriamque ipsam resarciat, ita ut post paucas horas, humores iterum per eam more solito fluant, ne guttula quidem elabente; quicquid nimirum massæ glutinosæ in arteriam emineret, humorum rivus secum rapuit; quod superesset motus compressit in firmam substantiam, humoremque expressum vasa resorbentia hausiverunt. Massa vero glutinosa quæ circa sauciam arteriam formatur, haud ita subito abraditur; quamvis hæc quoque paulatim fere minuitur et evanescit, præsertim si vulnus leve

vulnus fuisset leve: aliquando, tamen, imprimis a graviore
the wound had been slight: sometimes, however, especially from a more severe
 vulnere, fabrica vasorum quæ aliarum partium, quæ fuerant
wound, the structure of the vessels and of the other parts, which had been
 vulnerata, ita læditur, ut nunquam bene resarciatur, et cicatrix
wounded, is so injured, that it never is well repaired, and a cicatrix
 major ve minor, fortasse nunquam delenda penitus, immo
greater or less, perhaps never to be destroyed entirely, nay even
 interdum ingravescens, relinquitur.
sometimes increasing, is left behind.

845. Verum enimvero multum abest ut hæc, et commenta
But truly it is far from that these, and comments
 hujusmodi, bene explanent nutrimentum corporis. Quamvis sit
of this sort, thoroughly explain the nourishment of the body. Although it is
 non dubium nutrientem humorem deferri per arterias ad
not doubtful that the nutritive fluid is conveyed by the arteries to
 omnes partes corporis, et varios motus earum et
all parts of the body, and that the various motions of them and
 musculorum, usque comprimere arterias ipsas que vicinas
of the muscles, continually compress the arteries themselves and contiguous
 partes, et sane omnes partes; tamen non bene intelligitur
parts, and indeed all parts; notwithstanding it is not well understood
 quomodo materia adeo diversa, constans quodammodo ex diversis
how a matter so different, consisting in some measure of different
 elementis, habens prorsus diversam fabricam et qualitates, appo-
elements, having an altogether different structure and qualities, should be
 natur variis partibus, dentibus, ossibus, nervis, musculis,
deposited in the various parts, the teeth, bones, nerves, muscles,
 cartilaginibus, ligamentis, reticulatæ telæ, &c.
cartilages, ligaments, cellular tissue, &c.

846. Enim, plurima terra inest ossibus, cujus parum
Moreover, a great deal (of) earth is in the bones, of which little
 omnino reperitur in aliis partibus. Neque fere ossa com-
at all is found in the other parts. Nor generally are the bones com-
 primuntur tantum ac quædam molles partes, veluti arteriæ. Quin et,
pressed so much as some soft parts, as the arteries. Besides,
 a vitio, raro profecto, sed interdum observato, parum istius
from disease, rarely indeed, but sometimes observed, little of that
 terræ deponitur in ossibus, quæ (sc. ossa) ideo molliuntur; et
earth is deposited in the bones, which therefore are softened; and
 interdum, contra, ossea substantia deponitur in alienis
sometimes, on the other hand, osseous matter is deposited in unsuitable

fuisse: aliquando tamen, imprimis a graviore
 vulnere, fabrica vasorum aliarumque partium
 quæ vulnerata fuerant, ita læditur, ut nunquam
 bene resarciatur, et cicatrix major minorve,
 fortasse nunquam penitus delenda, immo ingra-
 vescens interdum, relinquitur.

845. Verum enimvero multum abest, ut hæc et
 hujusmodi commenta nutrimentum corporis
 bene explanent. Quamvis non dubium sit,
 humorem nutrientem per arterias ad omnes
 corporis partes deferri, et varios earum et mus-
 culorum motus, ipsas arterias partesque vicinas,
 et sane omnes partes, usque comprimere; tamen

non bene intelligitur quomodo materia adeo
 diversa, ex diversis quodammodo elementis
 constans, diversam prorsus fabricam et quali-
 tates habens, variis partibus, dentibus, ossibus,
 nervis, musculis, cartilaginibus, ligamentis,
 telæ reticulatæ, &c. apponatur.

846. Plurima enim ossibus inest terra, cujus
 parum omnino in aliis partibus reperitur. Neque
 ossa fere tantum comprimuntur ac partes quæ-
 dam molles, veluti arteriæ. Quin et a vitio,
 raro profecto, sed interdum observato, parum
 istius terræ in ossibus deponitur, quæ ideo
 molliuntur; et interdum contra, substantia

partibus, musculis, visceribus, &c. ita ut miser ita affectus, si
parts, the muscles, viscera, &c. so that the wretch thus affected, if
 vixisset, forsitan factus esset totus os.
he should live, perhaps would become all (entirely) bone.

847. Præterea, minuta et delicatissima fabrica organorum,
Besides, the minute and very delicate structure of the organs,
 puta, musculorum ve nervorum, conservatur inter nutriendum,
for example, of the muscles or nerves, is preserved while nourishing
 ita ut suæ vitales dotes constant singulis,
(during nutrition), so that their own vital properties remain to each,
 quod vix fieret tali artificio quale auctores finx-
erint, quod nimirum sufficeret rudem et indigestam
imagined, which indeed would substitute a rude and confused
 massam in locum pulcherrimæ fabricæ detritæ et
mass in the place (instead) of the very beautiful structure worn out and
 dilabentis.
decaying (ed).

848. Alii summi viri crediderunt nutrimentum fieri
Other very celebrated men believed that nutrition was accomplished
 per nervos non per arterias; que gluten sanguinis
through the nerves not through the arteries; and that the gluten of the blood
 secretum in cerebro, attenuatum, purgatissimum ab omni
being secreted in the brain, attenuated, very well freed from every
 sale qui corrumperet, percolari quodammodo per nervos
salt which could corrupt it, was strained in some degree through the nerves
 que deferri ad varias partes, quodam subtilissimo, mobilissimo,
and was conveyed to the different parts, a certain very subtle, mobile,
 præstantissimo fluido, quod opinati sunt inesse in nervis, juvante
exquisite fluid, which they supposed to exist in the nerves, assisting
 et propellente. Multi opinantur herbas nutriri fere
and propelling. Many suppose that herbs are nourished almost
 simili modo quamvis sane nondum bene constet de
a similar manner although indeed it is not yet well determined about
 his, que multa potius ostendant eas accipere suum
these, and many things rather shew that they receive their
 nutrimentum longe diversa ratione, Neque profecto hactenus
nourishment in a far different manner. Nor indeed hitherto
 constitit cerebrum secernere ullum humorem, aut
as it been decided that the brain secreted any fluid, or
 ullum fluidum inesse in nervis, aut tenue et purum
that any fluid existed in the nerves, or that a thin and pure

esse in alienis partibus, musculis, visceribus, &c. deponitur, ita ut miser ita affectus, si vixisset, forsitan totus os factus esset.
 847. Præterea, minuta et delicatissima organorum, puta musculorum nervorumve, fabrica, inter nutriendum conservatur, ita ut singulis suæ constant dotes vitales, quod vix fieret, tali artificio quale auctores finxerint; nimirum, quod massam rudem et indigestam sufficeret in locum pulcherrimæ fabricæ detritæ et dilabentis.
 848. Crediderunt alii summi viri nutrimentum per nervos, non per arterias, fieri; glutenque sanguinis in cerebro secretum, attenuatum, ab

omni sale qui corrumperet purgatissimum, per nervos quodammodo percolari, adque varias partes deferri, juvante et propellente fluido quodam subtilissimo, mobilissimo, præstantissimo, quod in nervis inesse opinati sunt. Simili fere modo herbas nutriri multi opinantur, quamvis sane nondum de his bene constet, multaque potius ostendant eas longe diversa ratione suum nutrimentum accipere. Neque profecto hactenus constitit, cerebrum ullum secernere humorem, aut fluidum ullum in nervis inesse, aut tenue et purum gluten per eos percolari; nam neque tument ligati, neque

gluten percolari per eos: nam neque tument ligati,
gluten was strained through them: for they neither swell (when) tied,
 neque secti fundunt ullum humorem; neque subtilissimam
nor (when) cut do they pour out any fluid; nor that a very subtle
 auram, qualem nuper et olim fuit opinio inesse iis,
vapour, such as lately and formerly was the opinion existed in them,
 posse propellere talem humorem saltem crassionem aqua; neque
could propel such a fluid at least thicker than water; nor
 demum nutrimentum fieri per nervos; nam ovum et
in fine that nutrition took place through the nerves; for the ovum and
 placenta et umbilici funis nutriuntur et crescunt sine nervis,
placenta and umbilical cord are nourished and grow without nerves,
 et fœtus satis bene aliti nati sunt sine capite, et
and fœtuses sufficiently well nourished have been born without a head, and
 in animalibus frigidi sanguinis, multo tenacioribus vitæ quam homo,
in animals of cold blood, much more tenacious of life than man,
 artus, puta crus et femur bene alitur, neque
a limb, for example a leg and thigh is well nourished, nor
 marcescit magno nervo qui adit eum secto. Neque
does it waste (on) the great nerve which supplies it being cut. Nor
 demum melius intelligitur quo pacto sua materia daretur
in fine is it better understood by what means their own matter could be given
 singulis organis, sua fabrica singulis, per nervos potius
to the individual organs, its proper structure to each, through the nerves rather
 quam per arterias.
than by the arteries.

849. Utcunque hæc res habuerit se, semper
However this matter should have itself, (may be) it will always
 juvabit scire nutrimentum affici multum, et vel promoveri
benefit to know that nutrition is affected much, and either is promoted
 vel impediri non modo statu et actione arteriarum que
or impeded not only by the condition and action of the arteries and
 nervorum sed plurimis aliis rebus de quibus melius
nerves but by a great many other things concerning which it is better
 constat. Motu sanguinis per arteriam obstructo vel
established. The motion of the blood through an artery being obstructed or
 imminuto, artus quem hæc (sc. arteria) adibat friget, torpet,
diminished, the limb which it supplied grows cold, is torpid,
 et simul marcescit, donec motus sanguinis restituatur vel
and at the same time wastes, until the motion of the blood can be restored either
 per solitas vias, vel per novas, forsitan per communicantes
through the usual channels, or through new ones, perhaps by communicating

secti ullum humorem fundunt; neque subtilissimam auram, qualem inesse iis nuper et olim opinio fuit, talem humorem, aqua saltem crassionem, propellere posse; neque demum nutrimentum per nervos fieri; nam ovum, et placenta, et funis umbilici, sine nervis nutriuntur et crescunt, et fœtus siue capite nati sunt satis bene aliti, et in animalibus frigidi sanguinis vitæ multo quam homo tenacioribus, artus, puta crus et femur, bene alitur, neque marcescit, secto magno qui cum adit nervo. Neque demum melius intelligitur quo pacto per ner-

vos, potius quam per arterias, sua singulis materia (845) sua singulis fabrica daretur.

849. Utcunque hæc se res habuerit, scire semper juvabit, nutrimentum multum affici, et vel promoveri vel impediri, non modo statu et actione arteriarum nervorumque, sed plurimis aliis rebus de quibus melius constat. Obstructo vel imminuto sanguinis per arteriam motu, artus quem hæc adibat, friget, torpet, et simul marcescit, donec motus sanguinis vel per solitas vias restituatur, vel per novas, forsitan per ramos communicantes, quas brevi sibi legit

ramos quas (sc. vias) brevi legit sibi; aliquando tamen
branches which it quickly chooses for itself: sometimes however

artus post talem obstructionem nunquam fit torosus ut antea.
the limb, after such an obstruction never becomes brawny as before.

Plurimo sanguine quoque detracto, totum corpus marcescit.
Very much blood also being drawn off, the whole body wastes.

850. Affectæ partes quoque sæpe marcescunt a paralyti vel
The affected parts also often emaciate from paralysis either

generali, vel cujuslibet partis quod est semper malum signum;
general, or of any part: which is always a bad sign;

que indicat morbum vel prorsus insanabilem, vel difficillimum sanatu.
and indicates a disease either altogether incurable, or very difficult to be cured.

Talis tabes paralytici artus potest fieri, vel propter
Such a wasting of a paralytic limb may occur, either on account of

vim arteriarum, simul cum vi musculorum pereuntem aut
the force of the arteries, together with the power of the muscles perishing or

labefactam, quod aliquando accidit; vel propter perpetuam
(being) destroyed, which sometimes happens; or on account of constant

quietem artus, quæ (sc. quies) facit omnes partes præsertim
rest of the limb, which causes all parts especially

musculosas marcescere, citra paralytin, vel vitium
the muscular to waste, without (independent of) paralysis, or disorder

motus sanguinis, vel sane ullum morbum, non secus ac justus
of the motion of the blood, or indeed any disease, just as proper

usus reddit eas (sc. partes musculosas) torosas; vel denique
exercise renders them brawny; or lastly

propter vim ipsam, quæ reparat jacturam solidarum
on account of the power itself, which repairs the loss of the solid

partium novis particulis appositis, deficientem et corruptam,
parts by new particles being deposited, failing and (being) corrupted

si hæc (sc. vis) est sita in nervis. Quædam partes quoque
if it is placed in the nerves. Some parts also

marcescunt, nunquam fortasse recuperaturæ pristinam molem aut
waste, never perhaps to recover their former size or

vigorem, a magnâ jacturâ sanguinis aut gravi vulnere aut
vigour, from great loss of blood or a severe wound or

ulcere infestante eas diu.
an ulcer infesting them for a long time.

851. Nutrimentum pendet multum a quantitate nec minus a
Nutrition depends much upon the quantity nor less upon

qualitate ciborum quos sumimus, eadem moles et pondus
the quality of the foods which we take, the same bulk and weight

aliquando tamen artus, post talem obstructionem, nunquam ut antea torosus fit. Plurimo quoque detracto sanguine, totum corpus marcescit.

850. Sæpe quoque a paralyti, vel generali vel partis cujuslibet, partes affectæ marcescunt; quod signum semper malum est, morbumque vel prorsus insanabilem, vel sanatu difficillimum, indicat. Talis artus paralytici tabes fieri potest, vel propter vim arteriarum simul cum vi musculorum pereuntem aut labefactam, quod aliquando accidit; vel propter perpetuam artus quietem, quæ citra paralytin,

vel vitium motus sanguinis, vel sane morbum ullum, partes omnes, præsertim musculosas, marcescere facit, non secus ac justus usus eas torosas reddit; vel, denique, propter vim ipsam quæ jacturam solidarum partium novis appositis particulis reparat, deficientem et corruptam, si hæc in nervis sita est. Marcescunt quoque partes quædam, fortasse nunquam pristinum recuperaturæ molem aut vigorem, a magna sanguinis jactura, aut gravi vulnere, aut ulcere eas diu infestante.

851. Nutrimentum pendet multum a quantitate, nec minus a qualitate ciborum quos su-

quorum nimirum continent plus minus nutrientis materiei.
of which indeed contain more (or) less (of) nutritive matter.
 Multum quoque pendet a bonâ vel imperfectâ concoctione
Much also depends upon the good or imperfect concoction
 cibi qui fuerit sumptus.
of the food which may have been taken.

852. Ut homo qui fruitur secundâ valetudine fere nutritur
As the man who enjoys good health generally is nourished
 bene, dummodo habuerit sat idonei cibi: sic qui laborant
well, provided he have sufficient of proper food: so they who suffer
 ad versâ valetudine plerumque nutriuntur male, et sæpe subito
from bad health generally are nourished badly, and often suddenly
 marcescunt: scilicet quia dum quisquam ægrotat raro appetit
waste: truly because whilst a person is sick he seldom desires
 cibum bene, adhuc rarius concoquit bene, et sæpe exhauritur
food well, still less frequently digests (it) well, and often is exhausted
 insolito dispendio, nimirum fluidis partibus corporis
by unusual loss, namely by the fluid parts of the body
 dissipatis ultra modum et solidis multum detritis
being dissipated beyond bounds, and the solid being much worn away
 vehementiore motu cui subjiciuntur; quod est imprimis
by the more violent motion to which they are subjected; which is especially
 notabile in omnibus febris. Neque profecto opinio videtur
remarkable in all fevers. Nor indeed does the opinion appear
 absurda, plurimos morbos, præsertim quos auctus impetus
absurd, that many diseases, especially (those) which an increased impetus
 sanguinis comitatur, ob stare nutrimento ipsi, appositione novarum
of blood accompanies, oppose nutrition itself, by the apposition of the new
 particularum impeditâ.
particles being impeded.

853. Est non dubium maximam partem ponderis quod (sc.
It is not doubtful that the greatest part of the weight which
 pondus) ægroti amittunt esse adipem, qui consumitur facillime
the sick lose is fat, which is consumed very easily,
 et sæpe reparatur brevi. Vero quædam exempla ostenderunt
and often is repaired quickly. But some examples have proved
 omnes partes, pariter solidas ac fluidas, interdum consumi;
that all parts, alike solid and fluid, sometimes were consumed;
 nimirum, deteri et dissipari citius quam novæ particulæ
that is, were worn away and dissipated more quickly than the new particles
 apponerentur.
were deposited.

nimus, nimirum quorum eadem moles et pondus plus minus materiei nutrientis continent. Multum quoque pendet a concoctione bona vel imperfecta cibi qui sumptus fuerit.

852. Ut homo qui secunda valetudine fere bene nutritur, dummodo sat habuerit cibi idonei: sic qui adversa valetudine laborant plerumque male nutriuntur, et sæpe subito marcescunt: scilicet, quia dum ægrotat quisquam cibum raro bene appetit, rarius adhuc bene concoquit, et sæpe insolito dispendio exhauritur, dissipatis nimirum ultra modum fluidis corporis partibus, et solidis multum detritis vehementiore cui subjiciuntur motu;

quod in febris omnibus imprimis notabile est. Neque profecto absurda videtur opinio, plurimos morbos, præsertim quos auctus sanguinis impetus comitatur, ipsi nutrimento ob stare, impedita novarum particularum appositione.

853. Non dubium est maximam partem quod amittunt ægroti ponderis adipem esse (101, et seqq.), qui facillime consumitur, et brevi sæpe reparatur. Quædam vero exempla ostenderunt, omnes partes, solidas pariter ac fluidas, interdum consumi; deteri nimirum et dissipari citius quam novæ particulæ apponerentur.

854. Certâ ætate nutritur accurate sine incremento aut
At a certain age we are nourished accurately without increase or
 imminutione: scilicet, quotidiana jactura reparatur quotidiano
diminution: that is, the daily loss is repaired by the daily
 nutrimento. Autem primâ ætate crescimus multum et subito;
nutrition. But at the first age we grow much and suddenly;
 proveciore ætate non crescimus, sed pinguescimus; ultima
in more advanced age we do not increase, but we grow fat; in the last (age)
 decrescimus iterum et contrahimur, que ipsa ossa nostrorum
we decrease again and are contracted, and the very bones of our
 corporum videntur diminui.
bodies seem to be diminished.

855. Neque profecto ratio harum rerum adeo difficilis aut obscura
Nor indeed (is) the reason of these things so difficult or obscure
 ac explicatio nutrimenti ipsius. Enim vi seu facultate existente
as the explanation of nutrition itself. For the power or faculty existing
 quæ apponat novam materiam corpori, que
(being admitted) which deposits new matter in the body, and
 deterat et ejiciat vetustam, potest intelligi quodammodo
wears away and ejects the old, it may be understood in some degree
 a statu corporis variis ætatibus, hoc (sc. corpus)
from the condition of the body at the various ages, that it
 aliquamdiu auctum iri, vero certo tempore desitutum crescere,
for sometime will be increased, but at a certain time (it) will cease to increase,
 que tandem incepturum decrescere, et indies minutum iri donec
and at length will begin to decrease, and daily will be diminished until
 vita ipsa deficiat, functionibus prorsus impeditis.
life itself fails, the functions being altogether impeded.

856. Primâ ætate scilicet, (neque habet res se aliter
At the first age indeed, (nor has the thing itself otherwise
 dum homunculus latet in utero) corpus est
whilst the homunculus (little man) lies hid in the uterus) the body is
 mollissimum et aptum extendi, et magna
very soft and fit to be extended (capable of being extended), and a great
 vis adest incipiens fere a centro corporis, quæ distendat
force is present beginning almost from the centre of the body, which distends
 totum; scilicet, cor multo grandius pro rata parte quam in
the whole; that is, the heart much larger in proportion than in
 adulto viro, multo magis irritabile, que micans multo frequentius.
the adult man, much more irritable, and beating much more frequently.
 Vasa quoque quæ vehunt sanguinem adsunt numerosiora,
The vessels also which carry the blood are present more numerous,

854. Certa ætate accurate nutritur sine incremento aut imminutione: quotidiana scilicet jactura quotidiano nutrimento reparatur. Prima autem ætate, multum et subito crescimus: proveciore non crescimus, sed pinguescimus: ultima decrescimus iterum et contrahimur, ipsaque corporum nostrorum ossa diminui videntur.

855. Neque profecto adeo difficilis aut obscura harum rerum ratio, ac nutrimenti ipsius explicatio. Existente enim vi seu facultate quæ novam materiam corpori apponat, vetustamque deterat et ejiciat, a statu corporis variis ætatibus quodammodo intelligi potest, hoc ali-

quamdiu auctum iri, certo vero tempore desitutum crescere, tandemque incepturum decrescere, et indies minutum iri, donec vita ipsa, impeditis prorsus functionibus, deficiat.

856. Prima scilicet ætate (neque aliter res se habet dum in utero latet homunculus), corpus mollissimum est et aptum extendi, et magna vis adest, fere a centro corporis incipiens quæ totum distendat; cor scilicet multo grandius pro rata parte quam in adulto viro, multo magis irritabile, multoque frequentius micans. Vasa quoque que sanguinem vehunt adsunt numerosiora, molliora, magisque irritabilia, quam provecia ætate.

molliora, que magis irritabilia quam provec̄tâ ætate.
softer, and more irritable than at advanced age.

857. Hac vi omnes arteriæ et quotquot partes
By this power all the arteries and whatever parts
connectuntur cum iis, scilicet totum corpus, allquantum dis-
are connected with them, that is the whole body, are somewhat dis-
tenduntur centies et quinquagies millies quotidie, neque
tended one hundred and fifty thousand times every day, nor
est (pro hab) solidis partibus corporis adhuc mollis et teneri
have the solid parts of the body as yet soft and tender
tanta vis resiliendi ut recuperent statim pristinum
so great a power of rebounding that they should recover immediately their former
situm et molem: autem novâ materiâ appositâ dum
position and bulk: but new matter being deposited whilst
distenduntur, non modo extenduntur, sed usque crescunt,
they are distended, they not only are extended, but continually grow,
que induratæ perpetuâ compressione, fiunt firmiores et
and hardened by the constant compression, they become firmer and
validiores, et renituntur magis, in posterum extendendæ
stronger, and resist more, for the future to be extended
ægrius: præsertim quum vis ipsa quæ distendit
with more difficulty: especially when the force itself which distends
non æque augeatur: præterea ista vis impensa majori
is not equally increased: besides that force expended upon the greater
moli, quamvis firmitas ejûs fuisset eadem, valet eo minus,
bulk, although the firmness of it should be the same, is available the less,
quod omnis frictio et renixus a pondere partium
because all the friction and resistance from the weight of the parts
quæ debent moveri, augeantur simul cum mole corporis.
which ought to be moved, are increased together with the bulk of the body.

858. Sic corpus crescit aliquamdiu sed fere indies lentius.
Thus the body grows for some time but almost every day more slowly.

Novem mensibus quos homunculus transit in utero, acquirit,
In the nine months which the homunculus passes in the womb, it acquires,
staturam pedis cum semisse; spatio trium annorum,
the stature of a foot with (and) a half; in the space of three years,
scilicet, quadruplo istius temporis, infans adipiscitur alium
that is, in the quadruple of that time, the infant acquires another
pedem cum semisse; autem quindecim vel viginti annis mox sequentibus,
foot and a half; but in the fifteen or twenty years next following,
si creverit tamdiu, juvenis jam adeptus plenam staturam
if it should grow so long, the youth having now attained its full stature

857. Hac vi omnes arteriæ, et quotquot cum
iis connectuntur partes, totum scilicet corpus,
centies et quinquagies millies quotidie ali-
quantum distenduntur, neque tanta solidis
partibus corporis adhuc mollis et teneri vis
resiliendi est, ut pristinum situm et molem
statim recuperent: nova autem dum disten-
duntur appositâ materia, non modo extendun-
tur, sed crescent usque, perpetuæque compres-
sione induratæ, firmiores et validiores fiunt, et
renituntur magis, ægrius in posterum exten-
dendæ: præsertim quum vis ipsa quæ distendit
non æque augeatur: præterea, ista vis majori

moli impensa, quamvis firmitas ejus eadem
fuisset, eo minus valet, quod frictio omnis, et
renixus a pondere partium quæ debent moveri,
augeantur simul cum mole corporis.

858. Sic corpus aliquamdiu crescit, sed indies
fere lentius. Novem mensibus quos in utero
transit homunculus, staturam pedis cum se-
missem acquirit; trium annorum spatio, quad-
ruplo scilicet istius temporis, infans alium
pedem cum semisse adipiscitur; quindecim
autem vel viginti annis mox sequentibus, si
tamdiu creverit, juvenis plenam staturam jam
adeptus vix ultra sex pedes habet.

vix habet ultra sex pedes.
scarcely has beyond six feet.

859. Neque tamen omnes partes crescunt pariter; quædam formatae maturæ in fœtu, et jam adeptæ magnam molem quum infans prodit ex suis latebris, aut crescunt lentius in posterum aut plane minuuntur; dum bene multæ aliæ, thorax nimirum, et pulmones, et artus, præsertim inferiores, crescunt multum et subito et plus quam aliæ partes.

860. Sic variæ proportiones trunci corporis et artuum contingunt variis ætatibus; quod pictores et sculptores bene norunt; ita ut colossus centum pedes altus expresserit infantem trimestrem; et imago dimidium pollicem longa repræsentaverit adultum et procerum virum.

861. Caput imprimis in crudo fœtu tertia vel fortasse dimidia pars totius homunculi, in infante quinta vel sexta pars, in puero septima, in viro perfectissimæ formæ erit vix nona pars totius longitudinis. Vero quo citius quævis pars evolvitur per primam fabricationem corporis, et crescit in justam molem et formam, eo maturius adipiscitur tantam firmitatem et vim resiliendi ut recuset distendi amplius, et igitur dirigat cursum sanguinis versus alias partes renitentes minus, et

859. Neque tamen omnes partes crescunt pariter; quædam in fœtu mature formatae, et magnam, quum ex latebris suis prodit infans, molem jam adeptæ, aut lentius in posterum crescunt, aut plane minuuntur; dum aliæ bene multæ, thorax nimirum, et pulmones, et artus, præsertim inferiores, multum, et subito, et plus quam aliæ partes, crescunt.

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aptiores distendi. Hinc, (ex aliquâ parte saltem,) (sup. sunt)
 more suited to be distended. Hence, (in some part at least,)
 pubertas utriusque sexus, et aliquando mirum et subitum
 the puberty of both sex, and sometimes the wonderful and sudden
 incrementum, imprimis artuum, eodem tempore quo superiores
 increase, especially of the limbs, at the same time in which the upper
 partes, et præsertim caput, fere desinant crescere.
 parts, and especially the head, almost cease to grow.

862. Porro, corpus non statim crescit quoquoersum.
 Moreover, the body does not immediately grow in every direction.
 Juvenis forsân adipiscitur justam et plenam staturam decimo octavo
 The youth perhaps acquires a proper and complete height at the eighteenth
 vel vigesimo anno ætatis, sed adhuc gracilis, et dissimilis forma
 or twentieth year of his age, but still slender, and unlike in shape
 adulto viro, et impar viribus. Vero paulatim adipiscitur
 to the adult man, and unequal in strength. But gradually he attains
 aliud incrementum et aliam formam, et fit quadratus et
 another growth and another shape, and becomes square and
 torosus, et habet ampliorem thoracem, et latiores humeros,
 brawny, and has a more ample chest, and broader shoulders,
 grandiora ossa, et juncturas artuum validiores.
 larger bones, and the joints of the limbs more powerful.

863. Est verisimile singulas partes corporis crescere primo
 It is probable that the individual parts of the body grow at first
 in longitudinem, quia distendens vis agit maxime secundum
 in length, because the distending power acts chiefly according to
 axes vasorum, donec hæc, multum distenta et facta
 the axes of the vessels, until they, greatly distended and rendered
 firmiora, renitantur magis que magis indies, neque patiantur
 more firm, resist more and more every day, nor do they suffer
 se distendi amplius. Vero tum eadem distendens vis
 themselves to be distended more. But then the same distending force
 diffunditur quoquoersum per ramos prodeuntes e magnis
 is diffused in every direction through the branches proceeding from the great
 truncis, qui ipsi ideo extenduntur, que simul
 trunks, which themselves therefore are extended, and at the same time
 extendunt partes cum quibus connectuntur.
 extend the parts with which they are connected.

864. Plurimæ aliæ res primâ ætate concurrunt, quæ multum
 Very many other things at the first age concur, which greatly
 promovent incrementum corporis. Quædam abundantia sanguinis videtur
 promote the growth of the body. A certain abundance of blood seems

tendi. Hinc (aliqua saltem ex parte) pubertas utriusque sexus, et mirum aliquando et subitum incrementum, imprimis artuum, eodem tempore quo partes superiores, et caput præsertim, fere desinant crescere.

862. Porro, corpus non statim quoquoersum crescit. Justam et plenam staturam juvenis forsân adipiscitur decimo octavo vel vigesimo ætatis anno, sed gracilis adhuc, et forma adulto viro dissimilis, et viribus impar. Paulatim vero aliud incrementum, et aliam adipiscitur formam, et quadratus fit et torosus, et thoracem ampliorem, humeros latiores, ossa grandiora, juncturasque artuum validiores habet.

863. Verisimile est singulas corporis partes primo in longitudinem crescere, quia vis distendens secundum axes vasorum agit maxime, donec hæc multum distenta, et firmiora facta, magis magisque indies renitantur, neque amplius se patiantur distendi. Tum vero eadem vis distendens quoquoersum diffunditur per ramos e magnis truncis prodeuntes, qui ideo extenduntur ipsi, partesque quibuscum connectuntur extendunt simul.

864. Plurimæ aliæ res prima ætate concurrunt, quæ incrementum corporis multum promovent. Abundantia quædam sanguinis subsesse videtur, minime profecto morbosa, quæ vasa

subesse, profecto minime morbosa, quæ probe impleat atque
to be present, indeed by no means morbid, which properly fills and
 distendat vasa vehentia sanguinem, præsertim arterias, quoniam
distends the vessels carrying blood, especially the arteries, since
 hac ætate venæ pollent multo majore vi quam arteriæ;
at this age the veins act with much greater power than the arteries;
 quin et, hæc abundantia sanguinis non modo distendit vasa, sed
moreover, this abundance of blood not only distends the vessels, but
 quoque suggerit plus nutrimenti quam, sine incremento, fuerit
also supplies more nourishment than, without growth, would be
 necessarium ad reparandum corpus; neque est dubium plerosque
necessary to repair the body; nor is it doubtful that most
 infantes fore plenissimos, nisi vel abundantia sanguinis
infants would be very full (plethoric), unless either the abundance of blood
 quam habent impenderetur huic usui, vel ipsi exercerent
which they have were applied to this use, or they themselves exercised
 semet plurimum; quippe qui sumant, pro ratâ parte, multo
themselves a great deal; as being who take, in proportion, much
 plus cibi quam adulti homines, et fere concoquant optime,
more food than adult persons, and generally digest excellently well,
 et dormiant multum, et existant laxi, et ideo proclives
and sleep much, and exist (are) lax, and on that account disposed
 ad plenitudinem.
to plethora.

865. Et profecto quamvis ista plenitudo, dum pueri crescunt,
And indeed although that plethora, while children are growing,
 minime noceat, dummodo fuerit non ingens, quamprimum desinunt
by no means hurts, provided it be not great, as soon as they cease
 crescere, sæpe prodit se manifestissimis signis, nec
to grow, it often shews itself by the most manifest symptoms, not
 raro, si adolescens fuerit debilioris constitutionis, inducit
unfrequently, if the young man should be of a weaker constitution, brings on
 gravissimos morbos.
very severe diseases.

866. Aucta moles que aucta rigiditas universi corporis
The increased bulk and increased rigidity of the whole body
 imponunt finem incremento et imprimis arteriarum rigescentium
put an end to the increase, and first of all of the arteries becoming stiff
 perpetuâ actione et compressione, et firmitas ossium,
from the constant action and compression, and the firmness of the bones,
 et ut quidam clari auctores opinantur ingens renixus car-
and as some celebrated authors imagine the great resistance of the car-

sanguinem vehentia probe impleat atque distendat, præsertim arterias, quoniam hac ætate venæ multo majore vi quam arteriæ pollent (454); quin et hæc sanguinis abundantia non modo vasa distendit, sed plus quoque nutrimenti suggerit, quam ad corpus sine incremento reparandum necessarium fuerit: neque dubium est plerosque infantes plenissimos fore, nisi vel huic usui impenderetur sanguinis abundantia quam habent, vel plurimum ipsi semet exercerent; quippe qui multo plus pro rata parte quam adulti homines cibi sumant, et optime fere concoquant, et multum dormiant, et laxi,

et ideo ad plenitudinem proclives, existant.

865. Et profecto, quamvis ista plenitudo, dum crescut pueri, minime noceat, dummodo non ingens fuerit, quamprimum desinunt crescere, manifestissimis signis sæpe se prodit, nec raro, si debilioris constitutionis adolescens fuerit, gravissimos morbos inducit.

866. Finem incremento imponunt aucta moles, auctaque rigiditas universi corporis, et imprimis arteriarum perpetua actione et compressione rigescentium, et firmitas ossium, et, ut clari quidam auctores opinantur, ingens renixus

tllaginum tegentium fines eorum, jam multum compressarum
tilages covering the extremities of them, now much compressed
 (cartilaginum) ossibus, increscentibus neque tolerantium ulteriorem
by the bones, growing nor enduring farther
 compressionem.
compression.

867. Demum, justo æquilibrio stabilito inter distendentem
At length, a proper equilibrium being established between the distending
 vim et renixum, que inter arterias et venas, corpus
force and resistance, and - between the arteries and veins, the body
 aliquamdiu neque crescit amplius, neque minuitur. Vero postea
for some time neither grows any more, nor is diminished. But afterwards
 acquirit aliud minus verum nutrimentum, scilicet, plurimo
it acquires another less true (real) nourishment, namely, a great deal (of)
 adipe secreto, et collecto sub cute, et in abdomine,
fat being secreted, and collected under the skin, and in the abdomen,
 et inter musculos, ratio cuius jam est reddita
and between the muscles, the reason of which has already been given
 suo loco.
in its proper place.

868. Vero corpus paulatim marcescit iterum, non modo adipe
But the body gradually emaciates again, not only by the fat
 resumpto, sed fere omnibus partibus male
being taken up again (absorbed), but almost all the parts being badly
 nutritis. Nimirum, omnes solidæ partes, et maximæ arteriæ, indies
nourished. Indeed, all the solid parts, and the large arteries, daily
 rigescunt, et hæc quoque fiunt arctiores, et plurimæ
become rigid, and the latter also become more contracted, and many (of)
 minores concluduntur penitus, et renixus ubique
the smaller ones are closed entirely, and the resistance every where (throughout)
 corporis est major, et motus sanguinis languidior, et
of the body is greater, and the motion of the blood more languid, and
 aliquatenus impeditus, et cor et arteriæ facta minus irritabilia,
somewhat impeded, and the heart and arteries become less irritable,
 micant quoque lentius et debilius, et plus sanguinis æquo
pulsate also more slowly and weakly, and more of blood than proper
 congeritur venis, minus in arteriis, et plurimæ functiones
is congested in the veins, less in the arteries, and most (of) the functions
 impediuntur, et omnes vires deficient, et tota machina dilabitur
are impeded, and all the powers fail, and the whole machine decays
 ab omni parte.
from every part.

cartilaginum fines eorum tegentium, jam multum
 crescentibus ossibus compressarum, ueque
 ulteriorem compressionem tolerantium.

867. Justo demum inter vim distendentem et
 renixum, interque arterias et venas, æquilibrio
 stabilito, corpus aliquamdiu neque crescit ampli-
 us neque minuitur. Postea vero aliud minus
 verum nutrimentum acquirit, plurimo scilicet
 secreto et collecto adipe sub cute, et in abdo-
 mine, et inter musculos, cuius ratio suo loco
 jam reddita est (101, et seqq.)

868. Paulatim vero corpus marcescit iterum,

non modo resumpto adipe, sed omnibus fere
 partibus male nutritis. Rigescunt indies nimi-
 rum omnes partes solidæ, et maximæ arteriæ,
 et hæc quoque arctiores fiunt, et plurimæ minores
 penitus concluduntur, et renixus ubique cor-
 poris major est, et sanguinis motus languidior,
 et aliquatenus impeditus, et cor et arteriæ,
 minus irritabilia facta, lentius et debilius quo-
 que micant, et plus æquo sanguinis in venis
 congeritur, minus in arteriis, et plurimæ func-
 tiones impediuntur, et vires omnes deficient, et
 tota machina ab omni parte dilabitur.

869. Igitur, est non dubitandum quin vita ipsa, citius vel
Therefore, it is not to be doubted but that life itself, sooner or
 serius, foret causa mortis. Vero pauci absumuntur hac naturali
later, would be a cause of death. But few are taken off by this natural
 et inevitabili senili morte: enim innumeris morbi qui
and inevitable senile death: for the innumerable diseases which
 obsident semitam vitæ, semper rapuerunt maximam partem
beset the path of life, always have snatched away the greatest part
 humanæ gentis, ita ut vix quisque decimus compleverit
of the human race, so that scarcely every tenth person has completed
 septuaginta, vix quisque millesimus nonaginta annos; et longe
seventy, scarcely every thousandth ninety years; and by far
 maxima pars ex his qui attigerint senium fuerunt absumpti,
the greatest part of those who have reached old age have been taken away,
 non merâ senectute, sed variis morbis quibus illa ætas
not by mere old age, but by the various diseases to which that age
 facta est opportuna.
has been rendered liable.

870. Motu sanguinis tandem languente, propter rigiditatem
The motion of the blood at length languishing, on account of the rigidity
 omnium solidarum partium, et torporem et debilitatem moventium
of all the solid parts, and the torpor and debility of the moving
 virium, que corde non amplius valente ad proprium munus,
powers, and the heart no longer availing for its proper function,
 motus sanguinis perit primo in extremis partibus corporis,
the motion of the blood ceases first in the extreme parts of the body,
 adhuc superstes in pectore, et trunco, et capite. Idem, jam
while yet remaining in the breast, and trunk, and head. The same, now
 deficiens in pulmone, inducit quandam anhelationem, et laboriosam
failing in the lungs, brings on a certain panting, and laborious
 respirationem, ad promovendum transitum sanguinis per pulmonem.
respiration, to promote the passage of the blood through the lungs.
 Hoc conatu tandem valente parum, que viribus penitus
This effort at length availing little, and the strength being entirely
 exhaustis, longa, plena exspiratio succedit, sua sponte, ultimæ
exhausted, a long, deep expiration succeeds, of its own accord, to the last
 inspirationi; que omnibus functionibus necessariis ad vitam simul
inspiration; and all the functions necessary to life at the same time
 cessantibus, hæc (sc. vita) facile, et sine convulsione, commutatur
ceasing, it easily, and without a struggle, is exchanged
 cum morte.
with (for) death.

869. Non est igitur dubitandum, quin vita ipsa citius vel serius mortis causa foret. Pauci vero hæc naturali et inevitabili morte senili absumuntur: innumeri enim qui vitæ semitam obsident morbi, maximam gentis humanæ partem semper rapuerunt, ita ut vix decimus quisque septuaginta, vix millesimus quisque nonaginta annos compleverit; et ex his qui senium attigerint, longe maxima pars non mera senectute, sed variis, quibus illa opportuna facta est, morbis absumpti fuerunt.

870. Languente tandem propter rigiditatem omnium partium solidarum, et torporem et debilitatem virium moventium, sanguinis motu,

cordeque non amplius ad proprium munus valente, sanguinis motus in partibus corporis extremis primo perit, in pectore, et trunco, et capite adhuc superstes. Idem in pulmone jam deficiens, anhelationem quandam, et respirationem laboriosam inducit (600), ad promovendum sanguinis transitum per pulmonem. Hoc tandem conatu parum valente, viribusque penitus exhaustis, ultimæ inspirationi, exspiratio longa, plena, sua sponte succedit; omnibusque functionibus ad vitam necessariis simul cessantibus, hæc facile et sine convulsione cum morte commutatur.

871. Autem varia genera mortis existunt, præter hanc senilem et naturalem (sc. mortem), quæ est habenda fere rarissima omnium; *But various kinds of death exist, besides this senile and natural one, which is to be considered almost the rarest of all;* nimirum causæ sunt variæ, et prope innumeræ, quæ possint *indeed the causes are various, and almost innumerable, which may* corrumpere que tandem perducere ad finem machinam adeo delicatam *corrupt and at length bring to an end a machine so delicate* atque compositam, et conservatam tot functionibus ac humanum *and complicated, and preserved by so many functions as the human* corpus; præsertim quum variæ partes que functiones ejus ita *body; especially as the various parts and functions of it are so* conjunguntur ut aliæ plane sustineantur ab aliis; et igitur *conjoined that some evidently are sustained by others; and therefore* siquid mali acciderit cuivis earum, vires non solum ejus, *if any evil should happen to any of them, the powers not only of it,* sed fortasse totius machinæ, collabuntur simul. *but perhaps of the whole machine, collapse at the same time.*

872. Vero neque res ipsa postulat, neque propositum hujus operis sinit enumerare omnes causas istiusmodi. Fuerit sat *But neither does the subject itself require, nor does the purpose of this work permit to enumerate all the causes of this kind. It will be sufficient* monuisse eas¹ esse numerosissimas, et instare ab omni parte; *to have advised that they are very numerous, and press on every side;* plerumque, tamen, (fortasse semper, nisi locus observandi *generally, however, (perhaps always, unless an opportunity of observing* plane desit, propter summam celeritatem mortis,) *be altogether wanting, on account of the very great quickness of death,)* qualiscunque fuerit origo seu remotior causa mali, *whatever have been the origin or remoter cause of the disease,* aliquam (sc. functionem) vitalium functionum, nempe, actionem *that some one of the vital functions, for instance, the action* cerebri que nervorum, aut circuitum sanguinis, aut respirationem *of the brain and nerves, or the circulation of the blood, or the respiration* impediri aut lædi, aut demum præter solitum affici aliquo *is impeded or injured, or indeed unusually affected in some* modo, priusquam vita penitus extingatur. Vero quoniam artis *manner, before that life is entirely extinguished. But because a very* simus nexus intercedit inter has functiones, ut jam exposito *close connexion exists between those functions, as already has been*

871. Varia autem, præter hanc senilem et naturalem, quæ omnium fere rarissima habenda est (869), existunt mortis genera; variæ nimirum, et prope innumeræ causæ sunt, quæ machinam adeo delicatam atque compositam, totque functionibus conservatam ac corpus humanum, corrumpere possint, et tandem ad finem perducere; præsertim quum variæ ejus partes varietate functiones ita conjunguntur, ut aliæ ab aliis plane sustineantur; et igitur siquid cuivis earum acciderit mali, non ejus solum, sed totius fortasse machinæ vires simul collabuntur.

872. Omnes vero istiusmodi causas enumerare, neque res ipsa postulat, neque operis hujus propositum sinit. Sat fuerit monuisse eas numerosissimas esse, et ab omni parte instare; plerumque tamen (fortasse semper, nisi propter summam mortis celeritatem observandi locus plane desit), qualiscunque fuerit origo seu causa remotior mali, aliquam functionum vitalium, actionem nempe cerebri nervorumque, aut sanguinis circuitum, aut respirationem, prius impediri aut lædi, aut aliquo demum modo præter solitum affici, quam vita penitus extingatur. Quoniam vero, ut jam expositum

tum est, unâ ve alterâ earum læsâ, omnes, plerumque,
explained, one or other of them being injured, all, for the most part,
 laborant simul.
suffer at the same time.

873. Est quoque perspicuum, ex signis illarum functionum
It is also evident, from the signs of those functions
 deficientium, aut impeditarum, aut habentium se male
failing, or being impeded, or having themselves badly
 variis modis, medicum in plerisque morbis posse præscire
in various ways, that the physician in most diseases can foreknow
 periculum instans ægrotante, et vel prædicere
(foresee) the danger impending over the sick, and either predict
 mortem, si nulla spes superest, vel si læsio fuerit neque
death, if no hope remains, or if the lesion should be neither
 naturâ neque magnitudine prorsus insanabilis, tum, idoneis
in its nature nor extent utterly incurable, then, by suitable
 remediis adhibitis, revocare quasi miserum ex mortuis.
remedies being applied, recall as it were the wretched patient from the dead.

874. Igitur, et decet et oportet medicum novisse signa
Therefore, it both becomes and behoves the physician to know the signs
 appropinquantis mortis; quæ quidem, licet variant haud parum
of approaching death; which indeed, although they may vary not a little
 in variis morbis, et sæpe sint incerta, non modo accidentia
in different diseases, and often are uncertain, not only (when) happening
 singula, sed plurima juncta simul, tamen, plerum-
single, but (when) many (are) joined together, nevertheless, for the most
 que, observantur in iisdem morbis, et satis constantia, et
part, they are observed in the same diseases, both sufficiently constant, and
 satis que super certa; præsertim si medicus attenderit
sufficiently and over certain; especially if the physician shall apply
 animum, non modo ad manifesta signa, sed
his mind (direct his attention), not only to the manifest signs, but
 simul, ad naturam et causam morbi, et conditionem
at the same time, to the nature and cause of the disease, and the condition
 ægri.
of the patient.

875. Imprimis, igitur, ingens debilitas, tum subita tum
First of all, therefore, great debility, as well sudden as (that)
 usque augescens, ita ut æger possit neque movere neque
constantly increasing, so that the patient can neither move nor
 sustinere se in lecto ut solebat, neque demum loqui, neque
support himself in bed as he used, nor even speak, nor

est, arctissimus has inter functiones intercedit
 nexus (411, et seqq.), læsa una alterave earum,
 omnes plerumque simul laborant.

873. Perspicuum quoque est ex signis illarum
 functionum deficientium, aut impeditarum, aut
 variis modis male se habentium, medicum in
 plerisque morbis periculum ægrotanti instans
 præscire posse, et vel mortem, si spes nulla
 superest, prædicere, vel si læsio neque natura
 neque magnitudine prorsus insanabilis fuerit,
 tum idoneis adhibitis remediis miserum quasi
 ex mortuis revocare.

874. Medicum igitur et decet et oportet signa

appropinquantis mortis novisse: quæ quidem
 licet in variis morbis haud parum variant, et
 non modo singula accidentia, sed plurima simul
 juncta, sæpe incerta sint, tamen plerumque in
 iisdem morbis et satis constantia observantur,
 et satis superque certa; præsertim si non modo
 ad signa manifesta, sed simul ad naturam et
 causam morbi, et conditionem ægri, medicus
 animum attenderit.

875. Imprimis igitur, ingens debilitas (380),
 tum subita tum usque augescens, ita ut æger
 neque se movere, neque sustinere ut solebat in
 lecto, neque demum loqui, neque cibum sumere

sumere cibum, aut devorare, scilicet, maxillâ cadente, et propriâ
take food, or swallow, that is, from the jaw falling, and the proper
 vi gulæ pereunte; tremores, aut contractiones, aut convulsiones
power of the gullet perishing; tremors, or contractions, or convulsions
 musculorum aut artuum; defectus, vel amissio cuiusvis sensûs
of the muscles or of the limbs; defect, or loss of any sense,
 sive externi sive interni, præsertim visûs vel tactûs; stupor,
whether external or internal, especially sight or touch; stupor,
 torpor, grave delirium, sunt mala signa in plerisque morbis, acutis
torpor, severe delirium, are bad signs in most diseases, acute
 pariter atque vetustis.
equally and chronic.

876. Porro, pulsus arteriarum multum vitiat, sive
Moreover, the pulsations of the arteries much vitiated, whether
 facti fuerint valde celeres sive tardi, sive præter modum validi, sive
they shall become very quick or slow, or unusually strong, or
 demum admodum debiles, et obscuri, et vix sentiendi, aut
indeed very weak, and obscure, and scarcely to be perceived, or
 abnormes et intermittentes, cum pallido et collapsio vultu,
irregular and intermitting, with a pallid and collapsed countenance,
 splendore oculorum extincto, artubus frigentibus, frigido et
the splendour of the eyes extinguished, the limbs becoming cold, cold and
 tenace sudore, spumâ circa os, et gravi anxietate,
tenacious (clammy) sweat, froth about the mouth, and great anxiety,
 plerumque ostendunt summum periculum, sæpe instantem mortem.
for the most part indicate the greatest danger, often impending death.

877. Respiratio, quoque, imperfecta, difficilis, laboriosa, et
The respiration, also, (when) imperfect, difficult, laborious, and
 facta strepens, ubi organa respirationis non prius
become loud, when the organs of respiration had not previously
 laboraverant, est pessimum.
suffered, is very bad.

878. Sæpe, etiam, in longis morbis, vero nonnunquam in acutis,
Often, also, in chronic diseases, but sometimes in acute,
 magna macies corporis, cadaverosus aspectus, et illa facies dicta
great emaciation of the body, a cadaverous aspect, and that face called
 Hippocratica, et in utroque genere morborum, insolitus fœtor, et
Hippocratic, and in both kind of diseases, an unusual fœtor, and
 tandem generalis putredo, observantur aliquamdiu ante mortem.
at length general putridity, are observed for some time before death.

879. Hæc, quidem, et signa hujusmodi, accidunt in variis morbis,
These, indeed, and signs of this sort, happen in various diseases,

aut devorare possit, cadente scilicet maxilla, et
 vi propria gulæ perenne; tremores, aut con-
 tractiones, aut convulsiones musculorum aut
 artuum; defectus vel amissio sensus cuiusvis,
 sive externi sive interni, præsertim visus vel
 tactus; stupor, torpor, delirium grave in ple-
 risque morbis, acutis pariter atque vetustis,
 mala signa sunt.

876. Porro, pulsus arteriarum multum vitiat,
 sive valde celeres sive tardi facti fuerint, sive
 præter modum validi, sive demum, admodum
 debiles, et obscuri, et vix sentiendi, aut abnor-
 mes et intermittentes, cum vultu pallido et
 collapsio, oculorum splendore extincto, artubus

frigentibus, sudore frigido et tenace, spuma
 circa os, et gravi anxietate, plerumque summum
 periculum, sæpe instantem mortem ostendunt.

877. Respiratio quoque imperfecta, difficilis,
 laboriosa, et strepens facta, ubi prius organa
 respirationis non laboraverant, pessimum est.

878. Sæpe etiam in longis morbis, nonnun-
 quam vero in acutis, magna corporis macies,
 aspectus cadaverosus, et facies illa Hippocratica
 dicta, et in utroque genere morborum, fœtor
 insolitus, et tandem putredo generalis, ali-
 quamdiu ante mortem observantur.

879. Hæc quidem et hujusmodi signa in variis
 morbis accidunt, eorumque magnitudinem

que probe declarant magnitudinem atque periculum eorum. Vero
and thoroughly declare the extent and danger of them. But
 plurima alia, et longe diversa, ostendunt se in
a great many other, and far different (ones), shew themselves in
 aliis atque aliis generibus morborum, secundum naturam horum
different kinds of diseases, according to the nature of them
 que partes corporis quibus maxime incumbunt, que commonstrant,
and the parts of the body over which they most hang, and demonstrate,
 ab ipso initio, periculum, interdum, fortasse, insanabilem
from the very beginning, the danger, sometimes, perhaps, the incurable
 naturam eorum.
nature of them.

880. Autem signa ipsa quæ habentur maxime infausta,
But the signs themselves which are considered most unfavourable,
 et plerumque lethalia, sæpe carent periculo, scilicet, cum
and for the most part deadly, often are free from danger, namely, when
 oriuntur a levibus aut fugacibus vel saltem facile medicabilibus causis :
they arise from slight or transient or at least easily remediable causes :
 veluti in *hysteriâ, asthmate, scorbuto*, quibusdam intermittentibus febribus,
as in hysteria, asthma, scurvy, some intermitting fevers,
 que multis aliis morbis.
and many other diseases.

881. Causa mortis, saltem plena et proxima causa ejûs,
The cause of death, at least the full and proximate cause of it,
 debet semper esse eadem, nimirum quæ consistit in amissione
ought always to be the same, as being that which consists in the loss
 illius ignoti statûs nervosi generis, qui videtur efficere
of that unknown state of the nervous system, which seems to produce
 vitam, quatenus est corporea. Vero quoniam ille status est adhuc
life, so far as it is corporeal. But because that state is still
 prorsus ignotus, plane oportet plenam et proximam causam
altogether unknown, it evidently behoves that the full and proximate cause
 mortis, quæ est nihil aliud quam extinctio ejûs (sc. statûs), esse
of death, which is nothing else than the extinction of that, be
 pariter ignotam.
alike unknown.

882. Quin et remotiores causæ mortis, nimirum, quales inducunt
Moreover the remoter causes of death, namely, such as bring on
 istum ignotum statum nervosi generis, intelliguntur vix melius
that unknown state of the nervous system, are understood scarcely better
 in longe plerisque exemplis; neque sane possunt detegi inspec-
in by far the most examples; nor indeed can they be detected by the inspec-

atque periculum probe declarant. Plurima vero alia, et longe diversa, in aliis atque aliis morborum generibus, secundum horum naturam, partesque corporis quibus maxime incumbunt, se ostendunt, eorumque periculum, interdum fortasse insanabilem naturam, ab ipso initio commonstrant.

880. Ipsa autem signa (874) quæ maxime infausta, et plerumque lethalia habentur, periculo sæpe caret, scilicet cum a causis levibus aut fugacibus, vel saltem facile medicabilibus, oriuntur; veluti in *hysteria, asthmate, scorbuto*, febribus quibusdam intermittentibus, multisque aliis morbis.

881. Causa mortis, saltem plena et proxima ejus causa, debet esse semper eadem, nimirum quæ consistit in amissione illius ignoti status generis nervosi, qui vitam, quatenus corporea est, efficere videtur. Quoniam vero status ille adhuc prorsus ignotus est plenam et proximam mortis causam, quæ nihil aliud est quam ejus extinctio, pariter ignotam esse plane oportet.

882. Quin et causæ mortis remotiores, quales nimirum ignotum istum statum generis nervosi inducunt, in longe plerisque exemplis vix melius intelliguntur; neque sane inspectione cadaverum detegi possunt. Sæpe enim, ut videtur, vis generis nervosi deficit, cum fabrica

tionē cadaverum. Enim vis nervosi generis, ut videtur, of dead bodies. For the power of the nervous system, as it appears, sæpe deficit, cum fabrica ejus, quatenus facultas explorandi often fails, when the structure of it, so far as the power of examining aut scalpello aut nostris sensibus, data sit, manet sana et either by the scalpel or our senses, has been given, remains sound and integra. Exempla hujusmodi observantur quotidie, in corporibus eorum entire. Examples of this kind are observed daily, in the bodies of those qui fuerint extincti quibusdam febribus, aut multis aliis similibus morbis, who have been cut off by certain fevers, or many other similar diseases, aut paralyti, aut convulsionibus, aut gangrænâ, aut variis venenis, or paralysis, or convulsions, or gangrene, or various poisons, receptis vel in ventriculum, vel in pulmones, vel in sanguinem, received either into the stomach, or into the lungs, or into the blood, aut fulmine, aut gravibus affectibus animi, aut subitâ or by thunder (lightning), or severe affections of the mind, or by sudden morte, aut interdum, demum, externâ vi illatâ vel death, or sometimes, in a word, by external violence done either capiti vel ventriculo. to the head or stomach.

883. Haud raro, tamen, insignes lesiones vel cerebri Not unfrequently, however, remarkable lesions either of the brain ipsius, vel saltem alicujus partis nervosi generis, deteguntur in itself, or at least of some parts of the nervous system, are detected in cadaveribus, quæ vulgo, quamvis parum accurate, habentur dead bodies, which commonly, although no way accurately, are considered pro plena et proxima causa mortis; veluti si cervix aut calvaria as the full and proximate cause of death; as if the neck or skull fuerint fractæ, aut cerebrum compressum, ve aliter læsum, sive a aliquâ parte calvariæ depressa, sive a sanguine, aut from some part of the skull being depressed, or from blood, or sero, aut pure, aut aquâ effusis in eodem (sc. cerebro), sive serum, or pus, or water being effused in the same, or a vasis tantum plus turgentibus æquo sanguine, ut from the vessels only being more turgid than proper with blood, as nonnunquam accidit in epilepsiâ, apoplexiâ, paralyti, hydrope, quibusdam sometimes occurs in epilepsy, apoplexy, paralysis, dropsy, certain febribus. fevers.

884. Sæpe, quoque, impedimenta aliarum vitalium functionum, et Often, also, impediments of the other vital functions, and

ejus, quatenus aut scalpello aut sensibus nostris explorandi facultas data sit, sana et integra manet. Hujusmodi exempla quotidie observantur, in corporibus eorum qui febribus quibusdam, aut multis similibus morbis, aut paralyti, aut convulsionibus, aut gangrænâ, aut variis venenis, vel in ventriculum, vel in pulmones, vel in sanguinem receptis, aut fulmine, aut gravibus animi affectibus, aut subita morte, aut demum interdum vi externa vel capiti vel ventriculo illata, extincti fuerint.

883. Haud raro tamen læsiones insignes, vel ipsius cerebri, vel alicujus saltem partis generis

nervosi, in cadaveribus deteguntur, quæ vulgo, quamvis parum accurate, pro plena et proxima causa mortis habentur; veluti si cervix aut calvaria fractæ fuerint, aut cerebrum compressum, aliterve læsum, sive a depressa aliqua parte calvariæ, sive a tumoribus intra caput, sive a sanguine, aut sero, aut pure, aut aqua in eodem effusis, sive tantum a vasis sanguine plus æquo turgentibus, ut in epilepsia, apoplexia, paralyti, hydrope, febribus quibusdam, nonnunquam accidit.

884. Sæpe quoque impedimenta aliarum functionum vitalium, et interdum etiam insignes

interdum etiam insignes læsiones fabricæ partium quæ
sometimes even remarkable lesions of the structure of the parts which
 inserviunt iis deteguntur, et merito habentur pro causâ,
subserve to them are detected, and justly are considered as the cause,
 quamvis, ut jam expositum est, non proximâ causâ, mortis;
although, as already has been explained, not the proximate cause, of death;
 veluti cor, vel aliquod magnum vas ruptum, vel erosum, vel
as the heart, or some great vessel broken, or eroded, or
 obstructum, vel pulmones inflammati, vel impleti sanguine, aut sero,
obstructed, or the lungs inflamed, or filled with blood, or serum,
 aut muco, aut pure, aut aquâ, vel impediti tumoribus vicinâ
or mucus, or pus, or water, or impeded by tumours of the neigh-
 narum partium, aut plurimâ aquâ collectâ in pectore; et
bouring parts, or by a great deal (of) water collected in the chest; and
 similia.
the like.

885. Sæpe, tamen, nulla læsio, aut nervosi generis, aut
Often, however, no lesion, either of the nervous system, or
 partium quæ inserviunt circuitui sanguinis, aut respirationi,
of the parts which subserves to the circulation of the blood, or respiration,
 potest detegi, sed tantum aliquod vitium naturalium functionum
can be detected, but only some disorder of the natural functions
 organorum, vel demum quædam labes, aut generalis suâ
of the organs, or in fine some blemish, either general in its
 naturâ, aut primo inficiens aliquam partem corporis, quamvis
nature, or at first infecting some part of the body, although
 paulatim corrumpens totum corpus; unde quædam functiones neces-
by degrees corrupting the whole system; whence certain functions neces-
 sariæ ad vitam impeditæ, valetudo labefacta ab omni parte,
sary to life (are) impeded, health impaired from every side,
 infirmitas indies augecens, et tandem inevitabilis mors.
infirmitly daily increasing, and at length inevitable death.

886. Provida Natura curavit ut hæc ultima linea rerum
Provident Nature has taken care that this ultimate boundary of things
 non careret suâ formidine; neque consilium obscurum cur
should not want its own terror; nor (is) the design obscure why
 ita effinxerit mortalia pectora, ut commutemus omnino
she should so have formed mortal breasts, that we exchange altogether
 repugnanter hanc vitam, utcunque gravem et ærumnosam, cum
repugnantly this life, however irksome and laborious, with (for)
 aliâ et ignotâ (sc. vitâ). Vero mortales multum erraverunt, et
another and unknown. But mortals have greatly erred, and

læsiones fabricæ partium quæ iis inserviunt, deteguntur, et merito pro causa, quamvis, ut jam expositum est, non proxima causa, mortis habentur; veluti cor vel vas aliquod magnum ruptum, vel erosum, vel obstructum, vel pulmones inflammati, vel sanguine, aut sero, aut muco, aut pure, aut aqua impleti, vel tumoribus vicinarum partium, aut plurima aqua in pectore collecta, impediti; et similia.

885. Sæpe tamen nulla, aut generis nervosi, aut partium quæ sanguinis circuitui aut respirationi inserviunt, detegi potest læsio, sed tantum vitium aliquod organorum functionum natura-

lium, vel demum, labes quædam, aut sua natura generalis, aut partem aliquam corporis primo inficiens, quamvis paulatim totum corpus corrumpens; unde quædam functiones ad vitam necessarias (8, 9) impeditæ, valetudo ab omni parte labefacta, infirmitas indies augecens, et tandem mors inevitabilis.

886. Hæc ultima linea rerum provida Natura curavit, ut sua formidine non careret; neque obscurum consilium cur ita mortalia pectora effinxerit, ut repugnanter omnino hanc vitam, utcunque gravem et ærumnosam, cum aliâ et ignota commutemus. Multum vero erraverunt

male consulerunt sibi, qui intendere terrorem mortis, have badly consulted for themselves, who have augmented the terror of death, persuadentes sibimet semper ferre secum illum gravissimum persuading themselves that it always carries along with that most severe angorem, nec cuiquam unquam esse moriendum sine summo anguish, nor that any one ever is to die without the greatest cruciati. Quod profecto visum est magis verisimile hominibus, torture. Which truly has seemed the more probable to men, eo quod immanes dolores aliquando necant, et moribundi sæpe because very cruel pains sometimes kill, and dying persons often agitantur multum, et anhelant, et gemunt, et convelluntur, are agitated a great deal, and pant, and groan, and are convulsed, non secus ac miseri cruciati gravibus doloribus. in like manner as wretches tortured by grievous pains.

887. Vero nihilominus, et ratio et observatio satis But nevertheless, both reason and observation have sufficiently demonstrarunt nullum sensum moriendi unquam esse, que causas demonstrated that no feeling of dying ever was, and that the causes quæ extinguant vitam, sæpe esse tales quales neque possint which extinguish life, often were such as neither can dare dolorem, neque ullum sensum, que demum, conditionem produce pain, nor any feeling, and in fine, that the condition corporis, plerumque diu antequam moribundus exhalaverit of the body, generally for a long time before that the dying person exhaled animam, esse istiusmodi quæ auferat pariter et dolorem et his life, was of that sort which takes away alike both pain and omnem sensum. all feeling.

888. Mors est placida, imprimis, illis qui absumuntur Death is placid, in the first place, to those who are carried off senili morte. quæ sola potest dici naturalis: by senile death (death of old age), which alone can be called natural: scilicet qui, nullâ vi adhibitâ quæ raperet e as being who, no violence being applied which could hurry them from vivis, tamen desinunt vivere, ut matura poma sponte cadunt the living (life,) nevertheless cease to live, as ripe apples spontaneously fall ex arboribus. Quin et, tantus stupor solet adesse in from the trees. Moreover, so great a stupor is accustomed to be present in his, ut omnis sensus videatur fuisse sopitus et extinctus, these, that all feeling seems to have been lulled and extinct, longe prius quam vita. Neque profecto aut videtur ulla long before (that) life. Nor truly either does there seem any

mortales, et male sibi consulerunt, qui terrorem mortis intendere, sibimet persuadentes gravissimum illum semper secum angorem ferre, nec sine summo cruciati cuiquam unquam esse moriendum. Quod profecto eo magis verisimile hominibus visum est, quod immanes dolores aliquando necant, et moribundi sæpe agitantur multum, et anhelant, et gemunt et convelluntur, non secus ac miseri cruciati gravibus doloribus cruciati.

887. Nihilominus vero et ratio et observatio satis demonstrarunt, nullum unquam esse moriendi sensum, causasque quæ vitam extin-

quant tales sæpe esse, quales neque dolorem neque sensum ullum dare possint, corporisque demum conditionem, diu plerumque antequam animam exhalaverit moribundus, istiusmodi esse, quæ et dolorem et omnem sensum pariter auferat.

888. Illis imprimis qui morte senili, quæ sola naturalis dici potest, absumuntur, placida mors est: scilicet qui nulla adhibitâ vi quæ e vivis raperet, tamen vivere desinunt, ut matura poma ex arboribus sponte cadunt. Quin et tantus in his stupor adesse solet, ut longe prius sensus omnis sopitus et extinctus fuisse vide-

causa doloris adesse in illis, aut ulla indicia doloris
cause of pain to be present in them, or are any indications of pain
 observantur inter moriendum.
observed while dying.

889. Porro, causa lethi eorum quos varii morbi rapiunt
Moreover, the cause of the death of those whom various diseases hurry off
 ætate magis viridi, est fere eadem. Hi morbi,
at an age more green (earlier age), is almost the same. These diseases,
 puta febres que similes, sine dubio donec vires vitæ
for instance fevers and the like, without doubt while the powers of life
 et sensus supersunt integri, facessunt sat que super doloris
and the senses remain entire, cause sufficient and above of pain
 et molestiæ: sed quum jam est ventum ad extrema,
and trouble: but when now (once) it is come to the last (extremities),
 viribus fractis, et omni sensu fere deleto, neque
the strength being broken, and all feeling being almost destroyed, neither
 potest esse vehemens causa doloris, neque si fuerit, (potest)
can there be violent cause of pain, nor if there should be, (can it)
 excitare ullum dolorem, propter conditionem corporis.
excite any pain, on account of the condition of the body.

890. Vero causa mortis sæpe est talis qualis non modo non
But the cause of death often is such as not only does not
 creet dolorem, sed plane sopiat que adimat omnem sensum.
cause pain, but altogether lulls and takes away all feeling.
 Sic sunt multi somniculosi morbi, in quibus ægri nunquam
But there are many drowsy diseases, in which the sick never
 conqueruntur de dolore, vix quidem de molestiâ. Syncope, quoque,
complain of pain, scarcely even of uneasiness. Syncope, also,
 est sæpe continuata morti, neque videtur adesse in alterutrâ
is often continued to death, nor does there seem to be in either
 aut dolor aut ullus sensus. Moriuntur quoque, interdum, somno
either pain or any sensibility. They die also, sometimes, the sleep
 non rupto, qui obdormiverant prorsus sani et vegeti.
not being broken, who had slept altogether sound and lively.

891. Quin et, in iis exemplis in quibus mors est violentissima,
Moreover, in those examples in which death is most violent,
 sive causa ejus fuerit intus vel extrinsecus, summa
whether the cause of it be from within or without, the extreme
 celeritas mortis plane aufert omnem sensum moriendi.
rapidity of death altogether takes away all feeling of dying.

892. Est satis perspicuum multos morbos, que alias causas
It is sufficiently evident that many diseases, and other causes

atur quam vita. Neque profecto in iis aut causa ulla doloris adesse videtur, aut ulla observantur inter moriendum doloris indicia.

889. Porro, eadem fere ratio est eorum lethi quos magis viridi ætate varii morbi rapiunt. Hi morbi, puta febres, similesque, sine dubio donec vires vitæ et sensus integri supersunt, at superque doloris et molestiæ facessunt: sed quum jam ad extrema ventum est, fractis viribus, et deleto fere omni sensu, neque causa doloris vehemens esse potest, neque si fuerit, propter corporis conditionem, dolorem ullum excitare.

890. Causa vero mortis sæpe talis est, qualis

non modo non creet dolorem, sed sensum omnem plane sopiat adimatque. Sic multi sunt morbi somniculosi, in quibus ægri nunquam de dolore, vix quidem de molestiâ, conqueruntur. Syncope quoque sæpe morti continuata est, neque in alterutra aut dolor, aut sensus ullus, adesse videtur. Moriuntur quoque interdum non rupto somno, qui sani prorsus et vegeti obdormiverant.

891. Quin et in iis exemplis in quibus mors violentissima est, sive intus sive extrinsecus ejus causa fuerit, summa mortis celeritas omnem moriendi sensum plane aufert.

892. Satis perspicuum est, multos morbos,

mortis, facessere insignem dolorem, et molestiam, et anxietatem :
of death, cause remarkable pain, and uneasiness, and anxiety :
 veluti si magnâ vis fuerit illata sentienti parti, aut
as when great violence has been done to a sentient part, or
 inflammatio oborta, vel denique, si aliquæ actiones necessariae
inflammation has arisen, or in fine, when some (of the) actions necessary
 ad vitam impeditæ fuerint, quod sæpe fit a merâ debilitate.
to life have been impeded, which often arises from mere debility.

Neque profecto est negandum, multos hoc modo scivisse
Nor indeed is it to be denied, that many in this way have known (per-
 mortem instantem sibimet, et igitur comiter
ceived) death impending upon themselves, and therefore courteously
 valedixisse amicis et astantibus, in fere articulo
have bidden adieu to their friends and the bystanders, in almost the moment
 ipso mortis. Vero est semper tenendum memoriâ, talem
itself of death. But it is always to be kept in mind, that such
 molestum sensum adesse inter vivendum, non inter moriendum,
troublesome feeling was present while living, not during dying,
 que eundem fere desinere, et extingui, priusquam
and that the same generally ceased, and was extinguished, before that
 moribundus efflet animam. Igitur, ad summam ut videtur,
the dying person breathes out his life. Therefore, on the whole as it seems,
 morimur non secus ac linquimur animo, aut corripimur convulsionibus,
we die in like manner as we faint, or are seized with convulsions,
 sine dolore, aut sane ullo sensu, quamvis variæ causæ, quæ
without pain, or indeed any feeling, although various causes, which
 possint cruciare plurimum, sæpe perducant eo.
may torture a great deal, often may conduct (us) thither.

893. Forsitan videbitur, primo aspectu, ridiculum provocare ad
Perhaps it will seem, at first sight, ridiculous to appeal to
 testimonium de tali re, sed multa exempla extiterunt
testimony upon such a subject, but many examples have existed
 hominum reducum in vitam, postquam fuissent pene tam
of persons brought back to life, after that they had been almost so
 exanimis, plurimis et admodum diversis generibus mortis, ut
lifeless, by many and very different kinds of death, that
 neque exhibent ulla indicia vitæ, neque esset credibile
neither did they exhibit any signs of life, nor was it credible (probable)
 ullum sensum fulse superstitem. Vero nulla memoria gravis
that any feeling had been left. But no recollection of severe
 doloris, aut sensus molestiæ, solet esse talibus hominibus,
pain, or of sense of uneasiness, is accustomed to be in such persons,

aliasque mortis causas, insignem dolorem, et molestiam, et anxietatem facessere; veluti si magna vis parti sentienti illata fuerit, aut inflammatio oborta, vel denique, si actiones aliquæ ad vitam necessariæ impeditæ fuerint, quod a mera debilitate sæpe fit. Neque profecto est negandum, multos hoc modo mortem instantem sibimet, et igitur amicis et astantibus in ipso fere mortis articulo comiter valedixisse. Semper vero memoria tenendum est, talem molestum sensum inter vivendum, non inter moriendum, adesse, eundemque fere prius desinere et extingui quam animam mori-

bundus efflet. Ad summam igitur, ut videtur morimur, non secus ac animo linquimur, aut convulsionibus corripimur, sine dolore, aut sane sensu ullo, quamvis eo sæpe perducant variæ causæ quæ plurimum cruciare possint.

893. Ridiculum forsitan primo aspectu videbitur, ad testimonium tali de re provocare; sed multa extiterunt exempla hominum in vitam reducum postquam tam pene exanimis fuissent, plurimis et admodum diversis mortis generibus, ut neque ulla vitæ indicia exhiberent, neque credibile esset sensum ullum superstitem fuisse. Talibus vero hominibus nulla

ne quidem cum fuissent agitati vehementissimis convulsionibus.
not even when they had been agitated by the most violent convulsions.

Igitur, pulchra sententia clari et elegantis auctoris,
Therefore, the beautiful opinion of a celebrated and elegant author,
 rationem initium et finis vivendi, quod ad sensum, esse
that the manner of the beginning and end of living, as to feeling, is
 eandem, videtur minime absurda, neque, quantum recordamur,
the same, seems by no means absurd, nor, so far as we recollect,
 voluptatem necessario conjungi cum altero, neque, quantum novimus,
that pleasure is necessarily conjoined with the one, nor, so far as we know,
 aut possumus conjicere, dolorem cum altero.
or can conjecture, pain with the other.

894. Animâ efflatâ, totum cadaver friget, riget,
The life being breathed out, the entire dead body grows cold, stiffens,
 putrescit, et brevi solvitur in pristina elementa.
putrefies, and quickly is resolved into its former elements.

895. Homo, utcumque soleat conqueri de brevitate
Man, however he may be accustomed to complain of the shortness
 vitæ, comparatus cum aliis animalibus est habendus longævus.
of life, compared with other animals is to be considered long lived.
 Quamvis plurimum hic pendeat a primâ atque congenitâ fabricâ
Although a great deal here depends upon the first and congenital structure
 et constitutione corporis, nondum plene intellectis, mollior compago
and constitution of the body, not yet fully understood, a softer texture
 totiûs corporis rigescens tardius, crescens diu, et
of the whole system becomes rigid more slowly, growing for a long time, and
 perducta sero ad justam formam, quoque potest conferre multum.
brought late to the due shape, also may contribute much.

896. Est verisimile molliores et laxiores homines, modo
It is probable that more soft and more lax persons, provided
 fuerint sani, vivere diutius, et senescere tardius quam firmiores
they be healthy, live longer, and grow old more slowly than firmer
 et validiores; cuius rei plurima exempla exstiterè.
and stronger (persons); of which thing a great many examples have existed
 Vero adhuc erit opus plurimis aliis, priusquam liceat
But still there will be need of a great many others, before that we can
 (sc. nobis) stabilire hanc sententiam. Autem satis constat,
establish this opinion. But it is sufficiently established,
 vetulas, si modo feliciter superaverint ætatem quâ
that old women, provided happily they should get over the age in which
 menses solent desinere, vivere diutius et sanius quam
the menses are accustomed to cease, live longer and more healthily than

solet esse memoria gravis doloris aut molestiæ sensus, ne quidem cum vehementissimis convulsionibus agitati fuissent. Minime igitur absurda videtur pulchra clari et elegantis auctoris sententia, initii et finis vivendi eandem quod ad sensum rationem esse neque cum altero voluptatem quantum recordamur, neque cum altero dolorem quantum novimus, aut conjicere possumus, necessario conjungi.

894. Efflata anima, cadaver friget totum, riget, putrescit, et brevi in pristina elementa solvitur.

895. Homo, utcumque de brevitate vitæ conqueri soleat, cum aliis animalibus comparatus,

longævus habendus est. Quamvis plurimum hic pendeat a primâ atque congenita corporis fabrica et constitutione, nondum plene intellectis, multum quoque conferre potest mollior totiûs corporis compago, tardius rigescens, diu crescens, et sero ad justam formam perducta.

896. Verisimile est, molliores et laxiores homines, modo sani fuerint, quam firmiores et validiores diutius vivere, et tardius senescere; cuius rei plurima exempla exstiterè. Plurimis vero aliis adhuc opus erit, priusquam hanc sententiam stabilire liceat. Satis autem constat, vetulas, si modo ætatem qua menses so-

senes, et frui viribus mentis minus imminutis; eum
old men, and enjoy the powers of the mind less impaired; for
 videtur probabile rationem senilis desipientiæ et mortis
it seems probable that the explanation of senile dotage and death
 esse fere eandem.
is nearly the same.

897. Etiam constat, satis que super, durum et perpetuum
Also it is established, sufficiently and above, that hard and constant
 laborem, quall magna pars hominum quærent victum
labour, by such as a great proportion of persons seek food
 sibi que suis, quamvis tueatur a multis
for themselves and their (families), although it may protect from many
 morbis, festinare senectutem, et ideo inducere præmaturam
diseases, hastens old age, and consequently brings on premature
 mortem. Enim optimates et divites, quamvis debilitati luxu
death. For the nobility and the rich, although debilitated by luxury
 et ignaviâ, et sæpe fracti multis morbis, tamen
and idleness, and often broken down by many diseases, notwithstanding
 senescunt tardius, et igitur vivunt diutius quam inopes artifices
grow old more slowly, and therefore live longer than needy artificers
 atque agricolæ, quibus angustæ res domi satis per-
and peasants, to whom their straitened circumstances had sufficiently per-
 suaserant temperantiam et laborem.
sueded temperance and labour.

898. Spatium vitæ hominis, post diluvium Noachi, videtur
The duration of the life of man, after the deluge of Noah, appears
 fuisse fere idem ubique orbis terrarum. Exempla
to have been nearly the same every where on the globe of the earth. Instances
 hominum qui compleverint centum annos, (sunt) rarissima; et
of persons who have completed a hundred years, are very rare; and
 humana memoria potest vix recordari unum ve alterum
human memory can scarcely remember one or another (two)
 exemplum vitæ protractæ ad centum et quinquaginta annos.
example(s) of life prolonged to a hundred and fifty years.

899. Nonnulli habent prærogativam diuturnitatis vitæ ab naturâ
Some have the prerogative of length of life from nature
 ipsâ, et primâ et congenitâ fabricatione corporis; scilicet
itself, and the original and congenital construction of the body; as being that
 quæ sæpe est hæreditaria, et in quibusdam familiis fere constans.
which often is hereditary, and in certain families almost constant.
 Alii, naturâ debiles et morbos, vel fracti intemperantiâ,
Others, by nature weak and diseased, or broken down by intemperance,

lent desinere feliciter superaverint, diutius et sanius vivere quam senes, et mentis viribus minus imminutis frui: probabile enim videtur, desipientiæ et mortis senilis eandem fere rationem esse (303).

897. Satis superque etiam constat, durum et perpetuum laborem, quali magna pars hominum sibi suisque victum quærent, quamvis a multis morbis tueatur, senectutem festinare, et ideo mortem præmaturam inducere. Optimates enim et divites, quamvis luxu et ignavia debilitati, et multis sæpe morbis fracti, tamen tardius senescunt, et igitur diutius vivunt, quam inopes artifices atque agricolæ, quibus

res angustæ domi temperantiam et laborem satis persuaserant.

898. Vitæ hominis spatium, post diluvium Noachi, idem fere videtur fuisse ubique terrarum orbis. Rarissima hominum exempla qui centum annos compleverint: et vix unum alterumve exemplum humana potest memoria recordari vitæ ad centum et quinquaginta annos protractæ.

899. Nonnulli diuturnitatis vitæ prærogativam ab ipsa natura, et prima et congenita corporis fabricatione, habent; scilicet quæ sæpe hæreditaria est, et in quibusdam familiis fere constans. Alii, natura debiles et morbos, 6

et parum idoneo genere vitæ, sæpe compararunt sibi
and no way suitable mode of life, often have acquired for themselves
 novam et meliorem constitutionem corporis, et interdum protraxerunt
a new and better constitution of body, and sometimes have protracted
 vitam ultra solitos limites, perpetuâ curâ, solitudine, et tem-
life beyond the usual limits, by incessant care, solicitude, and tem-
 perantiâ: cujus rei Cornaro exstat exemplum et
perance: of which thing Cornaro is a signal instance and
 documentum.
document.

900. Mens quoque læta, et bene recta, et leniter excitata,
The mind also cheerful, and well governed, and gently excited,
 modicis et gratis affectibus, lacerata neque intensioribus
by moderate and agreeable affections, distracted neither by the more intense
 studiis, neque gravibus curis, neque miseris tumultibus, videtur
studies, nor oppressive cares, nor wretched tumults, seems
 conferre haud parum ad diuturnitatem vitæ.
to conduce not a little to length of life.

901. Quamvis sit non credible remedium unquam repertum iri
Although it be not credible that a remedy ever will be found out
 quod revocaverit juventutem præteritam, tamen videtur satis
which will recall youth (when) passed by, notwithstanding it seems very
 verisimile, quædam remedia posse afferre moram senectuti, que
probable, that some remedies may bring delay (to) old age, and
 sublevare mala ejus, et reddere vitam suavorem, et forsan
relieve the disorders of it, and render life more agreeable, and perhaps
 protrahere nonnihil; scilicet, victum satis nutrientem, et facilem
prolong (it) somewhat; that is, food tolerably nutritious, and easy
 concoctu, modicam exercitationem, aliquantum generosi potus, et
to be digested, moderate exercise, some little of generous drink, and
 nonnulla remedia quæ laxant corpus, imprimis calidum aëra, et aliquando
some remedies which relax the body, especially warm air, and sometimes
 balneum. Victus et genus vitæ hujusmodi, nutrit corpus, et
the bath. A diet and mode of life of this sort, nourishes the body, and
 non onerat, grate excitat que alit nervosum genus, juvat
does not burthen it, gratefully excites and supports the nervous system, assists
 motum sanguinis jam languentem, promovet secretiones, et reddit
the motion of the blood when languid, promotes the secretions, and renders
 omnes solidas partes molliores et mobiliiores et magis sentientes.
all the solid parts softer both more mobile and more sentient.

902. Statura quoque hominum, non secus ac diuturnitas vitæ
The stature also of men, in like manner as the length of life

vel intemperantia, et vitæ genere parum idoneo, fracti, perpetua cura, et solitudine, et temperantia, sæpe novam et meliorem constitutionem corporis sibi compararunt, et vitam ultra solitos limites interdum protraxerunt: cujus rei exemplum Cornaro exemplum et documentum exstat.

900. Mens quoque læta, et bene recta, et modicis et gratis affectibus leniter excitata, neque studiis intensioribus, neque gravibus curis, neque miseria tumultibus, lacerata, ad vitam diuturnitatem haud parum conferre videtur.

901. Quamvis non sit credible remedium unquam repertum iri quod juventutem præteritam

revocaverit, tamen satis verisimile videtur, quædam remedia senectuti moram afferre posse, ejusque mala sublevare, et vitam suavorem reddere, et nonnihil forsan protrahere; victum scilicet satis nutrientem et concoctu facilem, exercitationem modicam, aliquantum potus generosi, et remedia nonnulla quæ laxant corpus, aera imprimis calidum, et balneum aliquando. Hujusmodi victus et vitæ genus nutrit corpus, et non onerat, genus nervosum grate excitat alique, sanguinis motum jam languentem juvat, secretiones promovet, et omnes solidas partes molliores, et mobiliiores, et magis sentientes, reddit.

videtur semper et ubique fuisse fere eadem, nisi in nonnullis
seems always and every where to have been nearly the same, except in some
 frigidissimis regionibus quas aliud et brevius genus
very cold climates which another (different) and shorter race
 hominum habitat. Adhuc parum constat de gigantibus Patagoniæ;
of men inhabits. As yet it is not determined concerning the giants of Patagonia;
 vero est non dubium, quosdam (homines) tantum excedere solitam
but it is not doubtful, that some individuals so far exceed the ordinary
 magnitudinem hominum, ut appellentur non immerito gigantes;
size of men, that they may be called not undeservedly giants;
 vero hi raro observantur bene formati, et sæpe debiles et
but these seldom are observed well formed, and often weak and
 hebetes et parum apti ad varias exercitationes corporis et
dull and no way fitted for the various exercises of the body and
 labores. Quin et potest demonstrari ex mathematicis principiis
labours. Moreover it may be demonstrated from mathematical principles
 gigantem, qui multum excederet solitam staturam hominum,
that a giant, who greatly exceeded the ordinary stature of men,
 dummodo esset factus ex eadem materiâ ac alii homines,
provided he were made of the same matter as other men,
 fore penitus inhabilem, que tracturum (esse) ægre
would be wholly unwieldy, and would drag with difficulty
 proprium corpus.
his own body.

903. Nani quoque spectantur aliquando, qui attigerint vix
Dwarfs also are seen sometimes, who have reached scarcely
 dimidiam vel sane tertiam partem justæ magnitudinis. Autem
the half or indeed the third part of the due size. But
 hi fere sunt deformes, sæpe gibbosi, aut instructi ingente
these mostly are deformed, often humped, or furnished with a large
 capite, raro fœcundi, nunquam daturi (sint) gentem nanorum.
head, rarely fruitful, never would produce a nation of dwarfs.
 Aliquis morbus videtur plerumque fuisse causa, cur tales
Some disease seems for the most part to have been the cause, why such
 nani vel non crescerent solito more, vel forsitan decreverent
dwarfs either did not grow in the usual way, or perhaps decreased
 postquam crevissent aliquantum.
after that they had grown a little.

904. Tamen statura variat nonnihil apud diversas gentes, et
However the stature varies somewhat among different nations, and
 adhuc magis in singulis hominibus; ita ut differentia pedis et
still more in individual men; so that a difference of a foot and

902. Statura quoque hominum, non secus ac vita diuturnitas, eandem fere videtur semper et ubique fuisse, nisi in regionibus nonnullis frigidissimis, quas aliud et brevius genus hominum habitat. Parum adhuc constat de gigantibus Patagoniæ; non dubium vero est, quosdam solitam hominum magnitudinem tantum excedere, ut non immerito Gigantes appellentur; hi vero raro bene formati observantur, et sæpe debiles, et hebetes, et ad varias corporis exercitationes et labores parum apti. Quin et ex principiis mathematicis demonstrari potest, gigantem, qui solitam hominum staturam multum excederet, dummodo ex eadem factus

casset materiâ ac alii homines, penitus inhabilem fore, propriumque corpus ægre tracturum.
 903. Nani quoque aliquando spectantur, qui vix dimidiam, vel sane tertiam partem, justæ magnitudinis attigerint. Hi autem deformes fere sunt, gibbosi sæpe, aut ingente capite instructi, raro fœcundi, nunquam gentem nanorum daturi. Morbus aliquis plerumque causa fuisse videtur, cur tales nani vel non crescerent more solito, vel forsitan decreverent, postquam aliquantum crevissent.

904. Variat tamen nonnihil statura apud diversas gentes, et magis adhuc in singulis hominibus; ita ut differentia pedis et amplius

amplius observetur inter bene formatos homines; neque sane
more may be observed between well formed men; nor indeed
 vis et robur corporis pendent multum a magnitudine ejus.
do power and strength of body depend much upon the size of it.
 Proceritas observatur fere perpetua in quibusdam familiis; igitur
Tallness is observed almost constant in certain families; therefore
 oportet sæpe pendere a primâ et hæreditariâ
it behoves (must) often (that it) depend upon the first and hereditary
 fabricâ et constitutione corporis. Viri in universum sunt haud
structure and constitution of the body. Men in general are not
 parum proceriores quam fœminæ et habent longe diversam
a little (much) taller than women and have a far different
 formam. Cætera animalia crescunt vel minuuntur multum
shape. Other animals increase or are diminished a great deal
 paucis generationibus, prout cibus abundaverit vel defecerit.
in a few generations, according as the food shall abound or be deficient.
 Homo quoque experitur nonnihil hujusmodi, quamvis haud tantum
Man also experiences something of this sort, although not so much
 ac belluæ.
as brutes.

905. Opinio fortasse primo aspectu videbitur absurda, istas
The opinion perhaps at first sight will appear absurd, that those

mutationes, quas corpus subit variis ætatibus, esse causas
changes, which the body undergoes at different ages, are the causes
 morborum, præsertim quum fere omnia animalia, et etiam multi
of diseases, especially as almost all animals, and even many
 homines vivant sani omni tempore, et alia sanitas
men live healthy the whole time, and a different health
 non secus ac alia facies debeat esse infanti, alia
in like manner as a different face ought to be to the infant, different
 viro, alia seni.
to the man, different to the old man.

906. Verum enimvero est non eo minus certum plurimos
But truly it is not the less certain that very many

morbos infestare certa tempora vitæ, que eos pendere a
diseases infest certain periods of life, and that they depend upon
 statu corporis, tum deflectentis nonnihil a perfectissimâ sanitate,
the state of the body, then deviating somewhat from the most perfect health,
 et facti proclivis ad quosdam morbos; ita ut, dum anni
and become prone to certain diseases; so that, while the years
 labuntur et corpus mutatur aliâ atque aliâ ratione, proclivitate ad
glide on and the body is changed in different ways, the tendency to

inter bene formatos homines observetur: neque sane vis et robur corporis a magnitudine ejus multum pendent. Proceritas in quibusdam familiis fere perpetua observatur; sæpe igitur pendere oportet a prima et hæreditaria corporis fabrica et constitutione. Viri in universum quam fœminæ haud parum proceriores sunt, et longe diversam formam dabant. Cætera animalia paucis generationibus crescunt vel minuuntur multum, prout cibus abundaverit vel defecerit. Homo quoque nonnihil hujusmodi experitur, quamvis haud tantum ac belluæ.

bitur opinio, mutationes istas, quas variis ætatibus corpus subit, morborum causas esse, præsertim quum animalia fere omnia, et multi etiam homines, sani omni tempore vivant, et alia sanitas infanti, non secus ac alia facies, alia viro, alia seni, esse debeat.

906. Verum enimvero non eo minus certum est, plurimos morbos certa tantum vitæ tempora infestare (51), eosque a statu corporis, tum nonnihil a perfectissima sanitate deflectentis, et ad quosdam morbos proclivis facti, pendere: ita ut, dum anni labuntur, et corpus alia atque alia ratione mutatur, proclivitate ad quosdam morbos correctæ vel penitus deletæ

quosdam morbos correctâ, vel penitus deletâ, aut vivatur
certain diseases being corrected, or entirely destroyed, either it is lived
 sane (impersonal) aut novi morbi et contrarii prioribus accedant.
healthily or new diseases and contrary to the former come on.

907. Foret difficillimum indicare omnes res quæ
It would be very difficult to point out all the things which
 reddant corpus opportunum tot diversis morbis variis
render the body liable to so many different diseases at the various
 temporibus vitæ. Fuerit sat memorasse istas mutationes,
periods of life. It will be sufficient to have related that those changes,
 que morbos igitur qui profluunt ex iis (sc. mutationibus) referri non
and diseases therefore which proceed from them were referred not
 inepte ad certa capita; scilicet ad statum universæ
improperly to certain heads; that is to the condition of the whole
 compagis solidarum partium mollioris, aut firmioris justo,
frame of the solid parts (being) softer, or firmer than proper,
 ad statum nervosi generis sentientis nimis, vel nimis parum, aut
to the state of the nervous system feeling too much, or too little, or
 mobilis, debilis aut validi, ad statum circuitûs sanguinis liberi
mobile, weak or strong, to the state of the circulation of the blood free
 aut impediti, languidi, aut vehementis, æquabilis, aut abnormis, ad
or impeded, languid, or vehement, equable, or irregular, to
 statum secretionum et excretionum copiosarum, vel deficientium
the state of the secretions and excretions (being) more copious, or deficient
 et impeditarum, et denique ad statum quarundam partium quæ
and impeded, and lastly to the state of certain parts which
 evolvuntur certo tempore, et agunt aliquamdiu et tandem
are evolved at a certain time, and act for some time and at length
 desinunt agere. Conditio humorum quoque videtur conferre
cease to act. The condition of the fluids also seems to contribute
 nonnihil ad varios morbos singularum ætatum, qui (humores)
something to the various diseases of the individual ages, which
 variant multum copiâ, crassitudine, acrimoniâ.
vary greatly in quantity, thickness, acrimony.

908. Sic infantes, quibus sunt (pro habent) omnes solidæ partes mollissimæ
Thus infants, who have all the solid parts very soft,
 et debiles, et nervosum genus valde irritabile, et distributio
and weak, and the nervous system very irritable, and the distribution
 sanguinis liberrima, et secretiones et excretiones copiosissimæ, sæpe fiunt
of the blood being free, and the secretions and excretions very copious, often become
 deformes, sæpe plectuntur herniâ variî generis, aut prolapsu,
deformed, often are attacked with hernia of various kinds, or prolapsus,

aut sane vivatur, aut novi accedant, et prioribus contrarii, morbi.

907. Difficillimum foret indicare res omnes quæ variis vitæ temporibus corpus tot diversis morbis opportunum reddant. Sat fuerit memorasse, istas mutationes, morbosque igitur qui ex iis profluunt, ad certa capita non inepte referri: scilicet ad statum universæ compagis (75, 94) partium solidarum, mollioris, aut firmioris justo, ad statum generis nervosi (109, et seqq.) nimis, vel nimis parum sentientis aut mobilis, debilis aut validi (370, et seqq.), ad statum circuitûs sanguinis, liberi aut impediti, languidi aut vehementis, æqua-

bilis aut abnormis (443, et seqq.), ad statum secretionum et excretionum, copiosarum, vel deficientium et impeditarum (707, et seqq.), et denique ad statum quarundam partium quæ certo tempore evolvuntur, et agunt aliquamdiu, et tandem desinunt agere (757, et seqq.) Nonnihil quoque ad varios singularum ætatum morbos conferre videtur conditio humorum, qui multum variant copia, crassitudine, acrimonia (62, et seqq.)

908. Sic infantes, quibus omnes solidæ partes mollissimæ et debiles snut, et genus nervosum valde irritabile, et liberrima sanguinis distributio, et secretiones et excretiones copio-

et strumis, et rachitide, et sæpe afficiuntur convulsionibus aut
and scrofula, and rickets, and often are affected with convulsions or
 febriculis a levisimis causis. Vero iidem raro laborant
light fevers from the slightest causes. But the same seldom suffer
 gravi febre, aut valida inflammatione, aut profluvii sanguinis, aut
from severe fever, or strong inflammation, or profluvia of blood, or
 phthisi, aut paralyti, aut podagrâ, aut rheumatismo, aut hydrope, nisi
phthisis, or paralysis, or gout, or rheumatism, or dropsy, except
 capitis, qui sæpe pendet vel a strumosa constitutione
of the head, which often depends either upon a strumous constitution
 corporis vel a nimio fluxu sanguinis versus caput.
of body or upon an excessive flow of blood towards the head.

909. Infantes quoque ferunt jacturam sanguinis male, tenuiorum
Infants also bear the loss of blood badly, of the thinner
 humorum bene; etiam tolerant inediam male; subito marcescunt
fluids well; also they bear fasting badly; they suddenly grow lean
 dum ægrotant, sed cito convalescunt, et iterum pinguescunt.
whilst they are sick, but quickly become convalescent, and again grow fat.

Facile afficiuntur, sopiuntur, excitantur, purgantur, plerisque,
They easily are affected, are lulled, are excited, are purged, by most,
 vel levisimis medicamentis. Autem renixus teneris corporibus
even the slightest medicines. But the resistance by the tender bodies
 eorum, contra morbos, (est) mirus, ita ut sæpe convalescant
of them, against diseases, (is) wonderful, so that often they become convalescent
 præter omnem spem, multo tenaciores vitæ quam adulti homines.
beyond all hope, much more tenacious of life than adult persons.

910. Adolescentes aut juvenes, aut viri firmiores et validiores quam
Young men or youths, or men firmer and stronger than
 infantes, et minus irritabiles, plerumque facti immunes a
infants, and less irritable, generally become free from
 infantilibus morbis, sæpe fiunt opportuni aliis. Scilicet quum
infantile diseases, often become liable to others. Because when
 desinunt crescere, fiunt nimis pleni sanguine qui fere congeritur,
they cease to grow, they become too full of blood which generally is congested,
 pro rata parte magis in arteriis quam in venis, et sæpe
in proportion more in the arteries than in the veins, and often
 sponte erumpit e partibus quæ recusant distendi
spontaneously breaks forth from parts which refuse to be distended
 amplius, et primo e naribus, postea e pulmone, sæpe non
farther, and first from the nostrils, afterwards from the lungs, often not
 sine magno periculo phthiseos. Juvenes quoque, partim ob
without great danger of phthisis. Youths also, partly because of

sisimæ, sæpe deformes fiunt, sæpe hernia varii
 generis, aut prolapsu, et strumis, et rachitide,
 plectuntur, et sæpe convulsionibus aut febriculis
 a levisimis causis afficiuntur. Iidem
 vero, gravi febre, aut valida inflammatione,
 aut sanguinis profluvii, aut phthisi, aut paralyti,
 aut podagra, aut rheumatismo, aut hydrope,
 nisi capitis, qui sæpe vel a strumosa
 corporis constitutione vel a nimio sanguinis
 caput versus fluxu pendet, raro laborant.

909. Infantes quoque sanguinis jacturam
 male ferunt, tenuiorum humorum bene; male
 etiam inediam tolerant; marcescunt subito
 dum ægrotant, sed cito convalescunt, et pin-

guescunt iterum. Medicamentis plerisque, vel
 levisimis, facile afficiuntur, sopiuntur, exci-
 tantur, purgantur. Mirus autem teneris eo-
 rum corporibus contra morbos renixus, ita ut
 sæpe præter omnem spem convalescant, vitæ
 quam adulti homines multo tenaciores.

910. Adolescentes, aut juvenes, aut viri, fir-
 miores et validiores quam infantes, et minus
 irritabiles, a morbis infantilibus plerumque
 immunes facti, aliis sæpe opportuni fiunt.
 Scilicet quum desinunt crescere, sanguine
 nimis pleni fiunt, qui fere in arteriis (444,
 445) pro rata parte magis quam in venis con-
 geditur, et sæpe e partibus quæ amplius dis-

hanc nimiam abundantiam sanguinis, partim ob auctum vigorem
this excessive abundance of blood, partly because of the increased vigour
 universi corporis, fiunt obnoxii gravissimis febribus et
of the whole body, become subject to very severe fevers and
 inflammationibus. Præterea puellæ acquirunt singularem mobilitatem
inflammations. Besides girls acquire a peculiar mobility
 constitutionis, prius vix observandam, et fortasse pendentem
of constitution, at first scarcely to be observed, and perhaps depending
 quodammodo a statu genitalium organorum quâ fiunt
in some degree upon the condition of the genital organs by which they become
 proclives ad hysteriam.
disposed to hysteria.

911. Optima et firmissima valetudo plerumque contingit virili
The best and firmest health for the most part belongs to virile
 ætati: nimirum quum omnes partes corporis jam adeptæ sint
age: namely when all the parts of the body now have acquired
 (verb. deponens) justam proportionem et formam et vigorem, neque
their due proportion and form and vigour, nor
 nimia rigiditas vel universæ compaginis vel quarundam
has excessive rigidity either of the whole frame or of some
 (sc. partium) præ aliis partibus accesserit, neque nervosa
(parts) before other parts come on, nor does the nervous
 vis deficiat, neque motus humorum languescat; et sic viri
power fail, nor the motion of the fluids grow languid; and thus men
 fere immunes a morbis infantiae aut juventutis nondum
mostly free from the diseases of infancy or of youth have not yet
 facti sint obnoxii morbis senii.
become liable to the diseases of old age.

912. Autem nullus status humani corporis, strictius sic dictus,
But no status of the human body, more strictly so called,
 profecto existit; enim quamprimum attigerit suam perfectionem,
truly exists; for as soon as it has reached its perfection,
 statim, quamvis sæpe lente, dilabitur, et sane per easdem
it immediately, although often slowly, decays, and truly through the same
 causas, quæ prius perduxerant id (sc. corpus) ad suam perfectionem.
causes, which first had brought it to its perfection.

913. Partibus quæ comprimuntur maxime primo rigescentibus,
The parts which are compressed most of all first growing rigid,
 arteriæ brevi fiunt nimis duræ et validæ, et paulatim
the arteries soon become too hard and strong, and by degrees
 coarctantur, et tandem æquant vel superant vim et firmitatem
are constricted, and at length equal or exceed the power and the strength

tendi recusant (861) sponte erumpit, et primo e naribus, postea e pulmone, non sine maguo sæpe phthiseos periculo. Juvenes quoque, partim ob hanc nimiam sanguinis abundantiam, partim ob auctum universi corporis vigorem, gravissimis febribus et inflammationibus obnoxii fiunt. Puellæ præterea, singularem constitutionis mobilitatem, prius vix observandam, et fortasse a statu genitalium organorum quodammodo pendentem, acquirunt, qua ad hysteriam proclives fiunt.

911. Virili ætati optima plerumque et firmissima valetudo contingit: nimirum quum omnes corporis partes justam proportionem, et formam, et vigorem, jam adeptæ sint, neque

nimia vel universæ compaginis vel quarundam præ aliis partibus rigiditas accesserit, neque vis nervosa deficiat, neque motus humorum languescat; et sic viri a morbis infantiae aut juventutis fere immunes, senii morbis nondum facti sint obnoxii.

912. Status autem corporis humani, strictius sic dictus, nullus profecto existit: quamprimum enim suam perfectionem attigerit, statim, quamvis sæpe lente, dilabitur, et sane per easdem causas, quæ id prius ad suam perfectionem perduxerant (12, 19).

913. Rigescunt primo partibus quæ maxime comprimuntur, arteriæ brevi nimis duræ et validæ fiunt, et coarctantur paulatim, et vim

venarum quo fit ut plus sanguinis justo congestur in venis, præsertim in iis partibus in quibus movetur languidius, et venæ quarum carent valvis, et habent parum auxilii a motu musculorum. Sic provento ætate plurimus sanguis sæpe congeritur in abdomine et in capite, unde hæmorrhoids, et obstructions viscerum, et aliquando hydrops, et paralysis, et apoplexia.

914. Mala hujusmodi, pendentia a statu venarum et arteriarum accidunt frequentius eo quod multi senes fiunt plus pleni sanguine justo, scilicet qui sæpe bene valent, et concoquant bene, et indulgent lautioribus epulis, et exercent corpora parum, et habent parcam exhalationem per cutem; plurima vasa et foramina cujus nimirum fere concluduntur.

915. Vero citra nimiam abundantiam sanguinis ve abnormes congestiones aut distributiones ejus senes fiunt obnoxii paralyti, et hydropi varii generis, et obstructionibus, et carcinomati nervosa vi deficiente, et motu sanguinis languente: ob easdem causas quoque visus obtunditur, auditus hebescit, et demum omnes sensus fatiscunt.

916. Porro plerique senes plectuntur innumeris vitis organorum quæ inserviunt urinæ diu forsan sine gravi periculo

et firmitatem venarum tandem æquant vel superant (444, 445), quo fit ut plus justo sanguinis in venis congeratur, præsertim in iis partibus in quibus languidius movetur, et quarum venæ valvis carent, et parum auxilii habent a motu musculorum. Sic in abdomine (420) et in capite (421), provento ætate, plurimus sanguis sæpe congeritur, unde hæmorrhoids, et viscerum obstructions, et hydrops aliquando, et paralysis, et apoplexia.

914. Hujusmodi mala, a statu venarum et arteriarum pendentia, eo frequentius accidunt, quod multi senes sanguine plus justo pleni fiunt, scilicet qui sæpe bene valent, et bene

concoquant, et epulis lautioribus indulgent, et corpora parum exercent, et parcam per cutem exhalationem habent; nimirum cujus plurima vasa et foramina fere concluduntur.

915. Citra vero nimiam sanguinis abundantiam ejusve congestiones aut distributiones abnormes, deficiente vi nervosa, et languente sanguinis motu, paralyti, et hydropi varii generis, et obstructionibus, et carcinomati (751, et seqq.) senes obnoxii fiunt: ob easdem quoque causas, visus obtunditur, auditus hebescit, et omnes demum sensus fatiscunt.

916. Porro, innumeris vitis plerique senes plectuntur organorum quæ urinæ inserviunt

aut incommodo; vero iidem morbi indies ingravescentes, et
 or inconvenience; but the same diseases daily increasing, and
 fere immedicabiles, tandem non carebunt suo periculo.
 almost irremediable, at length will not want their own danger.

917. Demum senes sunt magis opportuni aliis morbis quam
 Again old people are more liable to other diseases than
 juvenes, veluti podagræ, calculo, &c. ratio quorum est magis
 young persons, as to gout, calculus, &c. the reason of which is more
 obscura: quippe qui (sc. morbi) sint non proprii senibus qui
 obscure: as being what are not peculiar to old persons which
 (sc. morbi) pendent multum a primâ et congenitâ fabricatione
 depend much upon the first and congenital conformation
 corporis, et qui sæpe jungantur cum aliis morbis, præsertim
 of the body, and which often are joined with other diseases, especially
 ventriculi.
 of the stomach.

918. Denique est satis verisimile quodvis vitium latens
 Lastly it is sufficiently probable that some fault lying hid
 diu, neque fortasse suspectum, tum demum proditurum (esse)
 a long time, nor perhaps suspected, then at length will betray
 se manifeste quum, omnibus viribus deficientibus, omnes functiones
 itself openly when, all the powers failing, all the functions
 impediuntur, et malum præcipue incumbat in partes jam debiles
 are impeded, and the disorder especially presses upon the parts now weak
 et morbosas. Hæc videtur esse ratio cur multi hæreditarii
 and diseased. This seems to be the reason why many hereditary
 morbi, raro observandæ, primâ vel etiam consistente ætate,
 diseases, seldom to be observed, at the first or even advanced age,
 demum erumpant senectute.
 at length break out in old age.

CAP. XXIII.

CHAP. XXIII.

De Varietatibus Constitutionum.
 Of the Varieties of Constitutions.

919. Sanitas est non prorsus eadem omnibus; enim sua constitutio
 Health is not exactly the same to all; for their own constitution
 non secus ac sua facies aut forma corporis constat
 in like manner as their peculiar face or form of body belongs

(737, et seqq.), diu forsân sine gravi periculo aut incommodo: iidem vero morbi indies ingravescentes, et fere immedicabiles, suo tandem periculo non carebunt.

917. Aliis demum morbis senes magis quam juvenes opportuni sunt, veluti podagræ, calculo, &c. quorum ratio magis obscura est: quippe qui non senibus proprii sint, qui multum pendent a prima et congenita corporis fabricatione, et qui sæpe jungantur cum aliis morbis, præsertim ventriculi.

918. Denique, satis verisimile est vitium quodvis diu lateus, neque fortasse suspectum

(49), tum demum se manifeste proditurum, quum, viribus omnibus deficientibus, omnes functiones impediuntur, et malum in partes jam debiles et morbosas præcipue incumbat (263). Hæc videtur esse ratio cur multi morbi hæreditarii, prima ætate, vel etiam consistente, raro observandæ, senectute demum erumpant.

CAP. XXIII.—De Constitutionum Varietatibus.

919. SANITAS non omnibus prorsus eadem est; sua enim singulis hominibus constitutio constat, non secus ac sua facies, aut forma corporis. Hujusmodi varietates medici atten-

singulis hominibus. Varietates hujusmodi jure vindicant
to individual persons. Varieties of this sort properly claim
 sibi attentionem medici, quippe quæ sæpe observentur
to themselves the attention of the physician, as being what often are observed
 tantæ et tales inter homines ejusdem ætatis et regionis,
so great and such between men of the same age and country,
 utentes eodem cibo et genere vitæ, ut alii plectantur aliis
using the same food and kind of life, that some are attacked by other
 morbis, et quod prosit aliis, valde noceat aliis, neque
(dissimilar) diseases, and what benefits some, greatly hurts others, nor
 sane eadem remedia, aut diæta, aut genus vitæ convenient
truly (do) the same remedies, or diet, or kind of life agree with (suit)
 omnibus. Igitur erit res haud levis momenti novisse
all. Therefore it will be a thing of no small moment to know
 penitus constitutionem corporis uniûscujusque ægroti.
thoroughly the constitution of the body of each individual patient.

920. Vero experientia sola docet notitiam hujusmodi, quædam
But experience alone teaches a knowledge of this sort, certain
 differentiæ vero, quales frequentius occurrunt, observatæ sunt etiam
differences truly, such as more frequently occur, have been observed even
 ab antiquissimis temporibus, et insignitæ certis nominibus.
from the most ancient periods, and designated by certain names.
 Hæ varietates dicuntur temperamenta, (tanquam ducerent originem
These varieties are called temperaments, (as if they drew their origin
 a mixturâ et quasi temperatione variorum elementorum quæ
from the mixture and as it were tempering of the various elements which
 insunt in humano corpore;) que quatuor eorum vulgo
exist in the human body;) and four of them commonly
 numerantur primaria temperamenta; scilicet sanguineum, melancholicum,
are reckoned primary temperaments; that is, the sanguineous, the melancholic,
 cholericum, et phlegmaticum. Parum constat de ratione
the choleric, and the phlegmatic. It is not very clear concerning the reason
 nominum; nec multum refert quo vocabulo utamur ad
of the names; nor does it much signify what word we use to
 exprimendam quamlibet rem, dummodo id vocabulum definiatur
express any thing, provided that word be defined
 bene; et certe foret nefas mutare nomina quæ sunt
well; and certainly it would be wrong to change names which are
 omnibus in ore et bene intellecta.
to all in the mouth (in the mouths of all) and clearly understood.

921. Revera medici omni tempore hallucinati sunt plurimum
Truly physicians at every period have mistaken very much

tionem jure sibi vindicant, quippe quæ tantæ et tales sæpe observentur inter homines ejusdem ætatis, et regionis, eodem cibo et vitæ genere utentes, ut alii aliis plectantur morbis, et quod aliis prosit, aliis valde noceat, neque sane eadem remedia, aut diæta, aut vitæ genus, omnibus conveniant. Res igitur haud levis momenti erit uniûscujusque ægroti constitutionem corporis penitus novisse.

920. Hujusmodi vero notitiam sola experientia docet; quædam vero differentiæ, quales frequentius occurrunt, ab antiquissimis etiam temporibus observatæ sunt, et certis nominibus insignitæ. Hæ varietates temperamenta dicun-

tur (tanquam a mixtura, et quasi temperatione, variorum quæ in humano corpore insunt elementorum, originem ducerent); eorumque quatuor primaria temperamenta vulgo numerantur; sanguineum, scilicet, melancholicum, cholericum, et phlegmaticum. De ratione nominum parum constat; nec multum refert quo vocabulo utamur ad rem quamlibet exprimendam, dummodo id vocabulum bene definiatur; et nefas certe foret nomina mutare, quæ omnibus in ore sunt, et bene intellecta.

921. Plurimum revera hallucinati sunt medici omni tempore, qui temperamentorum varietatum conati sunt rationem reddere; et num-

qui conati sunt reddere rationem varietatum
 who have endeavoured to render an account (to account for) of the varieties
 temperamentorum; et (qui) retulerunt unumquodque ad certum
 of temperaments; and referred every one to a certain
 humorem vel elementum abundans plus justo in corpore veluti
 humour or element abounding more than proper in the body as
 aquam, sanguinem, bilem, atram bilem, gluten, terram. Neque
 water, blood, bile, black bile, (atrabile), gluten, earth. Nor
 veteres soli observarunt bene, et descripserunt fideliter,
 have the ancients alone observed well, and described faithfully,
 quamvis ratiocinati sint male de iisdem rebus. Erit quoddam
 although they have reasoned badly from the same things. It will be something
 saltem novisse istas descriptiones et observationes, quatenus
 at least to know those descriptions and observations, so far as
 spectent ad medicum usum, utcumque obscura ratio earum
 they look (serve) to medical practice, however obscure the reason of them
 videatur.
 may seem.

922. Sanguineum temperamentum dignoscitur pleniore constitutione
The sanguineous temperament is distinguished by a fuller constitution
 corporis, molliore compagine, delicata, tenui, molli calidâ cute,
 of body, a softer frame, a delicate, thin, soft, warm skin,
 magnis, conspicuis, cæruleis venis, eximio colore vultus, capillis
 large, conspicuous, blue veins, an excellent colour of countenance, by the hair
 sæpe rufis aut flavis, aliquando nonnihil fuscis. Homines præditi
 being often red or yellow, sometimes somewhat brown. Persons endowed
 tali constitutione, observantur præter solitum sentientes et irritabiles,
 with such a constitution, are observed unusually sentient and irritable,
 et habent pulsus frequentiores solito, et motum sanguinis
 and have the pulse more frequent than ordinary, and the motion of the blood
 liberrimum, et secretiones et excretiones fere copiosas, raro
 very free, and the secretions and excretions generally copious, seldom
 obstructas, et animum plerumque lætum et hilarem, aliquando
 obstructed, and the mind for the most part joyful and cheerful, sometimes
 levem; nam animi non secus ac varietates corporis sæpe pendent
 light; even the spirits in like manner as the changes of the body often depend
 a temperamento.
 upon the temperament.

923. Hoc temperamentum, præ aliis, est obnoxium nimie
This temperament, more than the others, is liable to too great
 abundantie et vehementi motui sanguinis, febribus, que morbis
 abundance and vehement motion of the blood, to fevers, and diseases

quodque retulerunt ad certum humorem vel elementum plus justo in corpore abundans, veluti aquam, sanguinem, bilem, atram bilem, gluten, terram. Neque soli veteres observarunt bene, et descripserunt fideliter, quamvis male de iisdem rebus ratiocinati sint. Erit quoddam saltem, quatenus ad medicum usum spectent, utcumque obscura ratio earum videatur.

922. *Temperamentum sanguineum dignoscitur constitutione corporis pleniore, compagine molliore, cute delicata, tenui, molli, calida, venis magnis, conspicuis, cæruleis, eximio*

vultus colore, capillis sæpe rufis aut flavis, aliquando nonnihil fuscis. Homines tali constitutione præditi, præter solitum sentientes et irritabiles observantur, et pulsus habent solito frequentiores, et sanguinis motum liberrimum, et secretiones et excretiones fere copiosas, raro obstructas, et animum plerumque lætum et hilarem, aliquando levem: nam animi non secus ac corporis varietates a temperamento sæpe pendent.

923. *Hoc temperamentum, præ aliis, sanguinis nimie abundantie et vehementi motui, febribus, morbisque inflammationem habentibus,*

habentibus inflammationem, rheumatismo, anginae, &c. et morbis nervosi
having inflammation, to rheumatism, angina, &c. and diseases of the nervous
generis imprimis hysteriæ. Igitur temperantia in victu et potu,
system especially hysteria. Therefore temperance in food and drink,
 et crebra exercitatio conveniunt huic, aliquando et exinanitiones
and frequent exercise suit it, sometimes also evacuations
 quas solet tolerare bene.
which it is accustomed to bear well.

924. Melancholicum temperamentum videtur fere contrarium huic
The melancholic temperament seems almost the opposite to this
 notatum compagine firmiore, sæpe macrà; cute crassâ, fuscâ,
denoted by the frame being firmer, often lean; the skin thick, dark,
 hirsuta, venis magnis, crinibus, et supercillis et oculis nigris;
hairy, the veins large, the hair, and eyebrows and eyes black;
 colore vultûs atro. Præditi hoc temperamento fere
the colour of the countenance black. Those endowed with this temperament generally
 habent pulsus tardos, et motum sanguinis languidiorem,
have the pulse slow, and the motion of the blood more languid,
 sanguinem ipsum, ut fertur, crassiorem solito, et secretiones
the blood itself, as it is said, thicker than usual, and the secretions
 et excretiones parcas, aliquando deficientes, que nervosum genus
and excretions scanty, sometimes deficient, and the nervous system
 parum sentiens aut mobile, et animum gravem, sæpe tristem,
little sentient or irritable, and the mind serious, often sad,
 meditabundum, haud commovendum facile, quo semel commotus est
meditative, not to be disturbed easily, when once it has been roused
 tenacissimum affectûs, indefessum in negotiis, acutissimum in studiis,
very tenacious of passion, unwearied in business, very acute in studies,
 ferventissimum, fidelissimum in amore, sæpe aptum ad poësin,
very fervent, very faithful in love, often fitted for poetry,
 aliquando proclivem in melancholiam et insaniam. Idem patiuntur
sometimes prone to melancholy and insanity. The same suffer
 multum a otiosâ et sedentariâ vitâ, et stimulantibus et
much from an idle and sedentary life, and by stimulating and
 calefacientibus remediis: sæpe concoquunt male et laborant a
heating remedies: often they digest badly and suffer from
 ventriculo, et sunt obnoxii hypochondriasi quæ rarius observatur
the stomach, and are liable to hypochondriasis which more rarely is observed
 in aliis constitutionibus. Dicuntur esse præ aliis hominibus
in other constitutions. They are said to be more than other persons
 obnoxii obstructionibus viscerum abdominis.
liable to obstructions of the viscera of the abdomen.

rheumatismo, anginae, &c. et morbis nervosi generis, hysteriæ imprimis, obnoxii est. Huic igitur temperantia in victu et potu, et exercitatio crebra conveniunt, et aliquando exinanitiones, quas bene tolerare solet.

924. Temperamentum melancholicum huic fere contrarium videtur, compagine firmiore, sæpe macra; cute crassa, fusca, hirsuta; magnis venis, crinibus, et supercillis, et oculis nigris; atro vultus colore, notatum. Hoc temperamento præditi pulsus fere habent tardos, et sanguinis motum languidiorem, sanguinem ipsum, ut fertur, crassiorem solito, et secretiones et excretiones parcas, aliquando deficientes, genusque nervosum parum sentiens aut mobile, et

animum gravem, sæpe tristem, meditabundum, haud facile commovendum, quo semel commotus est affectus tenacissimum, in negotiis indefessum, in studiis acutissimum, in amore ferventissimum, fidelissimum, ad poësin sæpe aptum, in melancholiam et insaniam aliquando proclivem (292, et seqq.) Idem patiuntur multum a vita otiosa et sedentaria, et stimulantibus et calefacientibus remediis: sæpe male concoquunt, et a ventriculo laborant, et hypochondriasi obnoxii sunt, quæ in aliis constitutionibus rarius observatur. Dicuntur præ aliis hominibus obstructionibus viscerum abdominis obnoxii esse.

925. Cholericum temperamentum occupat fere medium locum inter hæc: nimirum, quod denotatur molliore, mobiliore corpore, cute hæc: nimirum, quod denotatur molliore, mobiliore corpore, cute
The choleric temperament occupies nearly a middle place between these: namely, which is denoted by a softer, more mobile body, by a skin minus fuscâ et hirsutâ, magis vivido colore vultûs fre-
less brown and hairy, a more vivid colour of countenance, a more frequent and stronger pulse, the secretions more free, and the mind irritabilior, et, ut fertur, observantur magis proclivi præsertim more irritable, and, as it is said, they are observed more prone especially ad iram, quam in melancholico temperamento.
to anger, than in melancholic temperament.

926. Phlegmaticum temperamentum insignitur, laxâ et debili compage
The phlegmatic temperament is characterized, by a lax and weak frame corporis, sæpe cum obesitate, pallido vultu, levi cute
of body, often with fatness, a pale countenance, a smooth skin sine pilis, capillis albis, pulsu tardo, debili, vasis
without hairs, the hair white, the pulse slow, weak, the vessels vehentibus sanguinem parvis, humoribus, ut fertur, magis aquosis et
carrying the blood small, the fluids, as it is said, more watery and blandioribus solito, que motu eorum languido, concoctione,
blander than usual, and the motion of them languid, the concoction, secretion, excretion, tardis, interdum impeditis, animo hebetè, torpido,
secretion, excretion, slow, sometimes impeded, the mind dull, torpid, aliquando somniculoso, haud commovendo facile, maxime proclivi ad metum
sometimes drowsy, not to be roused easily, very much disposed to fear et avaritiam. Exercitatio et stimulantia remedia aliquando conveniunt
and avarice. Exercise and stimulating remedies sometimes suit præditis tali constitutione; neque nocet multum interdum
those endowed with such a constitution; nor does it hurt much sometimes caluisse mero.
(occasionally) to have heated (indulged) with wine.

927. Hæc, primaria et pura temperamenta, sæpe miscentur variis
These, the primary and pure temperaments, often are mixed in various modis et proportionibus: veluti sanguineum cum phlegmatico aut
ways and proportions: as the sanguineous with the phlegmatic or melancholico; conjunctiones cujûsmodi spectamus quotidie.
melancholic; combinations of which kind we see every day.

928. Nonnulli, demum, describunt aliud temperamentum, quod vocant
Some, again, describe another temperament, which they call nervosum; nec immerito, (secundum sensum hujûs vocabuli,
nervous; nor improperly, (according to the signification of this word,

925. Medium fere hæc inter locum occupat cholericum temperamentum: nimirum, quod denotatur corpore molliore, mobiliore, cute minus fusca et hirsuta, colore vultus magis vivido, pulsu frequentiore et validiore, secretionibus liberioribus, et animo irritabilior, et, ut fertur, ad iram præsertim magis proclivi, quam in melancholico temperamento observantur.

926. Phlegmaticum temperamentum insignitur, laxa et debili corporis compage, sæpe cum obesitate, vultu pallido, cute levi sine pilis, capillis albis, pulsu tardo, debili, vasis sanguinem vehentibus parvis, humoribus, ut fertur, aquosis magis et blandioribus solito, eorumque

motu languido, concoctione, secretione, excretion, tardis, interdum impeditis, animo hebetè, torpido, aliquando somniculoso, haud facile commovendo, ad metum et avaritiam maxime proclivi. Tali constitutione præditis, exercitatio, et stimulantia remedia aliquando conveniunt; neque multum nocet interdum caluisse mero.

927. Primaria et pura hæc temperamenta variis modis et proportionibus sæpe miscentur: veluti sanguineum cum phlegmatico aut melancholico; cujusmodi conjunctiones quotidie spectamus.

928. Aliud demum temperamentum nonnulli describunt, quod nervosum vocant; nec imme-

nunc receptum apud medicos, et sane vulgum quoque,)
 (as) now received among physicians, and indeed the public also,)

quippe cui insignis debilitas et mobilitas nervosi
 as being that to which great debility and irritability of the nervous
 generis contingant. Talis conditio nervosi generis potest effici
 system belong. Such a condition of the nervous system may be produced
 in omnibus temperamentis, vero facilius in sanguineo, vel
 in all the temperaments, but more easily in the sanguineous, either
 puro vel mixto cum phlegmatico, scilicet, otioso et sedentario
 pure or mixed with the phlegmatic, that is, an idle and sedentary
 genere vitæ, nimia abundantia sanguinis, calore, que aliis causis
 kind of life, excessive abundance of blood, heat, and the other causes
 jam recensitis: hinc frequentissima apud divites et ignavos et
 already enumerated: hence very common among the rich and idle and
 luxuriosos: fere ignota veteribus, saltem multo rarius
 luxurious: almost unknown by the ancients, at least much more rarely
 observata inter eos, jam satis cognita recentibus fere
 observed amongst them, now sufficiently known to the moderns nearly
 per centum annos que super.
 for a hundred years and more.

929. Hoc temperamentum est opportunum multis morbis nervosi
 This temperament is liable to many diseases of the nervous
 generis, veluti hysteriæ, dyspepsiæ, &c. male fert fere omnes
 system, as hysteria, dyspepsia, &c. badly bears almost all (kinds of)
 exinanitiones, præsertim jacturam sanguinis, et pleraque fortiora
 evacuations, especially loss of blood, and most (of) stronger
 medicamenta: et sæpe postulat roborantia remedia.
 medicines: and often requires strengthening remedies.

930. Alia constitutio fere datur viris, alia fœminis.
 One constitution generally is given to men, a different to women.

Hæ, nimirum, habent plus sanguinei, vel aliquando
 The latter, indeed, have more of the sanguineous, or sometimes
 phlegmatici temperamenti, scilicet quæ sunt molliores et deli-
 of the phlegmatic temperament, as being who are softer and more
 catiores, et debiliores quam viri; et habent animos pariter ac
 delicate, and weaker than men; and have their minds as well as
 corpora mobillora, et humores blandiores; et sunt magis
 bodies more irritable, and the fluids more bland; and are more
 opportunæ morbis nervosi generis, vero minus morbis qui
 liable to diseases of the nervous system, but less to diseases which
 habent inflammationem. Igitur, fœminæ pari ratione differunt a
 have inflammation. Therefore, women in like manner differ from

to (secundum hujus vocabuli sensum nunc apud medicos et sane vulgum quoque receptum), quippe cui insignis generis nervosi debilitas et mobilitas contingant. Talis generis nervosi conditio in omnibus temperamentis, facilius vero in sanguineo, vel puro vel cum phlegmatico mixto, effici potest, vitæ genere scilicet otioso et sedentario, nimia sanguinis abundantia, calore, aliisque causis jam (370, et seqq.), recensitis: hinc apud divites, et ignavos, et luxuriosos, frequentissima: veteribus fere ignota, saltem multo rarius inter eos observata, recentibus jam fere per centum annos satis superque cognita.

929. Hoc temperamentum, multis morbis generis nervosi, veluti hysteriæ, dyspepsiæ, &c. opportunum est: exinanitiones fere omnes, præsertim jacturam sanguinis, et medicamenta pleraque fortiora, male fert; et roborantia remedia sæpe postulat.

930. Alia fere viris, alia fœminis, constitutio datur. Hæ nimirum plus habent sanguinei, vel aliquando phlegmatici temperamenti; scilicet quæ molliores, et delicatiores, et debiliores sunt quam viri; et animos pariter ac corpora mobilliora habent, et humores blandiores; et magis opportunæ sunt morbis nervosi generis, minus vero morbis qui inflammationem habent.

viris, quod ad constitutionem corporis, quamvis haud tantum ac
men, as to constitution of body, although not so much as
 infans differt ab adulto.
the infant differs from the adult.

931. Neque temperamentum constat idem cuiquam, va-
Nor does the temperament continue the same to each person, at the va-
 riis ætatibus. Enim omnia mutantur tempore, que aliud interdum
rious ages. For all things are changed by time, and one sometimes
 transit fere in aliud. Sic, primâ ætate, sanguineum
passes almost into another. Thus, at the first age, the sanguineous
 observatur purissimum, vero idem, mediâ ætate, appropinquat
is observed most pure, but the same, at the middle age, approaches
 ad cholericum, in ultimâ ad melancholicum; et melancholicum,
to the choleric, in the last to the melancholic; and the melancholic,
 contrâ, primâ ætate fere participat sanguineum.
on the other hand, at the first age mostly participates (of) the sanguineous.

932. Præterea, a naturâ cœli sub quo vivimus, que
Besides, from the nature of the climate under which we live, and
 genere victûs et vitæ quo utimur, corpus afficitur haud
the kind of diet and life which we use, the body is affected not
 parum, que homines sic fiunt obnoxii aliis morbis, vivunt
a little, and men thus become liable to some diseases, live
 immunes ab aliis.
free from others.

933. Quamvis nulla regio, fortasse, fuerit prorsus inhabitabilis
Although no country, perhaps, would be wholly uninhabitable
 humano generi, tamen est verisimile, quasdam præstare reliquis, que
to the human race, still it is probable, that some excel the rest, and
 producere homines perfectissimos animo et corpore. Temperatæ,
produce men the most perfect in mind and body. The temperate,
 mediæ inter nimium calorem et frigus, videntur habere
middle (mean) between excessive heat and cold, seem to possess
 hanc excellentiam. Autem plurima vetant tribuere varietates
this excellence. But very many things forbid (us) to attribute the varieties
 gentium effectibus solis cœli; quippe quæ afficiantur
of nations to the effects alone of climate; as being what may be affected
 multum ab aliis causis, tum naturalibus tum moralibus. Autem
much by other causes, as well natural as moral. But
 haud exiguæ varietates gentium manifestissime pendent a cœlo.
no few varieties of nations most evidently depend upon climate.

934. Sic corpus solvitur et debilitatur in calidis regionibus,
Thus the body is relaxed and debilitated in hot countries,

Pari igitur ratione fœminæ a viris differunt quod ad corporis constitutionem, quamvis haud tantum, ac infans differt ab adulto (908, et seqq.)

931. Neque variis ætatibus idem cuiquam temperamentum constat. Omnia enim mutantur tempore, aliudque interdum fere in aliud transit. Sic prima ætate sanguineum purissimum observatur; idem vero media ætate ad cholericum, ultima ad melancholicum, appropinquat; et melancholicum contra, prima ætate sanguineum fere participat.

932. Præterea, a natura sub cœli quo vivimus, victusque et vitæ genere quo utimur, corpus haud parum afficitur, hominesque sic

aliis morbis obnoxii fiunt, ab aliis immunes vivunt.

933. Quamvis nulla fortasse regio fuerit generi humano prorsus inhabitabilis, tamen verisimile est quasdam reliquis præstare, hominesque producere animo et corpore perfectissimos. Temperatæ, mediæ inter nimium calorem et frigus hanc videntur excellentiam habere. Plurima autem vetant gentium varietates solis cœli effectibus tribuere; quippe quæ multum afficiantur ab aliis causis, tum naturalibus tum moralibus. Varietates autem gentium haud exiguæ a cœlo manifestissime pendent.

nervosum genus fit valde mobile, motus sanguinis est the nervous system becomes very irritable, the motion of the blood is liberrimus, et secretiones copiosæ, præsertim exhalatio per cutem, very free, and the secretions copious, especially the exhalation by the skin, que humores fere tenuiores, et, ut est receptum apud fere omnes and the fluid mostly thinner, and, as is admitted by almost all medicos, magis proclives in putredinem, quam in temperatis aut physicians, more prone to putridity, than in the temperate or frigidis regionibus. Igitur incolæ calidarum regionum plerumque cold regions. Therefore the inhabitants of hot regions generally observantur (nam hæc res est minime constans,) ignavi, are observed (for this thing is by no means constant,) idle, imbelles, inhabiles ad omnes labores, plerumque dediti weak, unfit for all (kinds of) labours, for the most part addicted voluptatibus, præsertim veneri; proni in omnes affectus animi, to pleasures, especially to venery; prone to all (kinds of) affections of the mind, vividi sed leves, habentes parum vis animi; vivid but light (trifling), possessing little strength of mind (resolution); maxime utuntur tenui victu, conflato ex frugibus, neque fere they mostly use a thin diet, prepared from vegetables, nor commonly abutuntur generosis liquoribus, quippe quibus parum egent. do they abuse generous liquors, as being what they little want.

935. Sunt opportuni morbis nervosi generis, que putridis
They are liable to diseases of the nervous system, and putrid et biliosis morbis, maxime intermittentibus febribus; afficiuntur and bilious diseases, especially intermitting fevers; they are affected rarius inflammationibus; que ideo dum ægrotant egent more rarely by inflammations; and therefore whilst they are sick they require multum remediis quæ corrigant putredinem et bilem, et tolerant much remedies which correct putridity and bile, and they bear ægre exinanitiones, imprimis detractionem sanguinis. badly evacuations, especially detraction of blood.

936. Contra, incolæ frigidarum regionum habent cor-
On the other hand, the inhabitants of cold regions have their pora firmiora et validiora, nervosum genus minus irritable, humores bodies firmer and stronger, the nervous system less irritable, the fluids crassiores, que motum eorum languidiorem, et exhalationem per thicker, and the motion of them more languid, and the exhalation by cutem parcam; et sæpe fiunt obesi: multum utuntur validissimo the skin scanty; and often become fat: abundantly use very strong victu, præsertim constante ex carnibus, et vino, que aliis generosis diet, especially consisting of meat, and wine, and other generous

934. Sic in calidis regionibus corpus solvitur et debilitatur, *genus nervosum valde mobile fit, motus sanguinis liberrimus est, et secretiones copiosæ, præsertim exhalatio per cutem, humoresque fere tenuiores, et, ut apud omnes fere medicos receptum est, in putredinem magis proclives, quam in regionibus temperatis aut frigidis. Incolæ igitur calidarum regionum plerumque (nam hæc res minime constans est) ignavi, imbelles, ad omnes labores inhabiles observantur, voluptatibus plerumque dediti, præsertim Veneri; in omnes animi affectus proni, vividi, sed leves, parum vis animi habentes; victu tenui, ex frugibus conflato,*

maxime utuntur, neque fere abutuntur liquoribus generosis, quippe quibus parum egent.

935. Morbis *nervosi generis, morbisque putridis et biliosis, maxime febribus intermittentibus, opportuni sunt; inflammationibus rarius afficiuntur: ideoque, dum ægrotant, remediis quæ putredinem et bilem corrigant multum egent, et exinanitiones, sanguinis imprimis detractionem, ægre tolerant.*

936. Frigidarum contra regionum incolæ corpora habent firmiora et validiora, *genus nervosum minus irritable, humores crassiores, eorumque motum languidiorem, et parcam per cutem exhalationem; et sæpe obesi fiunt:*

liquoribus. Observantur robustiores quam incolæ calidarum
 liquors. They are observed more robust than the inhabitants of warm
 regionum, et animosiores, et magis apti ad omnes labores
 countries, and more courageous, and more fit for all (kinds of) labours
 et militiam, præditi minore hilaritate, autem majore vi
 and warfare, endowed with less hilarity, but with greater strength
 animi; etiam minus mulierosi, sed non eo minus fœcundi.
 of mind; also less addicted to women, but not therefore less prolific.

937. Sunt obnoxii continuis febribus et inflammationibus: haud
 They are liable to continued fevers and inflammations: not
 tantum morbis nervosi generis, nisi fregerint nativam
 so much to diseases of the nervous system, unless they have broken their native
 vim malo genere vitæ, neque putridis neque biliosis morbis.
 vigour by a bad kind of life, nor to putrid nor bilious diseases.
 Dum ægrotant, fere egent validioribus medicamentis, et
 Whilst they are sick, they mostly want stronger medicines, and
 plerumque tolerant jacturam sanguinis bene.
 generally bear loss of blood well.

938. Porro, similes varietates, quamvis haud tantæ, observantur
 Moreover, similar varieties, although not so great, are observed
 diversis tempestatibus anni; quo fit ut alii
 at the different seasons of the year; whence it happens that some
 morbi grassentur allis temporibus, que fere alia
 diseases prevail at some (particular) times, and generally one
 ratio medendi conveniat iisdem morbis vere, alia autumno.
 mode of healing suits the same diseases in spring, another in autumn.

939. A genere victûs non leves varietates oriuntur. Sic, qui
 From the kind of diet no slight varieties arise. Thus, who
 utuntur victu ex carnibus pro maximâ parte cibi, et
 use a diet of meat for the greatest part of their food, and
 indulgent lautioribus epulis et generosis liquoribus, fere
 indulge in more sumptuous fare and generous liquors, commonly
 sunt robustiores potoribus aquæ, que iis qui vescuntur
 are more robust than the drinkers of water, and those who feed
 frugibus solis; sed sæpe minus sani, procliviores ad nimiam
 on vegetables alone; but often less healthy, more disposed to excessive
 abundantiam sanguinis, et inflammationes, et putredinem.
 abundance of blood, and inflammation, and putridity.

940. Genus vitæ, præsertim quod ad exercitationem aut
 The kind of life, especially with respect to exercise or
 ignaviam, facit multum, que præstat homines incolumes ab allis
 idleness, does much, and keeps men safe from some

victu multum utuntur validissimo, ex carnibus præsertim constante, et vino, aliisque liquoribus generosis. Robustiores quam calidarum regionum incolæ observantur, et animosiores, et ad omnes labores et militiam magis apti, minore hilaritate, majore autem vi animi præditi; minus etiam mulierosi, sed non eo minus fœcundi.

937. Febribus continuis, et inflammationibus, obnoxii sunt; haud tantum morbis nervosi generis, nisi malo vitæ genere vim nativam fregerint, neque putridis neque biliosis morbis. Dum ægrotant, validioribus fere medicamentis egent, et sanguinis jacturam plerumque bene tolerant.

938. Similes porro varietates, quamvis haud tantæ, diversis anni tempestatibus observantur; quo fit ut alii aliis temporibus grassentur morbi, iisdemque fere morbis alia vere, alia autumno, medendi ratio conveniat.

939. A victus genere, varietates non leves oriuntur. Sic qui victu ex carnibus pro maxima cibi parte utuntur, et epulis lautioribus et liquoribus generosis indulgent, robustiores fere sunt aquæ potoribus, iisque qui frugibus solis vescuntur; sed sæpe minus sani, ad nimiam sanguinis abundantiam, et inflammationes, et putredinem, procliviores.

940. Vitæ genus, præsertim quod ad exercitationem aut ignaviam, multum facit, homi-

morbis, reddit proclives ad alios. Sic exercitatio, modo fuerit
diseases, renders them prone to others. Thus' exercise, provided it be
 non nimia, roborat corpus, opitulatur concoctioni, promovet se-
not excessive, strengthens the body, assists concoction, promotes the se-
 cretiones et excretiones, intendit motum sanguinis, neque sinit
cretions and excretions, increases the motion of the blood, nor suffers
 plus sanguinis justo congeri; que ideo vel arcet
more blood than proper to be accumulated; and therefore either wards off
 multos morbos, vel depellit jam inductos atque urgentes.
many diseases, or drives away those already induced and urgent.

941. Vero ignavia solvit, debilitat, reddit corpus mobile,
But idleness relaxes, weakens, renders the body irritable,
 facit languidum motum sanguinis, fere minuit secre-
causes a languid motion of the blood, for the most part diminishes the secre-
 tiones et excretiones, et efficit plenitudinem et obesitatem; et
tions and excretions, and causes fulness and obesity; and
 igitur sternit viam plurimis morbis, hysteriæ, dyspepsiæ,
therefore strews the way for very many diseases, (as) hysteria, dyspepsia,
 podagræ, profluviis sanguinis, apoplexiæ, paralyti, obstructionibus, hydropi.
gout, fluxes of blood, apoplexy, paralysis, obstructions, dropsy.

942. Autem vehemens exercitatio, quamvis sæpe firmet,
But violent exercise, although often it may invigorate,
 roborat, et excitet corpus, tamen facit opportunius nonnullis
strengthen, and excite the body, yet renders it more liable to some
 morbis; partim, fortasse, ob majorem densitatem aut
diseases; partly, perhaps, on account of the greater density or
 acrimoniam humorum, vero magis propter insignem vim et
acrimony of the fluids, but more on account of the great power and
 robor solidarum partium, que ideo auctum impetum
strength of the solid parts, and consequently the increased impetus
 humorum; quo fit ut quædam febres et inflammationes
of the fluids; whence it happens that certain fevers and inflammations
 incumbant facilius et vehementius. Vero durus et perpetuus
attack more easily and more violently. But severe and constant
 labor, prorsus alia ratione, exhaurit, debilitat, indurat corpus,
labour, in altogether a different way, exhausts, debilitates, hardens the body,
 et ideo inducit præmaturam senectutem.
and therefore brings on premature old age.

943. Regimen, quoque, mentis, conducit non minus ad sanitatem,
The regulation, also, of the mind, conduces not less to health,
 quam ad diurnitatem vitæ. Vehementes affectus animi, sive
than to length of life. Violent affections of the mind, whether

nesque ab aliis morbis incolumes præstat, ad alios proclives reddit. Sic exercitatio, modo non nimia fuerit, corpus roborat, concoctioni opitulatur, secretiones et excretiones promovet, sanguinis motum intendit, neque sinit plus justo sanguinis congeri; ideoque multos morbos vel arcet, vel jam inductos atque urgentes depellit.

941. Ignavia vero corpus solvit, debilitat, mobile reddit, motum sanguinis languidum facit, secretiones et excretiones fere minuit, et plenitudinem et obesitatem efficit; et igitur plurimis morbis hysteriæ, dyspepsiæ, podagræ, sanguinis profluviis, apoplexiæ, paralyti, obstructionibus, hydropi, viam sternit.

942. Exercitatio autem vehemens, quamvis corpus sæpe firmet, et roborat, et excitet, nonnullis tamen morbis opportunius facit; partim fortasse ob majorem densitatem aut acrimoniam humorum, magis vero propter insignem solidarum partium vim et robor, auctumque ideo humorum impetum; quo fit ut febres quædam, et inflammationes, facilius et vehementius incumbant. Durus vero et perpetuus labor, alia prorsus ratione, corpus exhaurit, debilitat, indurat, et ideo senectutem præmaturam (897) inducit.

943. Regimen quoque mentis ad sanitatem non minus quam ad vitæ diurnitatem (900) conducit. Vehementes animi affectus, sive ex-

excitantes sive deprimentes, et graves curæ, efficiunt valetudini
exciting or depressing, and weighty cares, injure the health
 variâ ratione: quoque nimis intensa studia, neque intermissa ut
in various ways: also too intense study, nor intermitted as
 decet, nocent et animo et corpori: imprimis nervoso generi,
it ought, hurt both the mind and body: especially the nervous system,
 et ventriculo, et capiti. Autem damnum quod vulgo existimatur
and stomach, and head. But the injury which commonly is thought
 oriri a studiis, plerumque tribuitur melius generi vitæ,
to arise from study, generally is attributed better to the mode of life,
 parum idoneo, quod multi cupidi literarum solent degere;
no way suitable, which many fond of literature are accustomed to lead;
 scilicet, qui fere negligunt exercitationem corporis, neque sane est
that is, who mostly neglect exercise of the body, nor truly is
 ratio obscura quâ sedentaria vita nocet.
the manner obscure in which a sedentary life hurts.

944. Cæterum quamvis multi consenuerint in armis, multi in negotiis,
But although many have grown old in arms, many in business,
 que multi, demum, in otio, et luxu, et voluptatibus, que
and many, in fine, in idleness, and luxury, and pleasures, and
 vixerint sani omni tempore, tamen exempla plurimorum
have lived healthy(ily) the whole period, yet the examples of the most (part)
 philosophorum demonstrant quietam, temperatam, contemplativam
of philosophers demonstrates that a quiet, temperate, contemplative
 vitam, conducere maxime ad sanitatem, et ideo ad diuturnitatem
life, conduces most to health, and consequently to length
 vitæ, quippe quæ careat haud paucis periculis et
of life, as being that which wants (is free from) the no few dangers and
 causis morborum quibus actiosa vita est obnoxia.
causes of diseases to which an active life is exposed.

945. Postremo, oportet semper tenere in memoria, hominem existere
Lastly, it behoves always to keep in mind, that man exists
 adeo versatilem, ut unus, omnium animalium, accomodet
so versatile, that (he) alone, of all animals, can accommodate
 sese ad omnes cœlos, utcunque diversos, et ad genera vitæ
himself to all climates, however different, and to modes of life
 maxime contraria, et sane videatur esse natus ad omnia. Fere pari
the most opposite, and truly seems to be born for all. In almost a like
 ratione accomodat sese ad diversissima genera cibi, et
way he accommodates himself to the most different kinds of food, and
 demum ita assuescit gravissimis causis morborum, que
at length so accustoms himself to the most powerful causes of diseases, and

citantes sive deprimentes, et graves curæ, varia ratione (345, 346) efficiunt valetudini: studia quoque nimis intensa, neque ut decet intermissa, et animo et corpori nocent: generi nervoso imprimis, et ventriculo, et capiti. Damnum autem quod a studiis vulgo oriri existimatur, melius plerumque tribuitur vitæ generi parum idoneo, quod multi literarum cupidi degere solent, scilicet qui corporis exercitationem fere negligunt: neque sane obscura ratio qua vita sedentaria (941) nocet.

944. Cæterum, quamvis multi in armis, multi in negotiis, multaque demum in otio, et luxu,

et voluptatibus, consenuerint, sanique omni tempore vixerint, tamen plurimorum philosophorum exempla demonstrant, vitam quietam, temperatam, contemplativam, ad sanitatem, et ideo ad vitæ diuturnitatem, maxime conducere, quippe quæ haud paucis careat periculis et morborum causis, quibus vita actiosa obnoxia est.

945. Postremo, memoria semper tenere oportet, hominem adeo versatilem existere, ut ad omnes cœlos, utcunque diversos, et ad vitæ genera maxime contraria, unus omnium animalium se accomodet, et sane ad omnia

rebus quæ non immerito habentur venena, ut non modo
to things which not undeservedly are considered poisons, that not only
 capiat parum detrimenti ex iis, sed sæpe, sive sanus, sive
he takes little detriment from them, but often, whether healthy, or
 ægotans, sive convalescens, possit carere iisdem ægre, nec
sick, or convalescent, can want the same with difficulty, nor
 sine periculo.
without danger.

videatur esse natus. Pari fere ratione, ad
 diversissima cibi genera se accommodat, et
 demum gravissimis morborum causis, rebusque
 quæ non immerito venena habentur, assuescit,

ita ut non modo parum ex iis detrimenti
 capiat, sed iisdem sæpe, sive sanus, sive ægro-
 tans, sive convalescens, ægre, nec sine periculo,
 carere possit.

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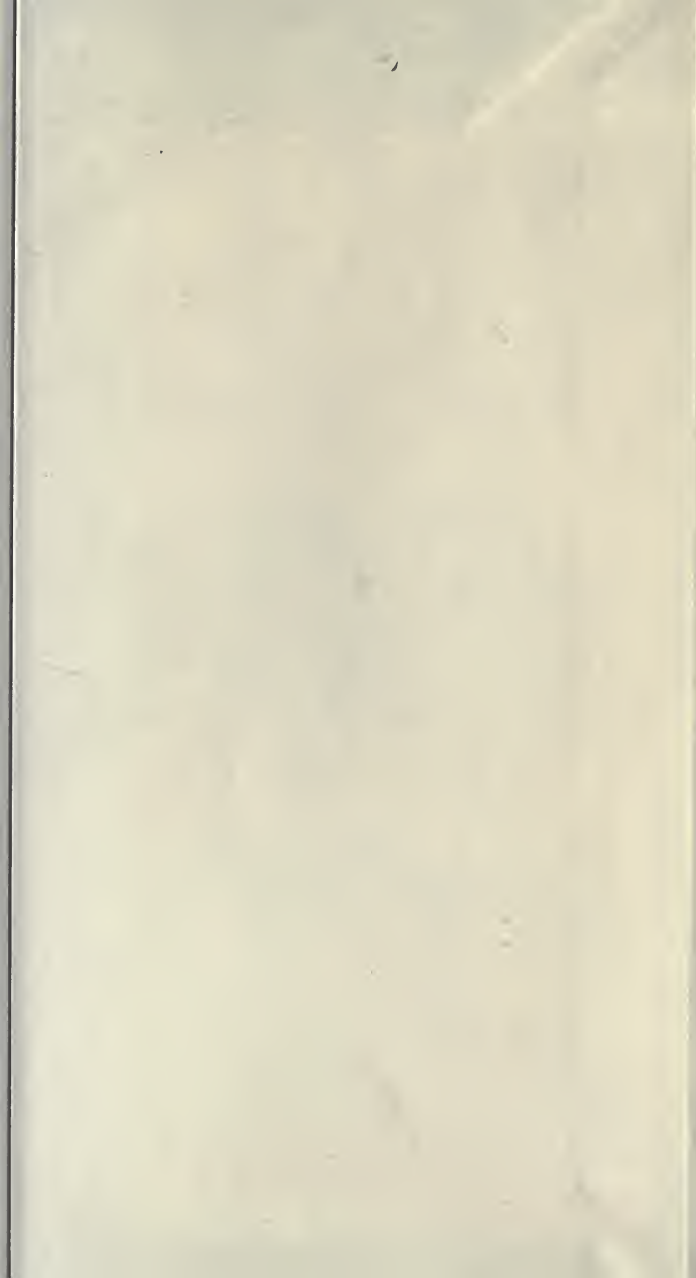
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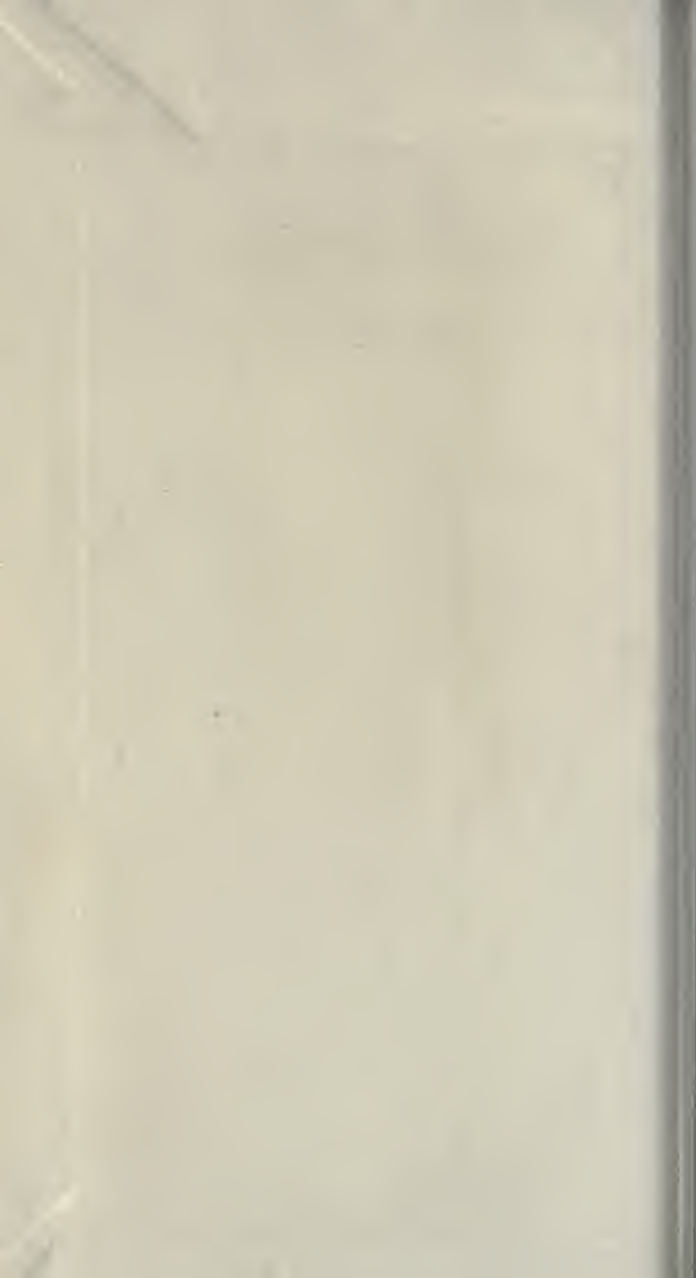
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