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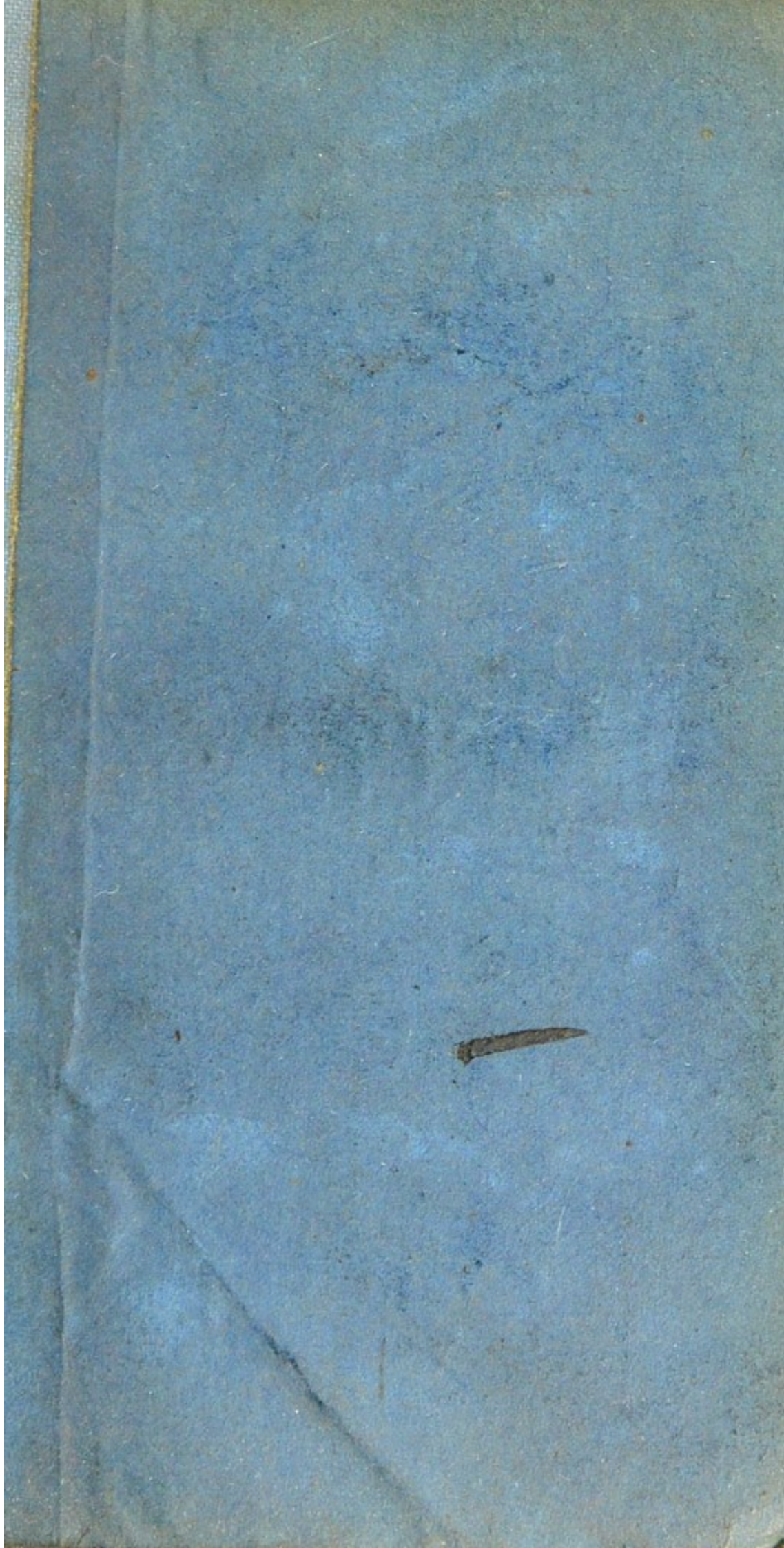
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CONSPECTUS
MEDICINÆ THEORETICÆ,

AUCTORE

JACOBO GREGORY, M.D.

ACCEDUNT

ORDO, TRANSLATIO, ET NOTÆ,

CURA

IOANNIS STEGGALL,

ALMÆ PISANÆ ACADEMIÆ MEDICINÆ DOCT. &C.

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CONSPECTUS

MEDICINÆ THEORETICÆ.

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 remedium natura, viribus, et effectibus.*

CAP. I.—*Quædam generalia præfanda de functionibus vivi corporis; de naturâ que causis morborum de viribus insitis corpori, quæ (vires) tuentur sanitatem, que depellunt morbos; nec non de naturâ, (de) viribus et effectibus remedium.*

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

1. *Corpus humanum, fabricatum arte prorsus divinâ, fungitur* multis et miris muneribus; alia quorum (munerum) pertinent ad externas res, alia (pertinent) ad seipsum (corpus) tantum.*

2. Ad alterum genus referuntur sensus omnis motusque voluntarius; quibus, quantumvis simplici-

2. *Omnis sensus que voluntarius motus referuntur ad alterum genus (mune-*

A CONSPECTUS OF THEORETICAL MEDICINE.

CHAP. I. *Some general prefatory (observations) on the functions of the living body, on the nature and causes of diseases, on those innate powers of the body which watch over health and ward off diseases; also on the nature, properties, and effects of remedies.*

1. The human body, framed by skill altogether divine, performs many and wonderful functions; some of which relate to external objects, others to (the body) itself only.

2. All sensation and voluntary motion are referred to the one description of functions; by which powers, however simple, we become acquainted

* *Fungor, fruor, &c.* govern the ablative case.

rum); quibus viribus quantumvis simplicibus (nos) cognoscimus mundum, potimur* terrarum. Hæ dicuntur animales functiones apud medicos.

3. Verò minimè valemus ad has functiones omni tempore; enim longâ aut validâ exercitatione sive animi, sive corporis, insitæ vires utriusque (i. e. animi et corporis) exhauriuntur. Autem in hoc statu (nos) monemur brevi et tandem (nos) cogimur dulci necessitate, intermittere pariter omnes labores et voluptates que deponere curas, et committere nosmetipsos defessos et hebescentes amplexibus somni: gremio cujus (i. e. somni) foti et relecti, nos resurgamus denuò vegeti et alacres, et aptissimi ad omnia munera vitæ.

4. Ad alterum genus cunctæ actiones solent referri ope quarum (actionum) corpus vivit que exhaustum reficitur, que corruptum purgatur. Verò hæ (functiones) sunt vitales vel naturales.

5. Illæ functiones dicun-

bus, 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 monemur, et tandem dulci necessitate cogimur, labores omnes et voluptates pariter intermittere, curasque deponere, et nosmetipsos defessos et hebescentes somni amplexibus committere; cujus gremio foti et relecti, resurgamus denuò 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

with the globe, (and) are masters of the earth. These are called animal functions by medical men.

3. But we are by no means competent to these functions at all times; for by long or powerful exercise either of the mind or the body, the innate powers of each are exhausted. But in this state we are early admonished, and at length are obliged by grateful necessity, equally to intermit all labours and pleasures, and to lay aside cares, and to commit ourselves, fatigued and languid, to the embraces of sleep, from whose bosom, cherished and refreshed, we may rise again lively and alert, and best fitted for all the duties of life.

4. To the other description (of functions) all those actions are wont to be referred, by the aid of which the body lives, (when) exhausted is repaired, and (when) corrupted is purified. But these (actions) are vital or natural.

5. Those functions are called vital which are so necessary to life, that they

* Potior governs either the genitive or ablative case.

illæ quæ ad vitam adeo necessariæ sunt, ut sine vitæ discrimine, ne quidem per exiguum tempus, suspendi aut interrumpi queant; cerebri, nimirum, nervorumque actio, sanguinis circuitus, et respiratio.

6. Machina vero animalis sic constituta statim defluit, 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 insuper mirabili artificio efficit, ut ex hac ipsa ho-

tur vitales, quæ sunt adeo necessariæ ad vitam ut ne queant suspendi aut interrumpi quidem per exiguum tempus, sine discrimine vitæ; nimirum actio cerebri, que nervorum, circuitus sanguinis, et respiratio.

6. Verò animalis machina sic constituta statim defluit, etiam citò periret; nam omni motu solidæ partes teruntur, fluidæ (partes) dissipantur, relicturæ corpus debile macrum que exhaustum; quinetiam utræque (partes solidæ et fluidæ) putrescunt et corrumpuntur spontè; etiam sic brevè ipse homo compararet sibi venenum acerrimum.

*7. Sed alma parens rerum nusquam deserit prolem. Contrà (illa i. e. parens) non modo suggerit remedium his malis, quæ minitantur necem semper et ubique, et inferrent * inopi (proli) sine dubio, verùm insuper efficit mirabili artificio, ut homo*

cannot be suspended or interrupted, even for a little space of time, without peril to life; namely, the action of the brain and nerves, the circulation of the blood, and respiration.

6. But the animal machine thus constituted immediately decays, (and) likewise would speedily perish; for by every motion of the body the solid parts are worn away, the fluid parts are dispersed, about to leave the body weak, emaciated, and exhausted; moreover they both putrify and are decomposed spontaneously, so that man himself in a short time would be preparing for himself a most deleterious poison.

7. But the kind parent of nature nowhere deserts her offspring; on the contrary, she not only supplies a remedy for those evils which always and every where threaten with death, and would indubitably inflict it unprepared, but

* Verbs compounded with the preposition *in*, &c, govern the dative case.

ferat novum et perennem vigorem ex hâc necessitudine ipsâ.

8. *Enim corpore attrito, que parte humorum absumptâ (nos) egemus nutrimento et potû; itaque (nos) appetimus, sumimus, concoquimus cibum que potum; uterque (i. e. cibus et potus) concoctus diffunditur per totum corpus, (et) apponitur quâ opus est; quod superest utriusque (potûs vel cibi) ejicitur. Quoque humores putrescentes vel aliter corrupti, secreti, a reliquis, excernuntur e corpore idoneâ viâ. Denique plurimi succi, secernuntur assiduè a generali massâ diversi ab illâ et diversi inter se, que accommodati variis usibus intra corpus.*

9. *Hæ functiones vocantur naturales, quidè̃m necessariae ad vitam, sed quæ possunt suspendi paulisper facillè et sine periculo; scilicet, concoctio, secretio et excretio.*

10. *Igitur homo vivit, viget, reficitur, purgatur vi-*

mo necessitudine novum ferat et perennem vigorem.

8. Attrito enim corpore parteque humorum absumpta, nutrimento et potu egemus; cibum itaque potumque appetimus, sumimus, concoquimus: concoctus uterque per totum corpus diffunditur, qua opus est apponitur; quod superest utriusque ejicitur. Putrescentes quoque vel aliter corrupti humores, a reliquis secreti, idonea via e corpore excernuntur. Plurimi denique 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, scilicet, secretio et excretio.

10. Vitalibus, igitur, et naturalibus functionibus homo vivit, vi-

moreover she manages by wonderful contrivance, that man may receive renewed and lasting vigour from this very necessity.

8. For the body being worn away, and a portion of the humours being removed, we stand in need of nourishment and drink; therefore we seek, take, and digest food and drink; each of them, when digested, is distributed through the whole body, and deposited where it is required; what remains of each is thrown out. Also humours disposed to putrify or otherwise corrupt, secreted by other (humours) are excreted from the body by a proper channel. Lastly many juices are constantly being secreted from the general mass, differing from it, and differing between themselves, and adapted to various uses within the body.

9. These functions are called natural, necessary indeed to life, but which may be suspended for a short time, easily and without danger,—namely digestion, secretion, and excretion.

10. Therefore man lives, thrives, is replenished, and cleansed, by the vital

get, reficitur, purgatur, ad animales exercendas idoneus evadit: nobile opus, nec nisi Uni excogitandum; certe omne humanum ingenium tantum excedens, ut mente quamvis sagace, toties exploratum, non capiatur; neque singularum, partium functiones, neque universarum nexus, neque fons et origo virium quibus machina movetur, hactenus detegantur.

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

12. Primo statim aspectu, talis machina, nisi forte causa aliqua externa corrupta vel læsa, in omne ævum durabilis videtur: et quidem sola experientia contrarium doce-

talibus et naturalibus functionibus (et ille) evadit idoneus ad exercendas animales (functiones); nobile opus, nec excogitandum nisi Uni; certè tantùm excedens omne humanum ingenium ut (quamvis) toties exploratum non capiatur mente quamvis sagace: neque functiones singularum partium, neque nexus universarum (partium) neque fons et origo virium, quibus (viribus) machina movetur, hactenùs detegantur.*

11. Enim nulla machina præter (machinam) animalem cietur proprio motu; nulla alia (machina) suâ sponte summovet sibimet pericula imminetia, nec ministrat sibi res, quibus (rebus) eget. †

12. Statim primo aspectû talis machina videtur (esse) durabilis in omne ævum nisi (sit) fortè corrupta vel læsa aliquâ externâ causâ; et quidẽm (nos) docemur ‡ con-

and natural functions (and) becomes fitted for exercising the animal functions: a noble work, not to have been contemplated but by the Supreme Being alone; so much exceeding human understanding, that (although) explored so many times, it cannot be comprehended by a mind the most intuitive; nor can the functions of individual parts, nor the connexion of the parts collectively, nor can the source or origin of the powers by which the machine is moved, up to the present time be discovered.

11. For no machine besides the animal (frame) is propelled by its own motion; none other of its own accord removes from itself impending dangers, or furnishes to itself the supplies which it stands in need of.

12. Immediately, at first sight, such a machine appears to be lasting to every age, unless by chance destroyed or injured by some external cause; but, indeed, we are taught the contrary by experience alone. For man, though

* *Gerunds* are sometimes used and construed as nouns adjective.

† Verbs of abounding, or the contrary, such as to stand in need, govern the ablative case.

‡ Verbs of teaching, concealing, &c. govern the accusative case.

trarium experientiâ solâ. Enim homo, quamvis sanus et robustus et vegetus, annis labentibus et ipse dilabitur, senescit, moritur, (et) solvitur in pristina elementa, futurus pabulum aliis animantibus.

13. *Autem hæc (est) lex Naturæ, hoc (est) consilium (naturæ) ut singuli homines pereant, gens humana floreat. Hinc sexus (est), hinc generatio et proles (sunt), et quicquid suavis quicquid amari alma Venus habet.*

14. *Sed (homo) ipse dominus terrarum et animalium quæ incolunt eas, nascitur parvus, debilis, fatuus, inops omnium rerum; (ille i. e. homo) diù conservatur, fovetur, alitur solâ curâ parentum (ille) paulatim crescit, pubescit, adolescit, sapit; (ille) æquat parentes et formâ animi et viribus corporis, (ille) gaudet exercere eadem munera; tandem annis ingrarescentibus (ille) subiturus (est) communem sortem.*

15. *Hæc omnia (sunt) communia universo generi;*

mur. 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, ingrarescentibus annis, communem sortem subiturus.

15. Hæc omnia universo generi communia; nec desunt multa sin-

healthy, robust, and lively, as the years glide on, also sinks down himself, becomes old, and dies, and is resolved into his pristine elements, about to become food for other animals.

13. Such is the law of nature, such is the design; that individuals may perish, (whilst) the human race thrives. Hence sex, generation, and offspring, and whatever sweets, whatever bitters fond Venus imparts.

14. But (man) himself, lord of the earth and of the animals which inhabit it, is born diminutive, weak, feeble in mind, in want of all things; he is for a long time preserved, cherished, and nourished by the sole care of his parents; by degrees he grows up to youth, to manhood, and becomes wise; he equals his parents both in the frame of his mind and strength of his body; he rejoices to exercise the same functions, (and) at length, as years weigh upon him, he is about to undergo the common lot (of all.)

15. All these (qualities) are common to the whole human race; nor are

gulis hominibus propria. Non secus enim ac vultus, corporis constitutiones variant. Hæ quidem varietates nullo modo exequendæ sunt, tamen ad certa capita non inepte referri solent, quæ temperamenta κατ' ἐξοχην dicuntur; quorum scientia medico haud parùm proderit.

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

nec multa propria singulis hominibus desunt. Enim constitutiones corporis variant non secus ac vultus. Quidem hæ varietates nullo modo sunt exequendæ, tamen solent haud inepte referri ad certa capita quæ dicuntur temperamenta κατ' ἐξοχην; scientia quorum (temperamentorum) haud parùm proderit medico.

16. Varietates hujusmodi non modo corporis, verum et animi quoque observantur, plerumque congenitæ, nonnunquam hæreditariæ. Hoc modo parentes sæpe reviviscunt in prole; certè liberi sunt similes parentibus non modo (secundum) vultum* et formam corporis sed (secundum) indolem animi et virtutes et vitia. Imperiosa Claudia gens, diu floruit Romæ, impigra ferox, superba: eadem (gens) produxit illachrymabilem Tiberium, tristissimum tyrannum; tandem desitura in immanem Caligulam et Clau-

many things peculiar to individuals wanting. For bodily constitutions vary no less than the countenance. These varieties, indeed, are by no means to be defined, but are wont not inaptly to be referred to certain heads, which are called temperaments, for the sake of distinction; a knowledge of which will be of no trifling use to the medical man.

16. Varieties of this kind are observed not only of the body but of the mind also, frequently congenital, sometimes hereditary. In this manner, parents frequently revive in their descendants, not only as to the countenance and frame of the body, but in the disposition, virtues, and vices. The imperious Claudian family flourished for a long time at Rome, restless, ferocious, and haughty. The same family produced the pitiless Tiberius, a most dreadful tyrant, at length about to close its existence by the outrageous Caligula,

* The accusative case is sometimes joined to adjectives and participles where the preposition *secundum* seems to be understood.

dium, et Agrippinam, que demùm ipsum Neronem post sexcentos annos.

17. Quin humanum corpus subit multas et graves mutationes et ab aliis causis, valetudine * adhuc firmâ et imprimis a genere vitæ et victû quo utimur, ab ipso cœlo sub quo (nos) degimus et ab immensâ vi consuetudinis. Oportet quoque medicum novisse hæc.

18. Igitur secunda valetudo definienda est nullis verbis, neque profectò facillè describenda (est); quippe quam natura ipsa fecerit variam non sine sapiente consilio. Tamen juvabit scire, sanitatem perfectissimam florentis ætatis contingere homini, cui sana mens optimum donum Dei, data est; qualis non modò sufficiat ad solita munera vitæ, sed (qualis) accomodet se quoque facillè casibus, et studiis et negotiis; quæ

Agrippinam, ipsumque demum Neronem, post sexcentos annos, desitura.

17. Quin et ab aliis causis, firma adhuc valetudine, corpus humanum multas et graves subit mutationes; et imprimis a vitæ genere et victu quo utimur, ab ipso sub quo degimus cœlo, et ab immensa vi consuetudinis. Hæc quoque medicum oportet novisse.

18. Secunda, igitur, valetudo nullis est definienda verbis, neque profecto facile describenda; quippe quam Natura ipsa non sine sapiente consilio, variam fecerit. Scire tamen juvabit, perfectissimam 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 accom-

Claudius, Agrippina, and lastly Nero himself, after a period of six hundred years.

17. Moreover the human body undergoes many and important changes also from other causes, the health being still unimpaired; in the first place from the mode of life and kind of food we make use of, from the atmosphere itself under which we live, and from the unbounded sway of habit. It is necessary that the physician should be acquainted with these things.

18. Therefore good health is to be defined by no terms, nor indeed easily described; as being which nature has made so varied, (though) not without wise intention. However, it will be useful to know that the most perfect health of the flower of age, falls to the lot of him, to whom a sound mind, the noblest gift of God is given, such as may not only suffice for the usual purposes of life, but such as can also easily accommodate itself to the acci-

* Nouns taken in an absolute sense, where no preposition is understood, and of which the sense is rendered evident by the word *being*, are put in the ablative case.

modet; quæ probe sentiens, et perpicax, et tenax, et percipit, et intelligit, et retinet, ut decet; quæ firma et serena, sive gravior fuerit sive hilarior, suique semper compos, neque suis inordinatis motibus neque externis casibus ludibrio est; sed propriis affectibus imperat, non paret, rebusque secundis modestè fruitur, adversas fortiter tolerat, et gravioribus, siqui acciderint, casibus, excitatur, non convellitur. Hæc, quidem, non modo sunt signa et indicia sanæ mentis, sed sani corporis quoque; et profecto ad hujus sanitatem haud parum conferunt: scilicet donec in compage sua corporea inclusa est, mens, et corpus multum afficit et ab eo afficitur vicissim.

19. Quod ab hoc vero attinet, validissimum et fere sanissimum est corpus justæ magnitudinis et bene formatum, neque procerum nimis, neque breve, neque macrum,

(*mens sana*) probè sentiens, et perspicax, et tenax, percipit, et intelligit, et retinet, ut decet; quæ (est) firma et serena sive fuerit gravior sive hilarior, que semper compos sui, (quæ) neque est ludibrio suis inordinatis motibus neque externis casibus; sed (quæ) imperat* non paret* propriis affectibus, que fruitur modestè secundis rebus, tolerat fortiter adversas (res) et excitatur non convellitur gravioribus casibus siqui acciderint. Hæc quidem sunt non modò signa et indicia sanæ mentis, sed quoque sani corporis et profecto conferunt haud parum ad sanitatem hujus (i. e. sani corporis); scilicet mens, donec inclusa est in suâ corporeâ compage et afficit corpus multum, et vicissim afficitur ab eo.

19. Verò quod attinet ad hoc (i. e. corpus), corpus ferè est validissimum et sanissimum justæ† magnitudinis† et benè formatum,

dents, and studies, and affairs; which correctly feeling, and discerning and tenacious, perceives, understands, and retains as it should do; such as is firm and calm, whether it be more oppressed or more lively, and is always master of itself, and which becomes a laughing stock neither to its unmeasured emotions nor external accidents; but (such as) governs, not obeys, its own affections, and (which) modestly enjoys prosperity, and bears adversity with fortitude, and is excited, not distracted by the severer accidents, if any befall it. These are not only the characters and evidences of a sound mind, but also of a sound body, and, indeed, they contribute no little to the health of it; for, as long as the mind is confined in its corporeal frame, it both greatly affects the body, and is in turn affected by it.

19. But, as regards the latter, the body is commonly most powerful and healthy, when of average size and well formed, not too tall, nor too short,

* Verbs of commanding and obeying govern the dative case.

† Nouns expressing the quality of a thing are put either in the genitive or ablative case.

neque nimis procerum, neque (nimis) breve, neque macrum neque grave multâ pinguedine; sed potius quadratum quam gracile, et imprimis instructum amplo thorace, que latis humeris, cui (corpori) ossa sunt grandiora et musculi torosi, benè expressi et firmi, et fortes, nunquam tremuli: et (cui corpori) (est) cutis mollis quasi humida, nunquam arida; et color presertim vultus (est) bonus et constans, sive is (color) fuerit pulchrior sive fuscior, dummodo neque vergat ad flavum (colorem) neque pallidum; et (cui est) vultus vegetus et hilaris, et oculi nitentes et vividi; et dentes (sunt) integri et fortes; et gressus firmus (cum) artubus benè sustentibus corpus; et incessus erectus et omnis exercitatio facilis, et labor tolerabilis, quamvis diuturnus et gravis et omnia organa externorum sensuum probè valentia ad sua munera neque torpida neque sentientia nimis acriter; et (cui) somni (sunt) leves et diuturni haud faciles ruptu, qui reficiunt corpus multum et

neque multa pinguedine grave; sed quadratum potius quam gracile, et amplo imprimis thorace latisque humeris instructum; cui ossa grandiora 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 corpus 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 sentientia; et somni leves et diuturni, haud faciles ruptu, qui corpus multum reficiunt, et somniis vel prorsus carent vel saltem horri-

not thin, nor oppressed with much fat; but rather square-built than slender, and especially furnished with a full chest and broad shoulders, with bones rather large, with fleshy muscles, well marked, firm, and strong, but never tremulous, a skin soft as if moist, never dry; a good and constant complexion, whether it be fair or dark, provided it does not incline to a yellow or pale (colour), a cheerful and lively countenance, bright and sparkling eyes, sound and strong teeth; a firm step, with limbs well supporting the body; an upright gait, and every exercise or labour supportable, although long continued and oppressive; and all the organs of the external senses properly competent to their functions, neither dull nor possessing too acute sensibility; sleep light, long continued, not easily broken, such as refreshes the body considerably, is entirely free from dreams, or at least without frightful ones,

ficis; et vel placida quiete et jucundis vitæ obliivis 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, lenta, 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 humidum, 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

(qui) carent somniis vel prorsus vel saltem horrificis et qui penitus sopiunt placidâ quiete et jucundis obliivis vitæ vel recreant animum suaviter gratis imaginibus.—Porrò (hæc) sunt indicia sani corporis (videlecit) motus temperatus sanguinis, pulsus arteriarum validi, pleni, molles, æquales neque nimis frequentes, neque tardi, neque facilè incitandi præter solitum; et respiratio, plena, facilis, lenta, parùm perspecta, neque multum accelerata ab quâvis exercitatione, et vox fortis et sonora, et gravis in viris, haud facilè facta rauca; et gratus halitus oris saltem carens* omni fœtore et os humidum, et lingua nitida verò non nimis rubra et magnus appetitus cibi egens* nullâ ope condimentorum, et sitis modica, et concoctio facilis et bona omnis escæ, sine ructû aut ventriculo gravato ullo modo; et quotidiana naturalis excretio per alvum, et urina facilè retenta (per) justum tempus et facilè reddita cum

and such as completely drowns in placid rest and sweet oblivion of life, and sweetly refreshes the mind with pleasing images.—In addition (to these) the signs of a healthy body are (the following): moderate motion of the blood, the pulsations of the arteries strong, full, soft, regular, neither too quick, nor too slow, nor easily excited beyond the usual (rate); the respiration full, easy, slow, slightly evident, nor much accelerated by any exercise; a voice strong and sonorous, of deep tone in men, not easily made hoarse; an agreeable breath, free at least from all kind of fœtor, a moist mouth, a clean tongue but not too red; a great appetite for food, requiring the aid of no condiments, moderate thirst, and easy and good digestion of every kind of food, without flatulence, or the stomach oppressed in any degree; a daily and natural alvine evacuation, and urine easily retained a proper time, and as easily expelled at the proper period, depositing in due time its proper sedi-

* Verbs of abounding, &c. and the opposite ones, expressing want, govern the ablative case.

sit demùm tempus; depo-
nens suo tempore idoneum
sedimentum, quamvis (sit)
varii coloris et crassitudinis
(pro ratione cibi que potûs);
quo tardiùs, ferè eo meliùs;
et exhalatio libera et con-
stans per cutem verò citra
sudorem nisi validæ causæ
concurrant; et secretiones
internæ pariter constantes et
liberæ, neque nimix, neque
nimis parcæ.—Denique est*
(pars) sani hominis appetere
Venerem et valere ad eam,
et procreare sobolem:—Vero
est quædam sanitas singu-
laris et propria fæminis,
quippe quæ habeant quas-
dam partes quæ fungantur
muneribus multum diversis
a virilibus. Igitur inter
signa sanitatis harum oportet
notare æquabilem et li-
berum fluxum mensium ne-
que nimium neque nimis
parcum; et graviditatem
felicem et partum facilem
et secretionem copiosam
boni lactis, tempore quo
debet.—Præterea (signum)
est sani et validi corporis
utriusque sexus non modo

sit facile reddita; et quamvis varii
coloris et crassitudinis et copix
(pro ratione cibi potusque) sedi-
mentum idoneum suo tempore de-
ponens; quo tardius, eo fere me-
lius; et exhalatio per cutem libera
et constans, citra vero sudorem ni-
si validæ causæ concurrant; et
secretiones internæ pariter con-
stantes et liberæ, neque nimix ne-
que nimis parcæ.—Sani denique
hominis est Venerem appetere, et
ad eam valere et sobolem procre-
are.—Fæminis vero sanitas quæ
dam singularis et propria est,
quippe quæ partes quasdam ha-
beant, muneribusque fungantur a
virilibus multum diversis. Harum,
igitur, inter sanitatis signa notare
oportet, æquabilem et liberum
mensium fluxum, neque nimium
neque nimis parcum; et gravidita-
tem felicem, et partum facilem, et,
quo decet tempore, copiosam boni
lactis secretionem.—Præterea sa-
ni et validi corporis utriusque sex-

ment, although of varied colour and thickness, according to the nature of the food and drink, the slower (it takes place) the better; a free and constant cutaneous exhalation, not to sweating, unless powerful causes concur (to produce it); the internal secretions likewise constant and free, neither in excess nor too scanty. It is finally the (province) of a healthy man to desire sexual intercourse, to be competent to it, and to procreate offspring. But there is a certain kind of health peculiar and belonging to women, inas-
much as they have certain parts, and perform functions differing consi-
derably from those of men. Therefore, amongst their characters of health,
it is necessary to observe a regular and free discharge of the menses, neither
in excess nor too scanty, (also) a favorable state of pregnancy, easy labour,
and a plentiful secretion of good milk at the season in which it is required.
Moreover, it is (a character) of a healthy and strong body of either sex, that

* *Sum*, implying the duty of a thing, requires the genitive case after it.

us est, non modo suis, nihil impedi-
diente, probe functum esse mune-
ribus, sed, tenacis prosperæ suæ
valetudinis, multis, cœli, victus,
vitæ generis, varietatibus semet ac-
commodasse, et sic plurimas mor-
borum causas impune tolerasse,
quales minus firmum aut sanum
corpus vel prorsus fregissent, vel
saltem in grave valetudinis discrimen
perduxissent.—Postremo, sa-
nitas eidem homini quamvis sem-
per sanissimo non prorsus eadem
est. Plurimæ enim et gravissimæ
varietates corporis ab ætate omni-
no pendent: nec quisquam homi-
num ab aliis ejusdem ætatis tan-
tum differt, quantum variis vitæ
temporibus a se ipso discrepat;
sive formam spectemus, sive cor-
poris vires, sive animi dotes, sive
demum intima corporis penetralia
muneraque ab iis pendentia per-
scrutemur. Quo fit, ut valetudo
quam perfectissima, quæ corpus
parvum et tenerum ad suum vigo-

*probe functum esse suis
muneribus, nihil impedi-
dente (signum est) suæ tenacis
prosperæ valetudinis (illud
i. e. corpus) accommodasse
semet multis varietatibus,
cæli, victûs, generis vitæ,
et sic tolerasse impune plu-
rimas causas morborum,
quales (causæ) vel prorsus
fregissent corpus minus
firmum vel sanum vel sal-
tem perduxissent in grave
discrimen valetudinis.--Pos-
tremo sanitas non est prorsus
eadem eidem homini
quamvis sanissimo. Enim
plurimæ et gravissimæ va-
rietates corporis pendent om-
nino ab ætate; nec quisquam
hominum tantum differt ab
aliis (hominibus) ejusdem
ætatis, quantum discrepat a
se ipso (in) variis temporibus
vitæ; sive (nos) spectemus
formam, sive (spectemus)
vires corporis, sive dotes ani-
mi, sive demum perscrute-
mur intima penetralia cor-
poris que munera pendentia
ab iis. Quo fit, ut valetudo
quam perfectissima quæ pri-
mo perdurit corpus parvum
et tenerum ad suum vigorem*

it has not only performed its functions well, when nothing is impeding it, but it is a (mark) of its tenacious good health, that it has accommodated itself to the different varieties of the atmosphere, food, and mode of life, and has thus borne with impunity many causes of diseases, such as either would have entirely broken down a body less firm or healthy, or would at least have brought it into great danger to the health. Lastly, health is not entirely uniform to the same person, although always very healthy. For many, and most important varieties of the body, depend entirely upon the age; nor does any man differ from other individuals of the same age so much, as he differs from himself at the different periods of his life, whether we look to his figure, the powers of the body, the energies of the mind, or lastly, we inquire into the inmost recesses of the body, and the functions depending upon them. Hence it is, that the most perfect health, which first conducted the small and tender body to its vigour and perfection, and long supported it in

et perfectionem, et sustinuit (illud) diu in hoc statu, idem minuat paulatim et perducit tandem ad finem; nam

"Morimur nascentes, quæ finis pendet ab origine."

20. *Cognitio, harum rerum, quæ omnes (res) pertinent ad sanum corpus, vocatur Physiologia humani corporis.*

21. *Verum enimvero, homo non modo nascitur, crescit, viget, senescit, (et) moritur certo tempore secundum leges Naturæ; sed (ille) quoque fit obnoxius variis morbis prope innumeris qui corrumpant formam quamvis pulchram, (qui) frangant vires, (qui) impediunt singulas actiones corporis (qui) sæpe excrucient corpus gravibus doloribus neque pepercerint * ipsi "particulæ Divinæ auræ."*

22. *Alii horum (morborum) adoriuntur infantem*

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

22. Horum alii infantem, fere nascentem, adoriuntur, nec raro

this state, by degrees reduces it, and at last conducts it to its termination, for scarcely born we die, and the end is connected with the beginning.

20. The knowledge of these things, all which have reference to the healthy body, is called the Physiology of the human body.

21. But indeed, man is not only born, grows up, is vigorous, (then) becomes old, and dies at a certain time, according to the laws of Nature; but he is also liable to various and nearly numberless diseases, which may destroy his form, though so beautiful, which may break down its strength, may impede its separate actions, and may often torment the body with excruciating pains, nor will spare (the mind) itself, "that particle of divine essence."

22. Some of these diseases assault the infant almost at birth, nor unfrequently destroy it; others rather attack the youth, confiding in his strength;

* *Parco peperci* governs a dative case.

extinguunt. Alii juvenem viribus fidentem 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 macerent, donec tandem vita prorsus inops et miseranda cum optanda morte commutetur.

23. Tot tamque variorum graviumque morborum multas oportet esse causas; quarum naturæ 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 statu sano deflexerit, ut solitæ actiones vel prorsus impediuntur vel ægre aut cum dolore perficiantur. Tunc dicitur homo

ferè nascentem, nec rarò extinguunt (illum). Alii potiùs invadunt juvenem fidentem (suis) viribus, nunc rapiunt (illum) citâ morte, nunc consumunt (illum) lentâ tabe; dum alii (morbi) magis obsident semitam labentis ætatis, quâ facilius opprimant corpus, debile, exhaustum impar prælio: vel si non statim oppresserint, macerent longâ valetudine donec tandem vita prorsus inops et miseranda commutetur cum optandâ morte.

23. Oportet causas tot tamque variorum graviumque morborum esse multas: scientia naturæ et sedis et effectuum quarum (causarum) et modi quo afficiant humanum corpus, vocatur Pathologia. Vero hæc (Pathologia) est vel generalis vel specialis: principia prioris quarum tantum hic traduntur.

24. Morbus adest, quum corpus tantum deflexerit a sano statu, ut solitæ actiones vel prorsus impediuntur, vel perficiantur ægrè aut cum dolore.—Homo tunc dicitur

at one time they snatch him away by sudden death, at another time they destroy him by slow consumption; whilst others rather beset the path of declining age, in which they can more easily weigh down the body, weak, exhausted, and unequal to the contest; or if they have not immediately overcome it, they waste it away by tedious illness, until at last, life, quite helpless and wretched, is exchanged for a hoped-for death.

23. It is necessary that the causes of so many, so various and severe diseases should be numerous; a knowledge of the nature and situation and effects of which, and of the mode in which they affect the human body, is called Pathology. This (pathology) is either general or special: the principles of the former of which only, are treated of here.

24. Disease is present when the body has so far deviated from the healthy state, that its customary actions are either entirely impeded, or performed with difficulty or with pain. Man is then said to be ill. Its own disorders

ægrotare. Sua vitia possunt accidere unicuique parti corporis, tam fluidæ quam solidæ, (et) unicuique functioni. Verò hæc occurrunt vel singula, vel plura simul juncta. Hinc (sunt) simplices vel compositi morbi.

25. *Erit exemplum simplicissimi (morbi) si quælibet partes corporis ruptæ, vel læsæ quâvis alio modo fuerint factæ minus idoneæ propriis muneribus; aut si, fabricâ partium singularum omnino salvâ, ipsæ (partes) sive solidæ sive fluidæ aberraverint a statu sano; veluti si, propriis dotibus amissis vel corruptis, (illæ partes) adeptæ* sint sibi alias et fortasse noxias: vel denique si moventes vires fuerint nimie vel nimis parvæ, aut directæ contra normam Naturæ.*

26. *Verò rarissimè spectamus morbos hujusmodi, ferè attingimus acie solâ mentis; quippe nimirum etiam simplicissimi, sive gignant alios morbos, sive*

ægrotare. Unicuique corporis parti, tam fluidæ quam solidæ, unicuique functioni, sua accidere possunt vitia. Hæc vero vel singula occurrunt vel plura simul juncta. Hinc morbi simplices vel compositi.

25. *Simplicissimi exemplum erit, si quælibet corporis partes ruptæ, vel quivis alio modo læsæ, propriis muneribus minus idoneæ factæ fuerint: aut si, salva omnino singularum partium fabrica, ipsæ, sive solidæ sive fluidæ, a statu sano aberraverint: veluti si, propriis amissis vel corruptis dotibus, alias et fortasse noxias sibi adeptæ sint; vel denique si vires moventes, aut nimie, aut nimis parvæ fuerint, aut contra Naturæ normam directæ.*

26. *Hujusmodi vero morbos rarissime spectamus, fere sola mentis acie attingimus; quippe nimirum simplicissimi etiam, alios sive morbos, sive morborum indicia seu*

may happen to every part of the body, whether fluid or solid, and to every function. But these again occur single, or many united together. Hence there are simple or compound diseases.

25. There will be a specimen of a most simple (disease,) if any parts of the body, being torn or injured in any other way, have been rendered less fitted for their proper functions; or if, the structure of individual parts being quite sound, the solids or fluids themselves have deviated from the healthy state; for example, if, their own qualities being lost or corrupted, they have acquired to themselves others, perhaps, injurious; or lastly, if the moving powers be either too great, or too feeble, or directed contrary to the rule of Nature.

26. We very rarely see diseases of this kind, we generally reach them by the acuteness of the mind alone; for, indeed, even the most simple diseases give rise either to other diseases or signs or symptoms of diseases, and are

* *Adeptæ*, from *adipiscor*.

symptomata gignant, et his solis dignoscantur. Symptomata vel morbi indicia sunt singulæ quæ in ægro præter naturam observantur res; illorum vero præcipua, evidentissima, constantissima, morbum faciunt, definiunt; alia alia producentia, prima ab ipsa morbi causa provenientia.

27. Varia profecto et prope innumera in ægris observantur morborum signa, quorum notitia, 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 manifestas, vel quæ sensibus percipiuntur, mutatas aut vitiatas. Omnis nimirum morbus in læsa

indicia seu symptomata morborum, et dignoscantur ab his solis. Symptomata vel indicia morbi, sunt singulæ res quæ observantur in ægro præter naturam; verò (symptomata) præcipua, evidentissima constantissima faciunt (et) definiunt morbum; alia producentia alia, prima provenientia ab ipsâ causâ morbi.

27. Profectò varia et propè innumera signa morborum observantur in ægris, notitia quorum (signorum) erit utilis imprimis facientibus medicinam, tum ad cognoscendos (morbos), tum quoque ad sanandos* vel levandos* morbos. Verò immensa varietas talium signorum solet referri haud ineptè ad tria genera seu capita; scilicet (ad) functiones impeditas; (ad) sensus sive perceptiones molestas; et (ad) speciem quæ alias qualitates corporis manifestas, vel quæ percipiuntur sensibus mutatas aut vitiatas. Nimirum omnis mor-*

distinguished by these alone. Symptoms or signs of disease are all those circumstances which are observed in the sick man, contrary to nature; but the principal, most evident, and most constant (of them,) form and define a disease; some giving rise to others, and the first arising from the cause itself of disease.

27. Indeed, various and nearly numberless signs of diseases are observed in sick-people; a knowledge of which will be especially useful to those practising medicine, both for discovering as well as for curing or relieving diseases. The immense variety of such symptoms is accustomed to be referred, not improperly, to three genera or heads, namely, impeded functions, troublesome sensations or perceptions, and the appearance, and other evident qualities of the body, such as are perceived by the senses, changed or disordered. Every disease principally consists in some injured function;

* *Gerunda* are sometimes converted into nouns adjective, as *ad sanandos, morbos*, &c.

bus maximè consistit in aliquâ læsâ functione. Verò nulla harum (functionum) ferè potest lædi vel impediri, quin brevi facessat quandam molestiam ægro; quâ sciat se malè habere (se). Nec quisquam ferè diù potest ægrotare, quin species et forma corporis, et color decens vultus, quæ solent contingere prosperæ valetudini que (solent) depingere eandem tam pulchrè, corrumpantur plus minùsve.

23. Igitur signa animalium functionum læsarum imprimis sunt notanda medico inter indicia adversæ valetudinis; scilicet, indicia sensus que voluntarii motus habentium se malè. Enim singuli sensus externi possunt vitari variis modis et revera sæpe vitantur; nempe (sensus) aut deficiunt et torpent, aut fiunt nimis acuti, nec exercendi sine molestiâ, aut fiunt abnormes et depravantur. Porro sensus interni sæpe afficiuntur a morbis. Vero affectiones omnium sensuum hujusmodi, vindicant sibi optimo jure attentionem medici, quatenùs

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

28. Medico, igitur, inter adversæ valetudinis indicia imprimis notanda sunt læsarum functionum animalium signa; sensus, scilicet, motusque voluntarii male se habentium indicia. Singuli enim sensus externi variis possunt vitari modis, et revera sæpe vitantur; nempe aut deficiunt et torpent, aut nimis acuti fiunt, nec sine molestia exercendi, aut abnormes fiunt et depravantur. Sensus porro interni sæpe a morbis afficiuntur. Hujusmodi vero omnium sensuum affectiones medici attentionem optimo

for none of these can commonly be injured or impeded, but that in a short time it produces some uneasiness to the sick man, by which he knows that he is not well; nor commonly can any one be long ill, but that the appearance and form of body, and the comely colour of the countenance, which are accustomed to occur to good health, and depict it so beautifully, are more or less altered.

28. Therefore, the characters of impaired animal functions are especially to be observed by the physician, amongst the symptoms of bad health; namely, indications of sensation and voluntary motion being disordered. For all the external senses may be disordered in various ways, and are in truth often impaired; that is, they are either defective and torpid, or become too acute, and not to be exercised without uneasiness, or become irregular and are depraved. Moreover, the internal senses are often affected by diseases. But the affections of all the senses of this description, by the greatest right,

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 paralyti; 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 mo-

non modo (affectiones) ipsæ fiant morbi haud levis momenti, sed quantum sæpè, quam optime ostendant naturam, et augmentum, vel remissionem aliorum que graviorum morborum.

29. *Est par ratio, cur semper respiciendum sit ad conditionem et (ad) læsiones facultatis movendi; sive illa (facultas) defecerit, ut solet fere in omnibus morbis, quod vocatur debilitas vel (illa facultas) fuerit perdita ut in paralyti; vel (sive illa sit) intensa præter naturam, quod nonnunquam accidit in quibusdam affectionibus cerebri; sive demum (illa) fuerit abnormis, veluti in convulsionibus que (in) aliis similibus morbis.*

30. *Neque sanè conditio ægri debet negligi quod (refert) ad somnum; qui sive ipse sit habendus pro functione corporis sive tantum (habendus est) pro vacatione ab aliis functionibus, habet suum naturalem modum et consentaneum legibus*

claim for themselves the attention of the physician, as far as they themselves not only become diseases of no slight importance, but inasmuch as they frequently point out in the best possible manner the nature and increase and remission of other and more severe diseases.

29. There is equal reason why we must always look to the condition and injuries of the faculty of moving, whether it be defective, as is usual in nearly all diseases, and is called debility, or whether it has been lost, as in paralysis, or whether it be unnaturally powerful, which occurs sometimes in certain cerebral affections, or lastly, whether it has been irregular, as in convulsions and other like diseases.

30. Nor indeed should the state of the patient be neglected in reference to sleep, which, whether it is to be considered as a function of the body, or as a cessation from the other functions, has its own natural mode, according with the laws of health; which mode is wont to be deranged considerably

sanitatis, qui modus solet turbari haud parùm in plerisque morbis; ita ut somnus sit vel nullus vel nimius vel interruptus vel terrificus diris somniis, neque somnus qui fuerit, recreet ægrum ut decet.

31. *Autem signa læsarum vitalium functionum vel malè habentium se, sunt adhuc majoris momenti; scilicet (sunt illa) quæ non modò benè ostendant naturam morbi et statum ægri, sed quoque non careant suo periculo, si saltem fuerint vehementiora. Hujusmodi sunt omnes varietates pulsuum, nimirum quæ ostendant aut motum sanguinis deficere, aut esse nimium aut abnormem, veluti in febribus, (in) inflammationibus, (et in) defectionibus animi.*

32. *Morbidæ affectiones spiritûs non immeritò tenent proximum locum his, veluti omnis velocitas vel insolita tarditas spirandi, aut quævis difficultas, aut tussis, sternutatio, suspirium et similia; quibus (affectionibus) for-*

dus 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. 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 febribus, 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; qui-

in many diseases. So that sleep may be either wanting, or excessive, or interrupted by frightful dreams; nor can sleep which may have occurred, refresh the patient as it ought.

31. The signs of injured or deranged vital functions are of still greater importance; for they are those which not only can point out the nature of the disease and state of the patient, but are also not free from danger themselves, at least if they have been of a rather more violent character. Of this description are all the varieties of pulses; for they shew either that the circulation of the blood is languid, or too rapid, or irregular, as in fevers, inflammations, and faintings.

32. Morbid affections of respiration not undeservedly occupy the next place to these, as every unusual velocity, or retardation, or any difficulty of breathing, or cough, sneezing, sighing, and the like; to which, perhaps, it

bus fortasse adjicere licet varias vocis affectiones, quamvis profecto hæ 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 negligendæ sunt læsiones functionum utrique sexui, muliebri imprimis, propriarum.

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

tasse licet adjicere varias affectiones vocis, quamvis profecto, hæ potius pertineant ad primum genus. (29.)

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

34. *Quod pertinet ad sensus ingratos vel molestos; (sensus ingrati et molesti) observantur frequentissimi comites et signa morborum, pauci quorum (morborum) carent aliquâ molestiâ saltem. Enim (homo) non aliter ac sanus fungitur suis*

is proper to add various affections of the voice, although, indeed, these may rather appertain to the first kind (29.)

33. Moreover the signs of injured natural functions are carefully to be observed: for instance, deficiency, excess, depravation, or any unusual condition of hunger or thirst; the various disorders of the action of mastication, deglutition, and digestion; the state of the bowels, whether confined more than natural or relaxed; the excess or deficiency, a difficulty, or depravation, of the secretions, and excretions, which fall most under our observation, particularly of the urine and sweat. Nor indeed the injuries of the functions peculiar to each sex, especially the female, are to be overlooked.

34. As to what relates to troublesome and uneasy sensations, they are very frequently observed as attendants and symptoms of diseases, few of which are at least free from some degree of uneasiness. For man when healthy per-

plerisque muneribus facillè, nec sine quâdam voluptate; sic æger his (muneribus) impeditis, dolet, angitur, que afficitur variis molestiis. Igitur (hæc) pertinent ad hoc caput (scilicet) dolor anxietas, pruritus, que sensus lassitudinis, torporis, stuporis, caloris, frigoris, ponderis, et forsitan bene multi alii sensus ingrati (scilicet) nausea vertigo, tinnitus, &c. quos placuit medicis relegare aliò; omnium quorum (sensuum) tanta est vis et molestia ut sæpè efficiant magnam partem morbi et miserrimè agitent, fatigent, torqueant, terreant, ægros, tandem evasuri terribiliores* morte ipsâ. Neque profectò tales sensus molesti semper carent aliquo periculo,† qualescunque fuerint causæ eorum.

35. Ad tertium genus signorum morbidorum nimirum (ad) qualitates manifestas corporis vitiatas, omnes res referuntur, observandæ in ægro præter naturam, neque pertinentes ad

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

forms his numerous functions with ease, and not without some pleasure; so the sick man, when these functions are impeded, is in pain, is fretted and affected with various annoyances. Therefore, to this head belong pain, anxiety, itching, a sensation of weariness, languor, stupor, heat, cold, weight, and perhaps very many other unpleasant sensations, such as nausea, vertigo, ringing of the ears, &c. which it has pleased medical men to place elsewhere; of all which, such is the influence and trouble, that they often form a great part of the disease, and most frightfully agitate, fatigue, torment, and frighten those who are ill, at last about to become more terrible than death itself. Nor, indeed, are such uneasy sensations always free from some danger, whatever may have been the causes of them.

35. To the third kind of morbid signs, such as visible vitiated qualities of the body, are referred all those circumstances to be observed in a sick man as

* Comparatives, when the sense is rendered complete by *quam*, require the ablative case after them, as *terribilior morte*, i. e. *quam mors*.

† Verbs of abounding, and the reverse of them, govern the ablative case, as *carent periculo*.

ad alia genera pertinentes, de quibus nostris sensibus, non ægri dictis aut querelis, certiores fimus. Cujusmodi sunt, color corporis et præsertim vultus vitiat, 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

alia genera de quibus fimus certiores* nostris sensibus non dictis aut querelis ægri. Cujusmodi (generis) sunt, color corporis et præsertim vultus, vitiat, et pallidus præter solitum, ruber, flavus, fuscus, lividus, varians; quoque peculiaris aspectus vultus, pendens ab actione musculorum, aut (a) motu sanguinis, et sæpe a statu animi, que describendus nullis verbis, nunquam negligendus tamen qui depingit melius et certius omni sermone conditionem ægri (in illo) quod (pertinet) ad vires vitæ et levamen aut augmentum morbi: Imprimis variæ conditiones oculorum, (scilicet) languor et hebetudo, aut rubor aut splendor, aut ferocitas insolita que distortio eorum, præter solitum; et aliæ species morbidæ, veluti si sunt excavati, vel alter (oculus) vel uterque clauditur, vel alter apparet major altero non ita (ut) solitus. Quoque conditiones oris et linguæ sunt sedulo observandæ,*

unnatural, nor belonging to the other genera, (but) of which we are informed by our (own) senses, (and) not by the words and lamentations of the patient. Which description are of a vitiated colour of the body, especially of the countenance, unnaturally pale, red, yellow, brown, livid, or changeable; also a peculiar appearance of the countenance, depending upon the action of the muscles, or circulation of the blood, and often upon a state of mind, not to be described by any terms, and never to be neglected, but which depicts better and more truly than all language, the state of the sick man in reference to the powers of life, and the decrease or increase of the disease. (Such are) particularly different states of the eyes, (as) heaviness and dullness, redness, or brightness, or unusual ferocity or distortion of them beyond what is customary, also other morbid appearances, as when they are sunk, or one or both are closed, or one appears larger than the other, not as usual. Also the states of the mouth, and especially of the tongue,

* *Fio certior*, to be informed, or made acquainted with.

rubræ, albidæ, sordidæ, nigricantis, aridæ, quæ præsententes demonstrant morbum; decedentes aut versæ in melius sæpè ostendunt eundem (morbum esse) decedentem. Quin et varii morbidi odores aliquando detegunt naturam morbi, et ideo merentur observari; scilicet in solitus odor sive fætor halitus pulmonis vel cutis, vel singularum excretionum, vel universi corporis, vel partis cujusvis ejus, veluti in carcinomate, variolâ et in morbis putridis. Quodque multæ vitiatæ qualitates corporis, quæ maximè percipiuntur tactu, (scilicet) calor, frigus, durities vel rigiditas, mollities, humiditas, siccitas, crassitudo, tenuitas, tumor, macies, vel universi corporis vel singularum partium debent observari omni curâ. Eo magis decet attendere ad vitia qualitatum manifestarum corporis hujusmodi, quia (illa vitia) facilè observentur et sint minimè fallacia, neque

conditiones, rubræ, albidæ, sordidæ, nigricantis, aridæ, quæ præsententes 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 cujusvis, veluti in carcinomate, variola, morbis putridis. Multæ quoque, quæ tactu maxime percipiuntur, qualitates corporis vitiatæ, calor, frigus, durities vel rigiditas, mollities, humiditas, siccitas, crassitudo, tenuitas, tumor, macies, vel universi corporis vel partium singularum, omni cura observari debent. Ad hujusmodi autem qualitatum manifestarum corporis vitia eo magis attendere decet, quia facile observentur, et minime fallacia sint,

are carefully to be examined, whether red, white, furred, blackish, or dry, which (states) when present indicate disease, (but) disappearing or changed for the better, show that the disease is yielding. Besides, also various morbid odours sometimes detect the nature of the disease, and on that account are worth being observed; for instance, an odour, or unusual fætor of the exhalation of the lungs or skin, or of the different secretions, or of the body generally, or of any part of it, as in carcinoma, smallpox, and in putrid diseases. Also many vitiated qualities of the body, which are principally perceived by the touch; (such as) heat, cold, hardness, or stiffness, softness, moisture, dryness, thickness, thinness, swelling, emaciation, either of the whole body or of the separate parts, ought to be observed with all possible care. It is so much the more proper to attend to this description of disorders of the evident qualities of the body, because they may be easily seen, and are by no means fallacious, nor can the patient conceal them from

neque æger 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

æger possit celare ea* medicum,* neque, ut medicus intelligat rem, opus sit multis interrogationibus, quæ sunt sæpè admodum ingratae.*

36. Causa dicitur multifariam, apud medicos, cum disserunt de morbis; et profecto (in) sensu aliquantum diverso ab eo, quo (sensu) hoc vocabulum solet usurpari, vel in scriptis philosophorum, vel in communi sermone hominum. Igitur oportet unumquemque incumbentem studio medicinæ scire varios medicos sensus vocabuli causæ, vel saltem usitatissimos.

37. Imprimis medici distinguunt causas morbi in proximam et remotas; iterum (distinguunt) remotas in prædisponentes et occasionales, vel excitantes vel nocentes potentias.

38. Proxima causa, ut medici scriptores definiunt

the medical man; neither, in order that the physician may understand the disease, is there need of many questions, which are frequently very unpleasant.

36. The word cause is mentioned multifariously by medical men when they treat of diseases; and, indeed, in a sense somewhat different from that in which this term is wont to be used in the writings of philosophers, or in common discourse. Therefore it is necessary that every one applying himself to the study of medicine should know the various medical meanings of the word cause, or at least those most in use.

37. In the first place physicians distinguish the causes of disease into proximate and remote, and again the remote causes into predisposing and occasional, or exciting and noxious powers.

38. Proximate cause, as physicians define it, is that which when present

* Verbs of teaching and concealing, &c. frequently govern two accusative cases after them, as *docebo te istos mores, non potest celare ea medicum.*

(eam) est illa quæ præsens facit morbum, sublata tollit, mutata mutat.

39. *Prædisponens causa est illa quæ tantum reddit corpus opportunum morbo; scilicet ut, causâ excitante admotâ, (corpus) incidat in morbum.*

40. *Demum excitans vel occasionalis causa est ea quæ excitat morbum in corpore jam facto proclivi (39).*

41. *Igitur conditio corporis quæ facit (corpus) obnoxium morbo, est corrigenda: remotæ causæ, quæ excitant morbum, sunt evitandæ; proxima causa morbi (est) tollenda; et singula indicia ejusdem, quæ sunt maximè molesta, sunt mitiganda. Sic morbi præcaventur, sanantur (et) levantur.*

42. *Remotior causa, quæ facit tantum proclivitatem ad morbos, semper hæret in corpore ipso, licet sæpè duxerit primam originem extrinsecus; verò excitans (causa) potest esse vel intus vel extrinsecus. Utrâque*

præsens morbum facit, sublata tollit, mutata mutat.

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

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 sæpè extrinsecus primam originem duxerit: causa vero excitans vel intus vel extrinsecus esse potest.

constitutes disease, which when removed takes it away, and which when altered changes it.

39. A predisposing cause is that which only renders the body liable to disease; that is to say, that, an exciting cause being applied, the body may fall into disease.

40. Lastly, the exciting or occasional cause is that which excites disease in a body already rendered liable to it.

41. Therefore the state of the body, which renders it exposed to disease, is to be corrected; the remote causes, which excite disease, are to be avoided; the proximate cause of the disease is to be removed; and the different symptoms of it, which are particularly troublesome, are to be mitigated. In this way diseases are prevented, cured, and relieved.

42. The more remote cause, which produces only a tendency to diseases, always is inherent in the body, although it has frequently derived its first origin from without; but the exciting cause can be either internal or exter-

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 admota 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 conditio diu perstans eo usque ingravescit, ut sola, nulla 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, mobilitas nimia, corporis plenitudo, a nimia sanguinis abundantia hujusmodi exempla sunt.

(causâ) concurrente morbus fit, quem morbum neutra (causa) sola potest efficere. Enim neque in omni homine omnis excitans causa morbi facit morbum; neque omnes (homines) qui jam sunt facti proclives ad morbos, nullâ causâ excitante admotâ, incidunt in morbos.

43. *Itaque corpus jam factum opportunum morbo, videtur deflexisse nonnihil a statu sano et perfectissimo, licet actiones ejus (i. e. corporis) nondum adedè impediuntur, ut verus morbus rectè dicatur adesse (24). Vero nonnunquam talis conditio corporis diù perstans ingravescit eo usque, ut sola (conditio), nulla causâ excitante adjectâ, faciat morbum justum et manifestum; vel, ut quidam amant loqui, fiat quoque causa excitans. Debilitas generalis partium solidarum, nimia mobilitas partium solidarum quæ, causâ distinctionis, dicuntur vivæ, plenitudo corporis a nimia abundantia sanguinis, sunt exempla hujusmodi.*

nal. Both of them concurring, disease is established, which neither of them alone can produce. For neither does every exciting cause produce disease in every person, nor do all men, who are already become predisposed to diseases, without an exciting cause being applied, fall into diseases.

43. Therefore, the body already rendered liable to disease, appears to have declined somewhat from its healthy and most perfect state, although its actions are not yet so much impeded, that a real disease may be properly said to be present. But sometimes such a state of body, long continuing, increases to such a degree, that it alone may form a real and evident disease; or as some like to express themselves, it may become also an exciting cause. General weakness of the solids, excessive mobility of the solids, which for the sake of distinction are called living, a full habit of body from too much blood, are instances of this description.

44. *Nec quisquam hominum habet valetudinem tam firmam, que tantum robur corporis, quin quibusdam causis excitantibus admotis, (ille) incidat in gravissimos morbos. Variola semel, lues venerea sæpe, inficiunt etiam sanissimos; venena necant; nimium caloris vel frigoris nocet multimodis.*

45. *Quoque excitans causa quanquam (illa) non statim induxerit morbum, si diù perstiterit, paulatim corrumpet constitutionem corporis quamvis validissimam, et reddet obnoxiam variis morbis; scilicet, gignit alteram remotam causam, nempe (talem) quæ facit corpus opportunum morbo vel convertitur in eam. Igitur eadem res nunc potest esse excitans causa, nunc rursus remotior causa.— Intemperies cœli, desidia, luxus, sunt exempla hujusmodi.*

46. *Porrò, de his tribus generibus causarum morbi, juvabit scire, notionem re-*

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 remotarum*

44. Nor has any one such firm health and such strength of body, but that (if) certain exciting causes be applied, he may fall into very severe diseases. Smallpox once, lues venerea, frequently infects even the most healthy persons. Poisons destroy; and excess of heat or cold is injurious in many ways.

45. An exciting cause also, although it may not directly have produced disease, if it has long continued, will gradually destroy the constitution of the body, although very strong, and will render it liable to various diseases; for it generates another remote cause, namely, such as renders the body liable to disease, or is converted into it. Therefore the same circumstance at one time can be an exciting cause, at another time a more remote one. Inclemency of weather, idleness, and luxury, are instances of this kind.

46. But (concerning) these three kinds of causes of disease, it will be useful to know, that the idea of each kind of remote causes (38) is proper, and

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 temere a rebus abstracta. Quærunt enim medici, et non facile inveniunt, sibimet fingunt aliquid causæ omnis morbi, unde iste morbus oriatur, eodem fere modo ac variæ mutationes vel effectus, quæ in rebus inanimatis observantur, a

motarum causarum utriusque generis (37) esse justam, et (esse) magni momenti in medicâ re.—Enim quamvis medici sapè erraverint haud parùm de remotis causis variorum morborum, cùm ausi sunt temerè statuere de iis; tamen generales notiones de iis, quæ versarentur in animo ipsis, fuerunt sanæ; quæ sanè remotæ causæ, tam prædisponentes quam excitantes multorum morborum jam sunt satis cognitæ et exploratæ, vel observando, vel experiendo et caute ratiocinando; quæ notitia earum (causarum remotarum) est utilissima medicis.

47. *Verò quod attinet (ad) proximam causam, generalis notio ipsa ejus, si non est prorsus falsa, saltem (est) admodum confusa et obscura, et temerè abstracta a rebus. Enim medici quærunt, et non facile inveniunt (quod quærunt), fingunt sibimet aliquid causæ omnis morbi, unde iste morbus oriatur, ferè eodem modo ac variæ mutationes vel effectus quæ observantur in inanimatis rebus, proveni-*

of great importance in the practice of medicine. For although medical men have frequently erred considerably concerning the remote causes of various diseases, when they rashly ventured to determine upon them; nevertheless the general ideas concerning them, which they had turned over in their mind, were correct: and, in truth, the remote causes of diseases, both predisposing as well as exciting, are already well known and ascertained by observing, experimenting, and careful reasoning; and a knowledge of such (remote causes) is most useful to medical men.

47. But as to the proximate cause, the general notion of it, if not entirely erroneous, is at least very confused and obscure, and injudiciously separated from facts. For medical men seek, and not easily finding it, imagine to themselves some cause of every disease, whence the disease may arise, almost in the same way as the various changes and effects which are observed in in-

unt a suis causis. Autem nihil istiusmodi videtur existere in plerisque affectionum, quas solemus vocare morbos, neque profectò potest existere; et talis notio planè oritur, a malè intellectâ naturâ, tum corporis ipsius, tum morborum qui fiunt in eo. Enim morbus non est unus et simplex eventus vel mutatio, qualem solemus contemplari in inanimatis rebus et vocare effectum; sed (ille est) series sæpè longa talium eventuum vel mutationum; quarum (mutationum) aliæ videntur esse causæ aliis (26). Quidem potest fieri, ut unâ alterâve harum sublatâ, tota series vel abrumpatur, vel desinat brevî; et sic morbus mutetur in sanitatem. Sed hoc est minimè perpetuum, neque in omni morbo, neque ferè in quolibet morbo omni tempore. Præterea corpus ipsum habet se longe aliter ac res inanimata, quod ad mutationes quæ fiunt in eo, et (quod ad) causas, sive ex-

suis causis proveniunt. 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, sæpe longa, talium eventuum vel mutationum; quarum aliæ aliis causæ videntur esse (26.) Fieri quidem potest, ut, sublata una alterave harum, 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 quæ in eo fiunt, et causas, sive externas sive

animate objects, proceed from their causes. But nothing of that description appears to exist in many of the affections, which we are wont to call diseases; nor, indeed, can it exist; such an idea evidently arises from the slightly understood nature, as well of the body itself, as of the diseases which take place within it. For disease is not a single and simple event or change, such as we are accustomed to observe in inanimate objects, and to call an effect; but frequently (it is) a long series of such occurrences and changes, some of which appear to be causes to the others. It can indeed happen, that one or two of these being removed, the whole series may be disconnected or shortly cease; and thus disease may be changed to a state of health. But this is by no means a constant occurrence, neither in every disease, nor scarcely in any disease, on every occasion. Moreover the body itself is differently constituted to inanimate objects, as to the changes which take place in it, and as to the external and internal causes whence these proceed. For there is some principle of

internas, unde hæ proveniant. Inest enim corpori 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 accuratione exploratum, vitale principium haud inepte nominandum, cui vix minus quam causis vulgo observatis tribuendæ sunt plurimæ mutationes, tam morbosæ quam salutare, 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 fortasse ab ipsis eorum auctoribus unquam satis intellecta fuerint.

48. Unde vero morbi, vel morborum causæ; Certe ab ipsa imprimis machinæ animalis constitutione. Ut vitrum ex officina

ternas sive internas unde hæ proveniant. Enim aliquod principium mutationis inest corpori vivo, quodammodo simile illi (principio mutationis) quod observatur in herbis et longe alienum a naturâ materiæ inanimatæ, ægrè definiendum, (et) nondum exploratum: eâ diligenti et accuratione quâ par esset, (scilicet) vitale principium haud ineptè nominandum, cui (principio) plurimæ mutationes, tam morbosæ quam salutare quæ eveniunt corpori, sunt tribuendæ vix minùs quam causis vulgò observatis. Quum hæc ita sint, non poterit esse mirum, multa commenta medicorum de proximis causis variorum morborum, esse prorsus futilia, et non modo falsa, sed adeo confusa et obscura, ut vix possint intelligi neque fortasse unquam fuerint satis intellecta ab auctoribus ipsis eorum.

48. Vero unde (sunt) morbi, vel causæ morborum? Certe (illi sunt) imprimis a constitutione ipsâ animalis machinæ. Ut vitrum

change in the living body, in some degree like (the principle of change) which is observed in plants, and widely different from the nature of inanimate matter, difficult to be defined, (namely) the vital principle, not inaptly designated: to which many of the changes both morbid and healthy which occur to the body, are scarcely less to be attributed, than to the causes commonly observed. This being the case, it will not be surprising, that many theories of medical men on the proximate causes of diseases are entirely futile, and not only erroneous, but so confused and obscure, that they can scarcely be understood, nor perhaps have they ever been satisfactorily understood by the authors themselves.

48. But whence are diseases or the causes of them? Certainly they (are) especially from the constitution of the animal machine. As glass issues from

prodit fragile ex officinâ, sic homines nascuntur debiles, caduci, (et) opportuni morbis. Hinc multi morbi communes omnibus, idoneâ excitante causâ modò admotâ. Sed quidem homines præ cæteris plectuntur aliis atque aliis morbis. Ratio hujus rei (est) multiplex.

49. *Ut sanus (homo) gignit sanam prolem, sic morbosus (homo gignit) morbosam (prolem). Hinc sunt hæreditarii morbi transituri in seros nepotes. Hoc modo sæpe nos immeriti luimus delicta majorum. Sunt quidam ex his morbis, qui produnt sese aperte primâ ætate; sunt (alii) qui invadunt pariter omnem ætatem; nec desunt (alii) qui occulti delitescunt usque ad summam senectutem, neque suspecti, que nacti vires, paulatim, demùm erumpunt graviùs, quisque (morbis) suo tempore.*

50. *Sunt (aliqui) morbi vel vitia qui nascuntur nobiscum, neque tamen con-*

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 produnt; 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

the manufactory brittle, so men are born weak, falling away, and liable to diseases. Hence many diseases common to all mankind, provided a proper exciting cause be applied. But some men, compared with others, are afflicted with various diseases; of this circumstance the reason is manifold.

49. As a healthy man begets healthy offspring, so a sickly man begets a sickly one; hence there are hereditary diseases about to pass down to the remotest descendants; and in this way we often undeserving it pay for the vices of our ancestors. There are some of these diseases which openly show themselves in infancy; others attack indiscriminately every age, nor are there wanting (others) which hidden lie dormant even to extreme old age, not suspected, but gaining strength by degrees, burst forth at length with greater severity, each in its season.

50. There are some diseases or defects which are born with us, not however

utero lateret, matre forsan incolumi, foetus tantum a casu quovis aliquid detrimenti acceperit. Sunt forsitan neque simul nati neque congeniti morbi, quos cum prima nutricis lacte infans suxisse videtur.

51. Porro, sunt qui varios ætatis gradus sequuntur, 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 muliebris, suos morbos habet, cum a generali corporis habitu provenientes, tum quoque a fabrica speciali, et statu, et usu, quæ generationi inserviunt partium. Sunt igitur et virorum et fœminarum morbi; sunt virginum, gravidarum, parturientium, lactantium, vetularum.

genita; nempe, si foetus donec lateret in utero, matre forsan incolumi, acceperit aliquid detrimenti tantum ab aliquo casu. Sunt morbi forsitan neque simul nati neque congeniti, quos (morbos) infans videtur suxisse cum primâ lacte nutricis.

51. Porro sunt (morbi), qui sequuntur varios gradus ætatis et comitantur, quisque (morbus) suum (gradum) solum; nempe (illi morbi) qui ducunt originem ex iis mutationibus, quas corpus subit, variis ætatibus. Hinc (sunt) varii morbi infantum, juvenum, et senum.

52. Quin et uterque sexus præsertim muliebris, habet suos morbos, cum provenientes à generali habitu corporis, tum quoque a speciali fabricâ et statu, et usu partium, quæ inserviunt generationi. Igitur sunt morbi virorum et fœminarum; sunt (morbi) virginum, gravidarum, parturientium, lactantium et vetularum.

congenital; for instance, if the foetus, whilst in the womb, with the mother perchance uninjured, has received some injury only from accident; there are perhaps diseases, neither born with us nor congenital, which the infant appears to have imbibed with the first milk of the nurse.

51. Moreover there are diseases which attend the different stages of age, and accompany, each its peculiar one; namely, those which derive their origin from the various changes which the body undergoes at different periods. Hence the various diseases of children, young and old men.

52. But, moreover, each sex, especially the female, has its own diseases, both arising from the general habit of body, as well as from the special structure and condition and use of the parts which are subservient to generation. There are, therefore, diseases of men and of women (likewise) of virgins, of the pregnant, the parturient, of those suckling, and of women of advanced age.

53. *Cœlum ipsum, sub quo homines degunt nonnunquam facit (illos) ægros; nimirum suum vitium inest unicuique regioni: sive (illa regio) fuerit calidior justo, sive frigidior, sive varia, que obnoxia multis et subitis mutationibus tempestatis.*

54. *Aer ipse quoque, qui purus alit sacram flammam vitæ, factus impurus, potest vel statim extinguere eandem, vel onustus multis vaporibus, (et) corruptus quibusdam nocivis effluviis, inducere magnam cohortem morborum.*

55. *Etiam cibi que potus, quibus utimur, sæpe corrumpuntur, que interdum inquinantur rebus infestissimis sanitati et vitæ; vero iidem, quamvis (sunt) optimi suâ naturâ, sumpti nimiam copiam, nocebunt corpori seriùs vel ocys.*

56. *Porro venena existunt prædita* vi adeo lethali, ut recepta in corpus, vel mini-*

53. *Cœlum ipsum, sub quo degunt homines, nonnunquam ægros facit. - Unicuique nimirum regioni suum inest vitium: sive calidior 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 statim extinguere potest, vel multis vaporibus onustus, aut nocivis quibusdam effluviis corruptus, ingentem morborum cohortem inducere.*

55. *Cibi etiam potusque quibus utimur sæpe corrumpuntur, rebusque interdum inquinantur sanitati et vitæ infestissimis: iidem vero, quamvis sua natura optimi, nimia copia sumpti, seriùs vel ocys corpori nocebunt.*

56. *Existunt porro venena vi adeo lethali prædita, ut vel minima quantitate, sensibusque vix*

53. The sky itself under which men live, sometimes renders them disabled. Its own pernicious quality exists in every region, whether it be hotter or colder than is proper, or variable, and subject to many and sudden changes of the weather.

54. The atmosphere itself also, which (when) pure keeps up the sacred flame of life, (when) vitiated, is enabled in an instant to destroy it, or (when) loaded with many vapours, or corrupted with certain noxious effluvia, may induce a long train of diseases.

55. The food and drink also which we take, are frequently corrupted, and sometimes tainted with things most injurious to health and life; but the same, although the best in their nature, when taken in excess, will injure the body later or sooner.

56. Moreover, poisons exist, endowed with so deadly a power, that received into the body in the minutest quantity, to be scarcely and not possibly de-

* *Dignus, indignus, præditus, &c.* require an ablative case after them, as *præditus ingenio*.

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 morbos 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 cutis foramine materia subtilissima, venenata, fortasse putrescens, quæ diu collecta, neque per auras

mâ quantitate, quæ detegenda sensibus vix ac ne quidem vix, induxerint dirissimos morbos, vel fortasse inevitabilem mortem.

57. Denique homo objicitur innumeris casibus, nec raro maximis periculis, plerumque quidem (ille) evasurus (est) incolumis; tamen sæpè (ille) infelix succumbit: sæpè ille saucius, contusus, fractus aut luxatus* membra, ægre evadit; nonnunquam (ille) prorsus insanabilis (est). Quæ casus hujusmodi, quanquam trahant originem ab externâ causâ, haud raro desinunt in internos morbos.

58. Hæc omnia (sunt) extrinsecus; nec minora pericula imminet intus.

59. Dum homo spirat, fundit venenum lethale sibi aliisque animantibus. Neque halitus solus pulmonis adeo nocet: et materia subtilissima venenata fortasse putrescens, manat ab omni foramine, cutis quæ (materia) diu collecta, neque dif-

ected by our senses, have brought on most deleterious diseases, or perhaps inevitable death.

57. Lastly, man is exposed to innumerable accidents, nor unfrequently to very great dangers, generally, however, likely to escape uninjured; but frequently (being) unfortunate he succumbs; often, however, wounded, bruised, with limbs fractured, and dislocated, he escapes with difficulty, (and) sometimes is entirely incurable. Accidents of this kind, although they take their origin from an external cause, not unfrequently terminate in internal diseases.

58. All these things are derived from without; nor are dangers of less importance threatening within.

59. As long as man breathes, he diffuses a poison, deleterious to himself and to other animals. Nor is the exhalation of the lungs alone injurious, (for) a very subtile and poisonous matter, perhaps putrid, flows from every

* The accusative is sometimes put after adjectives and participles, where the preposition *secundum* seems to be understood, as *dimissus vultum, luxatus membra*.

fusa per auras et denuo admota corpori, aut iterum recepta in id ipsum (i.e. corpus) inficit gravissimis morbis, nec sistit gradum, sed veluti nacta vires per pabulum, grassatur longe que latè per populos.

60. Quoque animales functiones quas regimus nostro arbitrio, aut sæpe negliguntur, aut nimis exercentur. Ex utroque periculum (est.) Desidiâ, sive animi sive corporis, vires utriusque languescunt; haud minùs læduntur nimia exercitatione. Enim provida Parens rerum statuit, ut vires singularum partium, et universi corporis que animi roborentur et acuantur usû; et iterum posuit fines huic; ita ut neque usus quem natura voluit impunè omittatur, neque intendatur ultra modum. Hinc athletæ, et otiosi, et desides pariter (sunt) obnoxii morbis, sed singuli suis; hinc quoque (est) damnum a nullâ aut nimia exercitatione mentis; hinc quoque (sunt) multi

diffusa, et corpori denuo admota, aut iterum in id ipsum recepta, gravissimis morbis inficit; nec sistit gradum, sed veluti vires per pabulum nacta, longe lateque per populos grassatur.

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 omittatur, 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 varii

pore of the skin, which having been long collected, and not scattered through the air, and again applied to the body, or again received into it, infects with most severe diseases. Neither does it stop its progress, but having, as it were, gained strength with its aliment, ranges far and wide amongst the people.

60. The animal functions also which we control by our will, are frequently either neglected, or too much exercised. There is danger from each (extreme.) By indolence either of the mind or body, the powers of both become weakened. They are not less injured by too much exercise. For the provident Parent of nature has ordained that the powers of individual parts, and of the whole body and of the mind should be strengthened and rendered more acute by use: and she has likewise assigned limits to them, so that neither the exercise which nature intended should be omitted with impunity, nor carried beyond moderation. Hence, athletics, the idle, and the indolent,

obnoxii sunt artifices, morbosi fere et degeneres homines; scilicet qui eadem semper arte, ipsaque forsitan parum salubri, occupati, partes quasdam corporis plurimum, sæpe nimis, 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, generalem corporis vigorem, et, quæ ab illo pendet, prosperam valetudinem, male perdunt.

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 valetu-

morbi, quibus varii artifices sunt obnoxii, fere morbos et degeneres homines; scilicet qui semper occupati eadem arte que ipsa forsitan parum salubri, exercent plurimum sæpe nimis quasdam partes corporis, dum parum utuntur multis aliis partibus; vel fortasse multum impediunt functiones earundem, pravo situ corporis aut malo genere vitæ, et sic, dum adipiscuntur mirum usum et robur quarundam partium, male perdunt generalem vigorem corporis, et prosperam valetudinem, quæ pendet ab illo.

61. Cæterum discrimen valetudinis non potest esse leve, et ab iis functionibus tam animi quam corporis, quas (functiones) regimus nullo nostro arbitrio. Imprimis affectus animi (quum) modici gratè excitant, (quum) vehementes, aut graves et diuturni, frangunt pariter vires hujus ac corporis; interdum statim extinguunt hominem, sæpius macerant longâ vale-

are equally liable to diseases, each to their own. Hence also there is mischief from not any, or excessive exercise of the mind; hence also there are many diseases to which artisans are liable, generally sickly and degenerate men; for they being always occupied in the same employment, and that perhaps not a healthy one, exercise to a great degree (and) often too much, certain parts of the body, whilst they make little use of many others; or perhaps they considerably obstruct the functions of the same, either by a bad position of the body, or by a bad mode of living; in this way, whilst they acquire wonderful use and strength of certain parts, they sadly lose their general vigour of body, and that flourishing state of health which depends upon it.

61. Moreover, the danger to health cannot be slight, from the functions of the mind and body which we control by no will of our own. In particular, the affections of the mind, which (when) moderate excite agreeably, (when) violent, or depressing, or long continued, equally break down its strength as well as that of the body: sometimes they destroy instantaneously,

tudine. *Excessus vel defectus somni quo egemus ad reficiendas exhaustas vires, nocent et animo et corpori.*

62. *Multa sunt semper excernenda e corpore, in sanissimo statu. Si hæc retinentur, est malum: si excernuntur plus justo, quodque malum est; si retinenda naturâ, excernuntur sponte vel casû vel arte, iterum est malum. Quoque facillimè intelligitur ex his, sæpe gravissimum periculum posse oriri ab inepto aut intempestivo usû remediorum; quippe quæ aut excitant aut intendant præter naturam varias functiones proprias et necessarias corpori aut sopiant et reprimant que demum sæpe minuant que secretiones et excretiones, sæpe augeant ultra modum vel denique efficiant novas excretiones et detractiones humorum, quales natura neque unquam instituerat in sano statu, neque potest ferre sine damno.*

dine macerant. Somni etiam, quo ad exhaustas vires reficiendas egemus, excessus vel defectus, at animo et corpori nocent.

62. Sunt multa in statu sanissimo e corpore semper excernenda. Hæc si retinentur, malum est: si plus justo excernuntur, 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 intempestivo remediorum usu: quippe quæ varias functiones, corpori proprias et necessarias, aut excitent et intendant præter naturam, aut sopiant et reprimant, secretionisque demum 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.

(but) more frequently waste man away by tedious illness. Excess or want of sleep which we stand in need of to repair the wasted strength, are injurious both to the mind and body.

62. There are many things always to be excreted from the body in its most healthy state. If these are retained, there is mischief; if they are excreted in excess, there is also mischief: (and) if those to be retained are excreted spontaneously, by accident, or by means of art, there is again also mischief. It will be easily understood from this, that frequently the greatest danger may arise from an undue and unseasonable use of remedies; for they either excite or preternaturally force the various functions, proper and necessary to the body, or allay or repress them, or, at length, frequently diminish both the secretions and excretions, or increase them immoderately, or lastly, give rise to new excretions and discharges, such as nature would never have established in the healthy state, nor could produce without injury.

63. Ut solidæ partes interdum flaccescunt, molliuntur, fere solvuntur, propriis muneribus impares 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 invaserit, nulla superest salutis spes. Inest enim corpori vis prorsus mirabilis, qua contra morbos se tueatur, mul-

63. *Ut interdum solidæ partes flaccescunt, molliuntur, ferè solvuntur, (et sunt) factæ impares propriis muneribus; sic fluidæ (partes) nonnunquam spissantur, et formantur in solidas etiam durissimas massas; unde actiones organorum (sunt) impeditæ, (est) insignis dolor et (sunt) varii et graves morbi.*

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

65. *Verum neque homo inermis objicitur tot tantisque periculis; neque, nulla spes salutis superest, simul ac morbus invaserit. Enim vis prorsus mirabilis inest corpori, quâ (vi corpus) tueatur se contra morbos, ar-*

63. As the solid parts sometimes become flaccid, are softened and nearly dissolved, (and) rendered unfit for their proper functions; so the fluid (parts) are sometimes thickened and formed into very hard solid masses; whence the impeded actions of organs, remarkable pain, and various and severe diseases.

64. Lastly, certain animals are to be enumerated amongst the causes of diseases, namely those that support their life by the disease of others. The lord himself of the animals is a prey and habitation to vermin of this kind, which either attack from without or inhabit within, and corrode the viscera (of the body) whilst living, frequently with great mischief and danger to life, and not unfrequently with loss of it.

65. But man is not exposed defenceless to so many and great dangers, nor is no hope of health remaining, as soon as a disease attacks him. For there is an astonishing power in the body, by which it can protect against

ceat multos (morbos), solvat multos jam inchoatos, quam citissimè et optimè, que lentius perducatur alios suo modo, ad felicem exitum.

66. *Hæc (vis) vocatur autocrateia seu vis medicatrix naturæ; notissima medicis atque philosophis et celebrata multum neque immeritò. Hæc (vis) sola sufficit ad sanandos multos morbos, ferè juvat in omnibus (morbis); quin et medicamenta optima suâ naturâ, solummodo tantum valent, quantum excitent, dirigant, gubernent vires hujus. Enim medicina neque prodest cadaveri, neque proficit quicquam, naturâ repugnante. Hic planè est aliquid similis et communis inter salutares vires remediorum, et nocentes (vires) causarum morborum, de quibus jam dictum est (47).¹*

67. *His viribus naturæ vulnera sanantur, fluxus sanguinis compescitur, ossa diffracta coalescunt, multa noxia ejiciuntur e corpore,*

tos arceat, multos jam inchoatos quam optime et citissime solvat, aliosque suo modo, ad felicem exitum lentius perducatur.

66. *Hæc autocrateia 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 cadaveri, neque repugnante natura quicquam proficit. Hic plane est aliquid similis et communis inter salutares vires remediorum, et nocentes causarum morborum, de quibus jam (47) dictum est.*

67. *His naturæ viribus vulnera sanantur, sanguinis fluxus compescitur, ossa diffracta coalescunt, multa noxia e corpore ejiciuntur,*

diseases, drive off many others, relieve those already commenced, in the speediest and best manner, and conduct others by a slower process, in its own way, to a favourable termination.

66. This (power) is called autocrateia, or vis medicatrix naturæ, well known to medical men and philosophers, and much nor undeservedly celebrated. This power alone is sufficient for curing many diseases, and is generally useful in all; and, moreover, medicines of the best description are only useful inasmuch as they excite, direct, and govern the innate powers of this (principle). For medicine is neither of use to a dead body, nor is it of any avail if nature is opposed to it: here evidently there is something alike and in common, between the salutary powers of remedies and the noxious causes of diseases, of which we have already spoken.

67. By these powers of nature wounds are healed, hæmorrhage is stopped, fractured bones unite, and many noxious things are thrown out of the body,

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 nimix et adeo vehementes, ut sint quam ipse morbus magis metuendæ.

69. Leviores morbi naturæ viribus satis tuto relinquuntur; sed nemo sanus hydropem, vel luem 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

et sic mala quæ nulla ars potuisset attingere, evanescent suâ sponte sine externa opo.

68. Igitur meritò medici confidunt his viribus, quæ conantur excitare eas languentes, aut si planè defecerint, tum imitari arte solitas actiones earum. Tamen non semper fidendum est iis solis; quippe, quæ sint nullæ in quibusdam morbis, vero nimix et adeo vehementes in multis, ut sint metuendæ magis quàm ipse morbus (metuendus est).

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

70. Igitur oportet cavere a duplici errore;—neque

and thus maladies, which no art could reach, disappear spontaneously and without external aid.

68. Therefore medical men properly trust to these powers, and endeavour to excite them (when) languid, or if they have evidently failed, to imitate their usual actions by art. However, we must not always trust to them alone, for they, in some diseases, are of no avail, but so excessive and violent in many, that they are more to be feared than the disease itself.

69. The more slight diseases are very safely left to the powers of nature; but no sensible man would have trusted dropsy, or Lues Venerea, or inflammation of of any viscus to them (alone); for they are of no avail in the former; but in the latter most potent, but inappropriate and very dangerous, and about to produce gangrene or suppuration, generally not less destructive.

70. Therefore it is necessary to beware of the twofold error—neither to

spe, nere vires Naturæ, neque colere (illas) nimis religiosè. Enim tantum abest,* ut* semper conveniat* premere vestigia illius, ut sit sæpe necesse tenere iter prorsus contrarium, que niti contra conatus ejus summâ ope.*

71. *Neque natura ipsa docet officium medici cohiberi tam arcto limite; enim illa prodiga suggerit innumera remedia quæ pollent maximis viribus in humano corpore, et valent efficere varias et saluberrimas mutationes in eo. Hoc modo etiam plurimæ causæ morborum queant converti a solerte medico in præstantissima auxilia; scilicet quicquid afficit corpus vehementer, nunc potest esse neci † eidem †, nunc iterum remedio (eidem).*

72. *Verò est (officium) medici, naturâ et causâ morbi cognitâ, judicare quid mutationis requiratur, ut morbus mutetur in sanitatem. Hæc medicina quidem est (medi-*

spernere, neque nimis religiose colere. Tantum enim abest ut semper illius vestigia premere conveniat, ut sæpe necesse sit contrarium prorsus iter tenere, contraque ejus conatus summa ope niti.

71. *Neque medici officium tam arcto limite cohiberi ipsa natura docet: suggerit enim prodiga, innumera remedia quæ maximis viribus 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 converti queant; scilicet, quicquid corpus vehementer afficit, eidem nunc neci (53, 62), nunc iterum remedio, esse potest.*

72. *Medici vero est, cognita natura et causa morbi, judicare quid mutationis requiratur, ut morbus in sanitatem mutetur. Hæc quidem est medicina rationalis sive*

despise the powers of nature, nor to respect them too scrupulously. For it is so far from being proper always to follow her steps, that it is frequently necessary to take a directly opposite course, and to strive against her efforts with all our power.

71. Neither does nature herself shew that the office of the medical man is confined within such narrow limits; for she, bountiful, suggests innumerable remedies, which are endowed with great powers on the human body, and are able to effect many and very salutary changes within it. In this way, also, many causes of diseases may be converted, by a skilful physician, into most powerful auxiliaries; that is to say, whatever affects the body powerfully, at one time may be its death, at another again its cure.

72. It is the duty of the physician, the nature and cause of disease being known, to decide what change may be required, that disease may be con-

* *Tantum abest, ut semper conveniat*, so far is it from being proper, like *tantum abest miles ut perturbaretur*, so far is the soldier from being frightened.

† *Sum*, with many other verbs, take two dative cases after it, as *mare est, nautis exitio, quicquid vehemens est, potest esse neci corpori.*

dogmatica. Est et altera, empirica nimirum, quæ, missis hujusmodi ambagibus, sola remedia quærit et profert certa et definita vi prædita ad certos morbos delendos.

73. Hujusmodi remedia omnis circumforaneus 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 errorem 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

cina) rationalis sive dogmatica. Et est altera (medicina) nimirum empirica, quæ, ambagibus hujusmodi missis, quærit sola remedia et profert illa prædita vi certâ et definitâ ad delendos certos morbos.

73. Omnis circumforaneus medicus jactat remedia hujusmodi, omnis anus credit se possidere, quæ populus qui fere mavult decipi quam sapere, semper fidit talibus remediis; neque profecto, postquam (populus) amiserit sanitatem cum re, sinit facile gratissimum errorem eripi menti; scilicet quem nolit intueri, adeo blanda est cuique dulcedo sperandi pro se. Vero peritissimi medici fatentur et dolent quam pauca remedia istiusmodi adhuc fuerint reperta. Quod si fuerint quædam remedia, quæ pollent in humano corpore vi nondum exploratâ aut intellectâ, id est minimè mirum quippe quia tot morbi existant, natura et causæ quorum (mor-

verted into health. This kind of medical practice is (called) rational, or dogmatic. But there is another kind; namely, the empirical, which laying aside doubts of this description, seeks for single remedies, and brings them forward as endowed with a certain and specific power, for eradicating certain diseases.

¶ 73. Every wandering quack boasts of remedies of this description; every old woman thinks that she possesses (some); and the multitude, who would rather be deceived than instructed, always put confidence in such remedies; nor even after they have lost their health, together with their money, do they easily permit that most grateful delusion to be eradicated from the mind, being such as they are unwilling to see, so sweet is the pleasure to every one of hoping in their own cases. But the most skilful medical men confess and lament, how few remedies of this description have been discovered. But if there should be remedies, which are endowed with some undiscovered and unknown influence upon the human body, it is by no means surprising, inasmuch as there are so many diseases, the causes and nature of which are entirely concealed.

borum) prorsus lateant. Cæterum, quo perfectior medica scientia fuerit, eò facilius erit reddere rationem virium medicamentorum et modi quò afficiant corpus, que prosint in variis morbis.

74. Igitur remedia solent ordinari, secundum manifestos effectus, quos præstant in humano corpore. Vel afficiunt partes solidas vel fluidas. (Illa remedia) alunt, consumunt, firmant, laxant, excitant, (vel) sopiunt illas (partes). Corrigunt atque evacuant has, vitiatas quantitate, vel qualitate; que id (factum est) vel viis naturalibus vel aliis (viis) insolitis vel factis arte. Nec auxilia desunt adversus concretiones formatas intra corpus, aut animalia hospitantia in eodem (63, 64).—Vero scientia effectuum medicamentorum et modi quo afficiunt corpus, vocatur *Therapeia*.

prorsus lateant. Cæterum, quo perfectior fuerit scientia medica, eo facilius erit medicamentorum virium, et modi quo corpus afficiant, 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 firmant, laxant, 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 concretiones intra corpus formatas, aut animalia in eodem hospitantia (63, 64). Medicamentorum vero effectuum et modi quo corpus afficiunt, scientia, *Therapeia* vocatur.

But the more perfect medical science shall become, so much more easy it will be to give an explanation of the power of remedies, of the manner in which they influence the body, and are beneficial in various diseases.

74. Therefore remedies are accustomed to be classed according to the evident effects which they produce in the human body: they either affect the solid or fluid parts. They nourish, consume, strengthen, relax, excite, or depress the former. They correct and evacuate the latter when vitiated in quantity or quality; and (may do) this either by the natural passages, or by others unusual, or produced by art. Nor are remedies wanting for concretions formed within the body, or against animals lodging in the same, (63, 64.) The knowledge of the effects of medicines, and the mode in which they affect the body, is called *Therapeia* (or *Therapeutics*.)

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 lentius. Ab his igitur incipiendum est; quippe quæ 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, vita-

CAP. II.—*De solidâ materiâ ex quâ corpora animalium fiunt, quæ de variis dotibus ejus, tum chemicis tum mechanicis; de conjecturis circa ultimam et minutissimam fabricam ejus; de telâ reticulatâ; necnon de origine, (de) naturâ et (de) usû adipis.*

75. HUMANUM corpus constat ex solidis et fluidis partibus, mutuâ actione, quarum (partium) functiones vivi hominis (quatenus illæ functiones) sunt corporeæ) peraguntur. Utræque mutantur et renovantur assidue; verò solidæ lentius. Igitur incipiendum est (nobis) ab his; quippe quæ dent formam et firmitatem universo corpori.

76. Vocamus solidam materiam, ex quâ corpora animalium constant, animale solidum, (pro) causâ brevitatis. Autem hoc habet varias dotes, chemicas, mechanicas, (et) vitales; nulla

CHAP. II.—*On the solid substance of which animal bodies are formed, its various properties, both chemical and mechanical: on the conjectures respecting its ultimate and minute structure: on the cellular substance; and on the origin, nature, and use of the fat.*

75. The human body consists of solid and fluid parts, by the mutual action of which the functions of living man (as far as they are corporeal) are performed. They are both constantly changed and renewed; but the solid ones more slowly. Therefore we must begin with the latter; as being those which give form and strength to the whole body.

76. We call the solid material of which animal bodies consist, the animal solid, for the sake of brevity. But this has different properties, chemical,

quarum non meretur attentionem medici.

77. *Exquisita chemia hujus ævi detexit diversas substantias, sive principia ut dicuntur, in variis solidis partibus humani corporis; que docuit (nos) exhibere eas substantias separatim. Imprimis (chemia) ostendit (esse) in ossibus præcipuè plurimam terram, nimirum calcem, non quidè puram, sed conjunctam cum quibusdam acidis, præsertim (acido) phosphorico. Hic phosphas calcis, cum pauxillo carbonatis calcis, dat firmitatem ossibus: et cum cartilagine, et multâ gelatinâ, et oleo crasso fere efficit ossa tota. Quoque plurima gelatina, et parum terræ pro rata parte, inest telæ cellulossæ, et cuti, que aliis membranis quæ fiunt ex eâ telâ, et (inest) demum musculis. Verò alia animalis substantia reperitur in his; scilicet plurima fibrina. Albumen quoque planè neque parcè detectum est, in quibusdam solidis*

les; 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, 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 cellulossæ, 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 cor-*

mechanical, and vital; neither of which is undeserving the attention of the medical man.

77. The refined chemistry of the present age has discovered different substances, or principles, as they are called, in the various solid parts of the human body; and has taught us how to show these substances in a separate state. In the first place, (chemistry) has shown that there is much earthy matter, particularly in bones; namely, lime, not in a pure state, but combined with certain acids, especially the phosphoric. This phosphate of lime, with a little carbonate of lime, gives strength to the bones, and together with cartilage, and much gelatine, and thick oily matter, forms the bones nearly entirely. Much gelatine and little earthy matter, compared with the part mentioned, is present in the cellular substance, in the skin, and in the other membranes which are formed by that network; and, lastly, in muscles. But another animal substance is found in them; namely, fibrine, in considerable quantity. Albumen, likewise, has been discovered

poris humani plane neque parce detectum est; maxime in cartilaginibus, et tendinibus, et ligamentis. Præter hæc multum oleum crassum in omnibus fere solidis animalibus reperitur; 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 chemica exploratæ partes solidæ humani corporis, vel putredine, quam sponte subeunt modico calore, cum humore, et admisso aëre; vel magno calore, qualis priores elementorum compositiones destruat, novas ipsorum efficiat, facile in pauca elementa resolvuntur; duriores in calcem et phosphorum; molliores

partibus humani corporis, maximè et cartilaginibus, et tendinibus, et ligamentis. Præter hæc multum crassum oleum reperitur ferè in omnibus solidis partibus: et quidam sales tam acidi quam alcalini: et interdum ut videtur sed multo parcius, quædam aliæ substantiæ minoris momenti (reperiuntur). Sed nondum satis constitit de his; scilicet quæ* neque semper reperiuntur, nec unquam adsunt tantâ copiâ, ut explorentur facillè.*

73. Solidæ partes humani corporis exploratæ ulterius chemicâ arte facillè resolvuntur in pauca elementa, vel putredine, quam (illæ partes) subeunt sponte modico calore, cum humore, et aere admisso vel magno calore, qualis (calor) destruat priores compositiones elementorum, vel efficiat novas (compositiones) eorum: duriores (partes resolvuntur) in calcem et phosphorum;

evidently, and not sparingly, in some solid parts of the human body; particularly in the cartilages, tendons, and ligaments. Besides these, much thick oil is found in nearly all the solid parts, as well as certain acid and alkaline salts; and some other substances of less import, are sometimes (discovered), as it appears, though in much less quantity. But concerning the latter, it is not yet quite agreed upon: for they are not always found, and are never present in such quantity that they can easily be analyzed.

78. The solid parts of the human body, examined further by the aid of chemistry, are easily resolved into a few elements, either by the putrefaction which they undergo spontaneously, by means of moderate heat, moisture, and the access of air, or by (exposure to) an intense heat, such as destroys the primary composition of those elements, or gives rise to new ones: the

* *Constat itit*, &c. is here used impersonally, and means to be agreed upon; as *constat de hac re inter omnes*, all men agree upon this matter, or it is agreed upon by all men, concerning this matter.

verò molliores in carbonem, nitrogenium (vel azotium) hydrogenium, et oxygenium, quæ igitur creduntur esse simplicissima elementa solidi animalis; siquid dicatur rectè simplex in severiore chemiâ. Verò hæc elementa separata et conjuncta aliter atque aliter, vel igne vel putredine interim efficiunt novas substantias, quales sunt ammonia, acidum carbonicum, oleum empyreumaticum, et multi fœtidi vapores, quæ nequeunt detegi in recente et integro animali solido, autem facile et ferè semper observantur, dum hoc (solidum) resolvitur in sua elementa.

79. *Mechanicæ dotes, quibus animale solidum aptatur ad usus vitæ, sunt tres; scilicet adhæsiō satis magna, quædam flexilis mollities, et insignis vis resiliendi.—Pleraque munera vitæ consistunt in variis motibus: validissimi motus requiruntur ad multa eorum (munerum). Igitur opus est tantâ adhæsione partium, ut hi perficiantur sine peri-*

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 fœtidi, 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 usus aptatur, sunt tres; adhæsiō scilicet satis magna, mollities quædam flexilis, et insignis vis resiliendi.—Munera vitæ in variis motibus pleraque consistunt: ad multa eorum validissimi motus requiruntur. Tanta igitur adhæsione partium opus est, ut hi sine lacerationis

harder (parts) are resolved into lime and phosphorus, but the softer ones into carbon, nitrogen, (or azote) hydrogen, and oxygen, which are therefore considered to be the most simple elements of animal substance; if any thing in more strict chemistry may be properly called simple. These elements, separated and combined in various ways, either by the aid of heat or putrefaction, in the meantime form new substances; such as ammonia, carbonic acid, empyreumatic oil, and many fœtid vapors, which cannot be detected in the recent and sound animal solid, but are readily and nearly always observed, when this (substance) is resolved into its elements.

79. The mechanical properties, by which the animal solid is adapted to for the purposes of life, are three; namely, sufficient adhesion, some flexible softness, and considerable elasticity. Many vital functions consist in various motions; and the most powerful motions are necessary for many of them. Therefore, there is need of such a degree of cohesion of parts, that these

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, quam primum vis dimovens sublata fuerit.

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 satis insignes, valetudinem sæpe parum afficiunt. Nonnunquam vero, sanitatis limites transeuntes, manifestos et sane haud leves morbos faciunt.

81. Duplice modo variari aut vitiari potest, quod ad dotes mechanicas, omnis pars solida; scilicet, aut nimia aut nimis parva adhæsione, aut mollitie, aut vi resiliendi. Aucta adhæsione seu firmitate partis cujusvis solidæ, augetur plerumque ejus resiliendi vis;

culo lacerationis; quoque oportet (ut), ob eandem causam, solidæ partes, aliæ magis aliæ minus, sinant se flecti: denique necesse est, ut partes ita flexæ, vel dimotæ loco, recuperent suū sponte pristinum figuram et situm, quam primum dimovens vis sublata fuerit.

80. *Hæ dotes variant multum non modo in variis partibus, sed et in iisdem partibus in variis hominibus, et sæpe diversis temporibus in eodem homine. Varietates hujusmodi, quamvis satis insignes sæpe parum afficiunt valetudinem. Verò nonnunquam, transeuntes limites sanitatis, faciunt manifestos morbos, et sanè haud leves.*

81. *Omnis solida pars potest variari, aut vitiari duplice modo (in eo) quod (attinet) ad dotes mechanicas; scilicet aut nimiam aut nimis parvam adhæsione aut mollitie, aut vi resiliendi. Adhæsione seu firmitate cujusvis partis solidæ aucta, plerumque vis resiliendi ejus,*

motions) may be executed without danger of laceration; it is likewise necessary, for the same reason, that the solid parts, some more, some less, should allow of flexion; lastly, it is necessary, that the parts so bent, or removed from their situation, should recover spontaneously their primary shape and position, as soon as the displacing power has been taken away.

80. These properties vary considerably, not only in the different parts, but also in the same parts in different persons, and frequently at different times in the same individual. Varieties of this description, although very remarkable, frequently have little effect upon the health. Still, sometimes, overpassing the limits of health, they produce evident and not slight diseases.

81. Every solid part may vary, or be disordered in a twofold manner, in what relates to its mechanical properties; namely, either by excessive or too slight adhesion, softness, or elasticity. The adhesion or firmness of any part being increased, generally its elasticity is increased also; but the softness

augetur; autem mollities necessario minuitur. Verò adhæsione imminutâ, major mollities fit, et vicissim minor vis resiliendi (fit).

82. *Causæ horum effectuum sunt certè multiplices; tamen possunt reduci ad certa capita. Aut ipsa chemica compositio materiæ vitiatur, aut compositione omnino salvâ, particulæ ita disponuntur, ut attrahant semet invicem plus minusve fortiter. Quod attinet ad chemicam compositionem ejus, fortasse omnia elementa (77, 78) possunt inesse animali solido, variâ quantitate (et) efficere quodque suum peculiare vitium. Sed novimus nihil certi de multis horum; vero satis constat, humidam materiam, quæ est ferè aqua, et siccam (materiam), quæ constat ex diversis elementis, variare multum; quo plus sit humidæ (materiæ), eò minus (erit) adhæsionis aut vis resiliendi, vero erit plus mollitiei; et contra omnino, si fuerit nimium siccæ materiæ in compositione.*

mollities autem necessario minuitur. Imminuta vero adhæsione, 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 vitiatur, aut, salva omnino compositione, particulæ 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 efficere. Sed de multis horum nihil certi novimus: satis vero constat, materiam humidam, quæ fere aqua est, et siccam, quæ ex diversis elementis constat, multum variare: quo plus humidæ, eo minus adhæsionis aut vis resiliendi, plus vero mollitiei; et contra omnino, si nimium siccæ materiæ in compositione fuerit.

is necessarily diminished. But the cohesion being diminished, there is more softness, and in exchange less elasticity.

82. The causes of these effects are indeed manifold, but admit of being reduced to certain heads. Either the chemical composition of the substance is disordered, or with this composition entirely in a sound state, the particles are so arranged, that they mutually attract each other more or less forcibly. As to its chemical composition, perhaps, all the elements may be present in the animal solid, in different quantities, and produce each of them its peculiar disorder. Of many of these things we have known nothing certain; but there is ample evidence, that the moist substance which is almost water, and that the dry substance which consists of the different elements, vary amazingly; the more moisture there is, the less cohesion or elasticity there will be, but more softness; and altogether the reverse, if there be too much dry matter in the composition.

83. Variæ sunt causæ remotæ (37 et seq.) alterutrius materiæ vel abundantis vel deficientis. Ipsa imprimis constitutio corporis congenita multum huc confert. Quidam, præ cæteris, homines et viri præ fœminis in universum, duriorum et sicciorum corporis compaginem habent, vix, ac ne vix quidem, ullo vitæ genere penitus mutantam.

84. Ætas vero majus adhuc discrimen facit; a prima enim ad ultimam usque siccior et durior 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 aquosus fuerit, similem solidarum partium conditionem efficit. Hoc, in aliis animalibus dudum observatum, in homine quoque, aliquatenus saltem accidere videtur. Neque ratio gravissima deest cur cre-

83. *Variæ causæ remotæ sunt (37 et seq.) vel alterutrius materiæ abundantis vel deficientis. Imprimis ipsa congenita constitutio corporis multum huc confert. Quidam homines præ cæteris, et viri præ fœminis in universum habent duriorum et sicciorum compaginem corporis, vix, ac ne quidem vix, penitus mutantam ullo genere vitæ.*

84. *Verò ætas facit adhuc majus discrimen: enim corpus evadit quotidie siccior et durior a primâ usque ad ultimam (ætatem); nempe a fluido et crudo fœtû, ad rigidum et exsuccum senem; cui vita ferè deficit, propter hanc causam ipsam.*

85. *Porro victus, quo homines utuntur, efficit similem conditionem solidarum partium, prout (victus) fuerit plus minusve aquosus. Hoc dudum observatum in aliis animalibus, videtur accidere, quoque in homine saltem aliquatenus. Neque ratio gravissima deest cur*

83. There are various remote causes of either substance being excessive or deficient. The congenital constitution of the body especially contributes much to this. Some men, compared with others, and males compared with females in general, possess a harder and drier frame of body, scarcely, and not indeed scarcely to be entirely altered by any mode of life.

84. Age makes a still greater difference, for the body becomes daily dryer and harder, from first to last; namely, from the fluid and ill-formed fœtus, to the rigid and sapless old man, to whom life commonly fails on account of this very cause.

85. Moreover, the food which men use, produces a similar condition of the solid parts, according as it has been more or less watery. This (circumstance), already observed in other animals, likewise appears to occur in man, at least to a certain extent. Nor is there wanting a very cogent reason why we

credamus, non modo conditionem et vires corporis, sed et indolem animi pendere quodammodo a genere victus.

86. *Quoque multum pendet a bonâ vel pravâ concoctione cibi, et ab appositione nutrimenti parati ex eo.*

87. *Denique status aeris scilicet (in eo) quod (attinet) ad humorem vel siccitatem, afficit corpus haud parum. Hinc monticolæ vel (illi) qui habitant siccas regiones (sunt) multum diversi ab incolis humidarum et paludosarum (regionum).*

88. *Postremò genus vitæ nonnihil confert, ad eundem effectum. Exercitatio corporis, exprimit et exhalat, quod humoris fuisset nimium. Ignavia habet prorsus contrarium effectum, que facit partes humidiores abundare.*

89. *Verum, compositione chemicâ harum partium omnino salvâ, conditio harum potest affici multum ab aliis causis. Nimirum densatio*

damus, non corporis modo conditionem et vires, sed et animi indolem, a victus genere quodammodo pendere.

86. Multum quoque pendet a a bona vel prava ejusdem cibi concoctione, et ab appositione nutrimenti ex eo parati.

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

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

89. Verum, salva omnino compositione chemica solidarum partium, harum conditio ab aliis causis multum affici potest. Densatio

should consider, that not only the condition and strength of the body, but also the disposition of the mind, depend in some degree on the kind of food.

86. Much also depends upon the good or bad digestion of the food, and upon the disposal of the nutriment obtained from it.

87. Lastly, the state of the air, in reference to moisture, or dryness, affects the body considerably. Hence mountaineers, or those who inhabit dry districts, are very different from the inhabitants of damp and marshy (countries).

88. Lastly, mode of life contributes somewhat to the same effect. Exercise of the body presses out and exhales what fluid is in excess; indolence has a contrary influence, and causes the more moist parts to be abundant.

89. But, the chemical composition of the solid parts being quite entire, the condition of them may be much affected by other causes; for instance,

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 experimenta luculenter docent. Distentio quoque solidi animalis dotes ejus jam memoratas haud parum afficit. Quo plus tenditur, eo durius, et firmitus, et magis resiliens evadit, eoque difficilior ulteriolem patitur distentionem, donec tandem, amplius distendi impatiens, nova admota vi, distrahitur et dirumpitur, superata nimirum particularum adhæsione, qua hæc debilior fuerit. Hinc ratio, non plene quidem (nam multum pendet a principio vitali, primaque corporis fabrica) sed aliquatenus saltem, deducenda est multarum rerum quæ summi momenti sunt; corporis incrementi, status, imminutionis firmitatis indies crescentis, et mortis senilis inevitabilis.

particularum, sive a causis mechanicis, sive a calore et frigore, efficit variam firmitatem et vim resiliendi cujuslibet partis.

90. Quantum, compressio mechanica hic valeat, experimenta clarissimi Clifton Wintringham luculenter docent. Quoque distentio animalis solidi afficit haud parum dotes ejus jam memoratas. Quod plus (animale solidum) tenditur, eo evadit durius, et firmitus, et magis resiliens, que eo difficilior patitur ulteriolem distentionem donec tandem, impatiens distendi amplius, novâ vi admotâ, distrahitur et dirumpitur, nimirum adhæsione particularium superatâ, quâ hæc fuerit debilior. Hinc ratio non plene quidem (nam multum pendet a vitali principio, que fabricâ primâ corporis) sed aliquatenus saltem est deducenda multarum rerum quæ sunt summi momenti; (scilicet ratio) incrementi corporis, status, imminutionis, firmitatis crescentis indies, et inevitabilis mortis senilis.

thickening of the particles, either from mechanical causes, or from heat and cold, will produce a different degree of firmness and elasticity of any part.

90. How far mechanical pressure avails here, the experiments of the illustrious Clifton Wintringham lucidly demonstrate: distention, likewise, of the animal solid, affects in no slight degree its properties already mentioned. The more (the animal solid) is stretched, the harder and firmer, and more elastic it becomes; and with so much more difficulty does it admit of further distention, until at length, not bearing increased distention, a fresh force being applied, it is torn and ruptured; that is to say, the cohesion of the particles is overcome in the part in which it was weaker. Hence a reason, not evident, indeed, (for much depends upon the vital principle, and the primary fabric of the body,) but to some extent at least is to be deduced, of many things which are of the greatest importance; (namely, the reason) of the increase of the body, of the stature, and decay, of the daily increasing strength, and of the inevitable death of old age.

91. *Fortasse varia densitas solidarum partium derivatur ab naturâ ipsâ. Sed magis constat de viribus exercitationis, aut ignaviæ, in mutando statu earundem; effectus generales quarum (virium) tam boni quam mali, in solidis partibus, igitur faciliè intelligentur.*

92. *Porro, quælibet pars mobilis naturâ (suâ), veluti junctura artûs, paulatim rigescit, diuturnâ quiete, recuperatura tardè pristinam mobilitatem fortasse nunquam penitus: et contra, fere omnes partes corporis sæpe adipiscuntur miram mobilitatem valido et crebro usu, modo hic (usus) non fuerit nimius. Neque profectò melius aut certius remedium datur, ad superandam illam rigiditatem artuum, quæ solet induci longâ quiete, quam frequens exercitatio, quæ primò difficillima, et diù exigua, fere evadit indies facilior, liberior et perfectior.*

91. *Varia fortasse solidarum partium densitas ab ipso natura derivatur. Sed magis constat de viribus exercitationis, aut ignaviæ, in statu earundem mutando. Quarum igitur effectus generales, tam boni quam mali, in partibus solidis, facile intelligentur.*

92. *Porro, diuturna quiete, pars quælibet natura mobilis, veluti junctura artus, paulatim rigescit, pristinam mobilitatem tarde, fortasse nunquam penitus, recuperatura: et contra, valido et crebro usu, modo hic non nimius fuerit, omnes fere corporis partes miram sæpe adipiscuntur mobilitatem. Neque profecto melius datur aut certius remedium ad superandam illam rigiditatem artuum quæ longa quiete induci solet, quam frequens exercitatio, quæ primo difficillima, et diu exigua, fere indies facilior, liberior, et perfectior evadit.*

91. The varied density of the solid parts is possibly derived from nature itself. But there is greater evidence of the influence of exercise, or indolence in changing their condition; the general effects of which, both good as well as bad, upon the solid parts, will be therefore easily understood.

92. Moreover, any part naturally enjoying motion, as the joint of a limb, gradually becomes rigid by long continued rest, about to recover its former mobility slowly, and perhaps never completely: on the other hand, nearly all parts of the body often acquire a surprising mobility, by active and frequent use, provided it be not in excess. Nor, indeed, is there a better or more sure remedy given to overcome the rigidity of the joints which is apt to be brought on by long rest, than frequent exercise; which (is) at first very difficult, and for some time limited (but) commonly becomes daily more practicable, more free, and more perfect.

93. Calor corpora omnia laxat atque expandit: frigus vero densat et durat. Utrumque effectum homines probè experiri solent. Quamvis corpus suum ferè semper calorem conservet, fieri nequit quin ejus superficies saltem ab aère ambiente externo afficiatur. Neque exigua vis est, quâ calor hoc modo in universo corpore polleat. Quam longè aliter se habet, qui, fervido Austro spirante, hebes et languidus factus, membra sua ægrè 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 a Bryan Robinson instituta; docent effectus balnei calidi; docet quotidiana experientia.

93. *Calor laxat, atque expandit omnia corpora: vero frigus densat, et durat (omnia corpora). Homines probè solent experiri utrumque effectum. Quamvis corpus conservet ferè semper suum calorem, nequit fieri quin superficies ejus saltem afficiatur ab aère externo ambiente. Neque est vis exigua, quâ calor polleat hoc modo, in universo corpore. Quam longè aliter (ille) habet se, qui factus hebes et languidus (sub) fervido Austro spirante trahit sua membra ægrè, ac ille, qui, sub frigido Aquilone, exercet se cursu glaciali, firmus (secundum) totum corpus, mobilis, (et) expeditus.*

94. *Variæ causæ, quæ (quum) singulæ solent afficere dotes animalis solidi tot modis; (cum) conjunctæ præstant effectus adhuc majores: experimenta instituta à Bryan Robinson docent (id); effectus balnei calidi docent; quotidiana experientia docet.*

93. Heat relaxes and expands all bodies; but cold thickens and hardens them. Men, indeed, are accustomed to experience both effects. Although the body may nearly always preserve its temperature, it cannot be but that its surface at least should be affected by the external ambient air. Nor is that influence slight by which heat prevails in this way in the whole system. How far differently he feels, who, under the hot southern wind blowing, rendered dull and languid, scarcely drags his limbs along, and he who, under the cold northern winds, exercises himself on the icy tracks, strong, active, and nimble in his entire frame.

94. Various causes which, when separate, affect the properties of the animal substance in so many ways, when combined, produce still greater effects. The experiments made by Bryan Robinson show it: the effects of the warm bath prove it,—daily experience teaches it.

95. *Variæ partes corporis, aptæ variis muneribus, fiunt ex hâc materiâ. Nondum constat certâ fide, quænam sit ultima et minutissima fabrica animalis solidi: Sive (illud) constet ex fibris, scilicet longis filis, parum latis, textis variè inter se, ut Boerhaavius docet; sive (constet) ex serpentinis fibris, convolutis in mirum modum, ut quædam observationes nuper factæ suadent; sive tela cellulosa fiat ex fibris que laminis, et maxima pars omnium partium corporis fiat ex hâc, ut celeberrimus Hallerus conatus est ostendere.*

96. *Erit alibi locus dicendi de fibris que dotibus earum (109 et seq.) Tela cellulosa observatur ubique in corpore; circundat et nectit fibras ipsas, quæ apparent satis manifestè in multis partibus, et leviter conjungit varias partes quæ debent habere aliquem motum in vicinas (partes). Eadem probè densata facit membranas firmissimas, et quæ videntur (esse) tenuissimæ; quarum (illæ) quæ*

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, constet, ut docet Boerhaavius; sive ex fibris serpentinis, mirum in modum convolutis, ut quædam observationes 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 (109 et seq.) Tela cellulosa ubique in corpore observatur; fibras ipsas, quæ in multis partibus satis manifeste apparent, circundat et nectit, et varias partes, quæ motum aliquem in vicinas habere debent, leviter conjungit. Eadem probè densata, firmissimas, et quæ videntur tenuissimæ, membranas

95. Various parts of the body, adapted to the different functions, are formed by this substance. There is nothing known for certain, what is the ultimate and most minute structure of the animal solid; whether it consists of fibres, that is, long threads of little breadth, variously interwoven together, as Boerhaave teaches; or of serpentine fibres admirably convoluted, as observations lately made seem to inculcate; or whether the cellular substance is composed of fibres and laminæ (or plates), and the chief portion of all the parts of the body is formed by it; as the very celebrated Haller endeavoured to demonstrate.

96. There will be elsewhere a place for treating of fibres and their properties. Cellular tissue is observed in all parts of the body; it surrounds and connects the fibres themselves, which appear very evident in different parts, and loosely unites various parts, which ought to exert some motion on those adjacent. The same substance being condensed forms the firmest mem-

facit: Quarum quæ simplicissimæ apparent, accuratiùs exploratæ, hanc structuram ostendunt.

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

98. Concrescit etiam sua sponte, si secta vel alio modo separata fuerit. Quod si ingente inflammatione, et suppuratione facta, magna pars telæ cellulosæ destructa fuerit, tunc non renovatur, et fœda cicatrix relinquitur.

99. Quin et pars, ut fertur, vel ejusdem, vel alieni corporis, alii

apparent simplicissimæ, exploratæ accuratiùs ostendunt hanc structuram.

97. *Tela cellulosa sæpè crescit in mirum modum, que partes factæ ex eâ (scilicet) membranæ, vasa, &c. imprimis lentâ distensione; autem subita distentio vel rumpit eam, vel facit (eam) tenuiorem. Quoque nonnunquam crescit inter partes vicinas, que jungit eas quas Natura fecerat liberas. Concretiones hujusmodi præter naturam sæpe observantur, post inflammationem pulmonis vel viscerum abdominis: Et istæ novæ membranæ sunt verè cellulosæ.*

98. *Etiam (tela cellulosa) concrescit suâ sponte, si fuerit secta vel separata alio modo. Quod si magna pars cellulosæ telæ fuerit destructa ingente inflammatione, et suppuratione factâ, tunc non renovatur, et fœda cicatrix relinquitur.*

99. *Quin et pars vel ejusdem vel alieni corporis*

branes, and those which appear (to be) the thinnest; of which those that appear most simple, when examined more accurately, show this structure.

97. The cellular tissue and parts composed of it, such (as) membranes, vessels, &c. frequently increases to a wonderful extent, principally by slow distention; but sudden distention ruptures it, or renders it thinner. Also it increases sometimes between neighbouring parts, and unites those which nature had made free. Unnatural concretions of this description are often observed, after the inflammation of the lungs or abdominal viscera. And these new membranes are truly cellular.

98. It likewise grows together spontaneously, if it is cut or separated in any other manner; but if a considerable portion of the cellular tissue has been destroyed by high inflammation and by suppuration being produced, then it is not renewed, but an ugly cicatrix is left.

99. Moreover, even a part of the same, or another body, as it is related,

(ut fertur), interdum potest jungi alii concretione hujusmodi. Ars Taliacotii nitebatur hoc, si ullo fundamento: et alia nupera multum jactata (scilicet ars) transponendi dentes.

100. Aliis partibus tela cellulosa est reticulata, aliis (est) referta adipe. Scilicet, ubicunque magna moles aut compressio, fuissent periculo aut incommodo, veluti in capite, pulmone, oculis, palpebris, pene, scroto, ibi colligit nullum adipem, sed est laxa et purè reticulata. At plurimus adeps, secernitur et colligitur inter musculos corporis et artuum, [sub cute et in abdomine, imprimis in omento et circa renes.

101. Adeps est purum animale oleum parum diversus* ab crassis et mitibus oleis herbarum; (est) fluidus in vitâ; sed crassior aut tenuior variis partibus. (Adeps) secernitur a sanguine, resorbetur, fa-

interdum jungi potest hujusmodi concretione. 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 fuissent, veluti in capite, pulmone, oculis, palpebris, pene, scroto, ibi nullum adipem colligit, sed laxa et pure reticulata est. At, inter musculos corporis et artuum, sub cute et in abdomine, imprimis in omento et circa renes, plurimus adeps secernitur et colligitur.

101. Adeps purum oleum 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

may sometimes be united to another, by a growing together of this description. The Taliacotian art rested on this, if on any foundation; likewise the lately much boasted (art) of transplanting teeth.

100. In some parts the cellular tissue is reticulated, in others filled with fat: that is to say, wherever a great mass or compression would have been a danger or inconvenience, as in the head, lungs, eyes, and eyelids, penis, and scrotum, there it collects no fat, but is loose and purely reticulated. But much fat is secreted and collected between the muscles of the body and limbs, under the skin, and in the abdomen, especially in the omentum and about the kidneys.

101. Fat is a pure animal oil, slightly differing from the thick and bland oils of plants: it is fluid during life; but is thicker or thinner in the different parts. It is secreted from the blood, (and) is easily and often suddenly

* *Diversus*, agreeing with *adeps*.

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 converti; 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 sinant. Nam in partes pure 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 solent pinguescere, donec

cilè, et sæpe subitò in ipsum, quamvis rarissimè oleum sincerum vel adeps conspiciatur in sanguine.

102. Verisimile est oleum converti per digestionem in fibrinam, gelatinam, et albumen, partim in ventriculo et intestinis, partim in pulmone; et (verisimile est) hæc iterum revertere per secretionem in oleum. Profectò nulla organa secernentia adipis ostenduntur. Oportet tamen (ut) sint (organæ) istiusmodi, et (ut sit) quoque fabrica specialis cellulosæ telæ earum partium, quæ debent habere adipem, ut contineant oleum jam secretum, neque sinant (illud) transire ad alias (partes). Nam nunquam aperit sibi viam in partes purè reticulatas, quamvis sit facilis via per telam cellulosam aëri aut aquæ per totum corpus a capite ad calcem.

103. Nihil adipis reperitur in tenero fœtu parum (adipis reperitur) in maturo fœtu. Verò infantes modò sint bene aliti, ferè solent pinguescere, donec

reabsorbed into it; although pure oil or fat can be very rarely seen in the blood.

102. It is probable that oil is converted by means of digestion into fibrine, gelatine, and albumen, partly in the stomach and intestines, partly in the lungs, and that these again revert by secretion into oil. In truth, no secerning organs of fat are shown, still there must be such, as well as a particular structure of the cellular tissue of those parts, which ought to contain fat, that they may retain the oil when secreted, nor allow it to pass to other parts; for it never opens a passage for itself into parts purely reticulated, although there is a free channel through the cellular tissue for air or water over the whole body, from the head to the heel.

103. No fat is found in the young fœtus, and little (when it is) mature.

incipiant ambulare et exercere semet propriis viribus, tum fiunt graciles, et manent sic usque ad virilem ætatem, quâ (ætate) solent uti minus crebrâ et validâ exercitatione. Tum fiunt quadrati et sæpè obesissimi: denuò paulatim marcescunt matura senectute. Verò Puellæ pinguescunt quodammodo circa ætatem puberem; unde (est) forma nitida, teres, adeo amabilis, et apta premi; et ferè omni ætate, fœminæ pinguescunt plus quam viri. Quoque viri laxi et flaccidi (secundum) habitum corporis, fiunt obesiores firmioribus.

104. *Adeps colligitur usû multioleosi, nutrientis, cibi, præsertim (cibi confecti) ex carnibus (modo sit bona concoctio) et validi potûs, imprimis cerevisiæ, et quiete et tranquillitate animi et corporis, multo somno et torpore, castratione, frigore, repetitâ detractio sanguinis, que multis aliis exinanitionibus; scilicet salva sanitate, quicquid minuit*

ambulare et propriis viribus semet exercere incipiant; tum graciles fiunt, et sic manent ad virilem usque ætatem, qua minus crebra et valida uti solent 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, fœminæ plus quam viri pinguescunt. Viri quoque habitum corporis laxi et flaccidi firmioribus obesiores fiunt.

104. Colligitur adeps usu multi cibi, oleosi, nutrientis, ex carnibus præsertim (modo concoctio bona sit) et potus validi, cerevisiæ imprimis, et animi et corporis quiete et tranquillitate, multo somno et torpore, castratione, frigore, sanguinis detractioe repetita, multisque aliis exinanitionibus; quicquid scilicet, salva sanitate, vires

But infants, provided that they are well nourished, usually become fat, until they begin to walk and exercise themselves by their own powers; they then become thin, and remain so till manhood, when they are accustomed to take less frequent and active exercise: at that period they become square and often very corpulent; they gradually become again emaciated in mature old age. Girls in some degree become fat about puberty, whence their smooth, rounded, lovely form, and suited for embraces; and almost at every age, females become more corpulent than men. Men also lax and flaccid as to their habit of body become more corpulent than those of firmer fibre.

104. Fat is accumulated by the use of much oily, nutritious food, particularly animal food (provided the digestion be good), also strong drink, especially beer, by rest and tranquillity of the mind and body, by much sleep and torpor, castration, cold, repeated bloodletting, and most other evacu-

vitales et animales, et imprimis solitas excretiones, eminuit, 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 certissime debellanda, si modo fuerint bona voluntas et vis animi, valida corporis exercitatione, brevi somno, parca et sicca diæta. 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

vires vitales et animales, et imprimis solitas excretiones, favet huic. Verò multum pendet ab habitû ipsius corporis, neque homo, ut bos, potest saginari ad libitum.

105. *Certa obesitas secundum ætatem hominis est signum et effectus prosperæ valetudinis vero nimia (obesitas) est ipsa morbus, et causa aliorum morborum. Verò (obesitas) semper et certissimè debellanda est, (modo si fuerit bona voluntas et vis animi), validâ exercitatione corporis, brevi somno, parca et siccâ diætâ. Nec facile miles gregarius repertus fuerit, qui conqueratur de tali morbo.*

106. *Adeps semper facit haud exiguam partem, aliquando (facit) maximam (partem) corporis. Igitur non dubitandum est, quin habeat suos usus. (Adeps) reddit motum faciliorem et liberiolem, oblinendo partes movendas, et sic minuendo frictionem. Hoc modo, im-*

ations; for, in a sound state of health, whatever diminishes the vital and animal powers, and especially the usual excretions, is favourable to this. A great deal however depends upon the habit of body, nor can man, like an ox, be fattened at pleasure.

105. A certain degree of corpulency, in proportion to the age of man, is an indication and effect of good health. But too great a share of it is a disease in itself, and a cause of other diseases. It is always and very certainly to be overcome, (provided there be earnest intention and resolution,) by powerful exercise of the body, by little sleep, by sparing and dry diet. Nor could a common soldier easily be found who complains of such a disease.

106. Fat always forms no little part, sometimes the greatest part, of the body. Therefore it is not to be doubted that it has its uses. It renders motion more easy and free, by oiling the parts which are to be moved, and in this way diminishing friction. It thus prevents the abrasion of the solid

*pedit, ne solidæ partes abradantur, quod aliter fieret; nec sinit vicinas partes con-
crescere, quod fit aliquando, si aliqua pars telæ, quæ
continebat adipem, destructa fuerit ulcere vel alio casu.*

107. *Quin confert haud parum ad formam et pulchritudinem corporis, implendo magna interstitia inter musculos, quæ (interstitia) redderent corpus deforme et horrendum. Autem hoc, (i. e. corpus) fit nitidum, teres atque rotundum justâ pinguedine. Porro, adeps dat candidum, cereum, colorem, qui mixtus roseo, efficit venustissimum colorem oris. Hinc fit, ut puellæ male metuentes, ne nimis pinguescant, et conantes marcescere (se) medicamentis, diætâ, et genere vitæ, soleant perdere cum nitido habitû corporis, quoque venustatem oris.*

108. *Adeps resumptus ex suis cellulis in sanguinem*

modo, ne abradantur solidæ partes, quod aliter fieret, impedit; nec sinit partes vicinas concrescere, quod aliquando fit, si ulcere 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 resump-

parts, which would otherwise take place, and does not allow the neighbouring parts to grow together, which sometimes occurs, if some part of the membrane which contained the fat has been destroyed by ulceration or any other accident.

107. Moreover it contributes not a little to the form and beauty of the body, by filling up the great interstices between the muscles, which would render the body deformed and unsightly. By means of a due degree of corpulency, this becomes smooth, sleek, and rounded. Moreover fat gives that fair, waxy colour, which when mixed with the rosy tint, forms the very beautiful colour of the countenance. Hence it is, that girls, foolishly fearing lest they become too corpulent, and endeavouring to reduce themselves by medicines, diet, and mode of life, are accustomed to lose, together with their comely habit of body, also the beauty of the countenance.

108. Fat, (when) reabsorbed from its cells into the blood, is thought to

tus. Sed hoc minus certum est. A frigore quodammodo defendit; animalibus regionum frigidarum magna copia datus.

creditur nutrire. Sed hoc est minus certum. Quodammodo defendit a frigore: (adeps) datus (est) magnâ copiâ animalibus regionum frigidarum.

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.*

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

109. SOLIDA viva, vel vitalia, dicuntur 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.

109. *Solidæ partes, quæ habent sensum et mobilitatem, dicuntur viva, vel vitalia solida. Hæ dotes, pendentes a vitâ, incipiunt et desinunt cum eâ. Verò dotes solidarum partium, de quibus dictum fuit (75, et sequentibus) supersunt etiam post mortem.*

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

110. *Autem partes, quæ habent vel sensum vel mobilitatem vel utrumque, sunt*

nourish. But this is by no means certain. In some manner it protects from cold, (it is) supplied in great abundance to the animals of the cold regions.

CHAP. III.—*On the living, solid, or nervous system, on the properties, structure, and uses of it; also on the conjectures which have been promulgated concerning the nature and functions of it.*

109. The solid parts which enjoy sensation and motion are called living or vital solids. These properties, depending upon life, begin and terminate with it. But the properties of the solid parts, concerning which we have spoken, remain even after death.

110. But the parts which enjoy sensation or motion, or both, are the ce-

cerebrum, cerebellum, medulla oblongata, medulla spinalis, et nervi oriundi ex his, diffusi ferè per totum corpus, impensi in varia organa singulorum sensuum et (in) musculos, et demum musculi ipsi.

111. Sensus est multò magis generalis quam mobilitas, quippe qui sit communis omnibus partibus jam recensitis, quamvis fiat planè per nervos solos. Verò mobilitas est propria fibris musculosis solis. Igitur ubicunque est sensus, ibi nervi sunt; verò ubicunque mobilitas observatur, ibi fibræ musculosæ videntur esse.

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

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

rebrum, cerebellum, medulla oblongata, medulla spinalis, and nerves arising from them, spread generally through the whole body, expended upon the various organs of the separate senses and muscles, and lastly the muscles themselves.

111. Sensation is much more general than motion, for it is common to all the parts above mentioned, although it takes place evidently by means of the nerves alone. Mobility is proper to the muscular fibres alone. Therefore, wherever there is sensation, there are nerves; and wherever motion is observed, there muscular fibres are seen to exist.

112. Moreover mobility itself seems to depend upon the connexion which the muscles have with the nerves, for a nerve being cut, compressed, or tied, the muscles on which it was distributed, in a short time lose their mobility or peculiar contractile power. Nor is the case different if the brain itself, or commencement of the nerves, have been disordered.

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 constent; utrique albi sunt, dummodo muscoli 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 musculosis. 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,

113. *Sunt (homines), qui credunt musculos oriri et formari nervis, et constare ex eadem materiâ. Sanè utrique habent similem structuram, quatenus constent ex fibris valdè minutis, utrique sunt albi, dummodo muscoli fuerint bene eloti, et purgati, a sanguine quem multum continent: Neque nervosæ fibræ quæ benè multæ subeunt musculos possunt ullo modo distingui ab musculosis fibris ipsis, ope microscopii. Porro est idem sensus utrisque; et stimulantia et sedantia medicamenta edunt planè eosdem effectus in musculis, sive admota fuerint musculo ipsi, sive nervo, qui adeat eum.*

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

113. There are (men) who consider that the muscles arise and are formed from the nerves, and consist of the same substance. They both certainly have a similar structure, inasmuch as they consist of very minute fibres; both are white, provided the muscles be well washed and cleansed from the blood, which they contain in considerable quantity; nor can the very numerous nervous fibres which in great number enter the muscles be in any degree distinguished from the muscular fibres themselves, by the assistance of a microscope. Moreover there is the same sensation in both, for stimulants and sedatives evidently produce the same effects in the muscles, whether they have been applied to the muscle itself, or to the nerve which enters it.

114. There will be elsewhere an opportunity of mentioning by how great difficulties the knowledge of the origin of many parts of the body is obstructed, whether we should consider them all as produced at the same time, or some after others, in certain succession. In the mean while, how-

quasdam musculosas conspici perquam maturè in fœtû, et jam adeptas esse insignem vim et robur, quum cerebrum ipsum reperitur adhuc molle et fere fluidum; que actionem earum (partium musculosarum) requiri ad functionem et augmen ejus; et musculos semper esse multo firmiores partibus vere nervosis, et habere vim propriam, nimirum irritabilem, quam (vim) nervi nunquam participant.

115. Igitur oportet, (ut) vel musculi constituti fuerint ex diversa materiâ, ab eâ, ex quâ (materiâ) nervi fiunt, vel, si utrique constant ex eâdem (materiâ), hæc (materia) sit prorsus diversæ fabricæ in his ac in illis, ut habeat vires adeo dissimiles. Quod si, igitur, substantia musculorum ac nervorum sit diversa, tum facillè patebit multam substantiam nervosam misceri semper cum musculosâ. Nam tenuissima acicula non potest adigi in musculum,

partes quasdam musculosas perquam mature in fœtu conspicui, 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 muscosa semper misceri. Nam acicula tenuissima non potest in musculum adigi, quin inde si-

ever, it cannot be dissembled that certain muscular parts are observed very early in the fœtus, and have already acquired considerable power and strength, whilst the brain itself is found still soft and nearly fluid, and that the action of these (parts) is required for the functions and increase of it; and (likewise) that muscles are always much firmer than parts merely nervous, and have a peculiar property, namely, irritability, of which the nerves never partake.

115. Therefore it is necessary, that the muscles are constituted of matter different from that from which the nerves are formed, or if both consist of the same, it is of a different fabrick in the latter to what it is in the former, that it may have properties so dissimilar. But if, therefore, the substance of the muscles and nerves be different, then it will be very clear that much nervous substance is mixed up with the muscular; for the finest needle cannot

mul multi ramuli nervosi pungantur vel lacerentur; ut dolor clare testatur (111)

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 partibus ejusdem generis habeantur, cui nomen genus nervosum a medicis imponi solet.

117. Miræ quas hæ partes possident dotes medicorum et philosophorum attentionem optimo jure sibi vindicarunt: plurimique et ingeniosissimi viri (inter quos summum Neutonum numerare oportet) operam haud exiguam collocarunt in causis earundem investigandis, modoque perscrutando quo variæ ipsarum functiones fierent; variasque quæ singulis placebant de his rebus conjecturas in medium protulerunt. Nondum vero ratio ulla proposita est rem per experi-

quin inde multi ramuli nervosi simul pungantur vel lacerentur: ut dolor clare testatur (111).

116. Igitur tam arctus nexus intercedit inter musculos que nervos, tum (in eo) quod attinet ad officium quo funguntur, tum quod ad fabricam, quam habent, ut meritò omnia viva solida habeantur pro partibus ejusdem generis, cui nomen nervosum genus solet imponi a medicis.

117. Miræ dotes, quas hæ partes possident, vindicarunt sibi optimo jure attentionem medicorum et philosophorum: que plurimi et ingeniosissimi viri (inter quos oportet numerare summum Neutonum) collocarunt haud exiguam operam in investigandis causis earundem, que perscrutando (de) modo, quo variæ functiones ipsarum fierent; que protulerunt in medium varias conjecturas de his rebus quæ (conjecturæ) placebant singulis. Vero nondum ulla ratio explorandi rem per experimenta proposita

be inserted into a muscle, but that many nervous ramifications are at the same time pricked or lacerated; as pain evidently testifies (111.)

116. Therefore, so close a connexion exists between the muscles and nerves, both as to the functions they perform, as well as their structure, that properly all the living solids may be considered as parts of the same kind, to which the name nervous system is accustomed to be affixed by medical men.

117. The wonderful properties which these parts possess, claimed to themselves the attention of medical men and philosophers; and many very ingenious men (amongst whom must be enumerated the great Newton) bestowed no little pains in investigating the causes of them, and inquiring into the manner in which their different functions were performed; and brought before the public the various conjectures upon these matters which pleased them individually. But not yet any rational mode of investigating the subject by experiment has been proposed:

est; et experientia bis mille annorum demonstravit satis superque, etiam sapientissimos homines rarissime detegere arcana naturæ conjectando. Nonnulli scriptores omnino male abusi sunt nomine Neutoni, nunquam non venerando, qui rejecerunt totam opinionem quam cuperent tueri in auctoritatem ejus; quamvis ille, solitâ modestiâ et prudentiâ (quas plerique auctores maluere laudare quam imitari) proposuerit suam sententiam de hâc re, pro conjecturâ tantum seu quæstione, aut refellendâ aut confirmandâ idoneis experimentis et argumentis. Sed ne licet sumere conjecturas quidem Neutoni pro veris; ille non sic (est) imitandus; sic scientia non promovenda (est).

118. *Profecto variæ sententiæ prolatae sunt de modo, quo sensus que voluntarius motus fiunt in animali corpore; verò hoc est commune fundamentum, for-*

menta explorandi; et experientia bis mille annorum satis superque demonstravit sapientissimos etiam hominum naturæ arcana conjectando rarissime detegere. Male omnino Neutoni nomine, nunquam non venerando, abusi sunt scriptores nonnulli, qui opinionem quam tueri cuperent in ejus auctoritatem rejecerunt totam: quamvis ille, solita modestia et prudentia (quas laudare quam imitari 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 Neutoni conjecturas pro veris 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 viti-

and the experience of two thousand years has amply and more than adequately shown, that the most learned very rarely discover the arcana of nature by conjecturing. Some writers have very basely abused the name of Newton, ever to be venerated, who referred to his authority the entire opinion which they were anxious to defend; although he, with his usual modesty and caution, (which many authors would rather commend than imitate,) gave his opinion on this subject, as conjecture or a query only, to be refuted or established by proper experiments and arguments. But we must not receive the conjectures even of a Newton as truths: he is not in this way to be imitated; in this way science is not to be advanced.

118. Various opinions, indeed, have been advanced, concerning the manner in which sensation and (voluntary) motion take place in the animal body; but this is the common foundation, and, perhaps, error of all, that they seek

um 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 alli-

tasse et vitium quoque omnibus, nempe quod petant rationem utriusque a quibusdam motibus propriis et peculiaribus nervoso generi, incipientibus ab organo sensus, et propagatis per nervos ad cerebrum, dum sentimus; et incipientibus a cerebro, que delatis ad musculos per nervos (sive eosdem qui inserviunt sensui, sive alios omnino diversos et distinctos, quamvis colligatos in eundem fasciculum cum illis) dum movemus nostros musculos ad arbitrium.

119. Alii crediderunt hos motus fieri, per substantiam ipsam nervorum, trementium vel vibrantium, ut vocabant, non secus ac chordæ lyræ tremunt (cùm) percussæ plectro.

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

for an explanation of both in certain motions, proper and peculiar to the nervous system, beginning from the organ of sense, and propagated by means of the nerves, to the brain, during sensation; and those beginning in the brain, conveyed to the muscles by the nerves, either the same which are subservient to sensation, or others quite different and distinct, although bound up into the same fasciculus with them, whilst we move the muscles at our will.

119. Some considered, that these motions take place through the medium of the substance of the nerves, trembling, or vibrating, as they term it, in the same way as the strings of the lyre tremble, when struck by the plectrum.

120. Others, by whom it was well perceived how ill the nerves and brain were fitted for perfecting and propagating such tremors and motions, (inasmuch as they are all very soft, and are much obstructed by contact of neighbouring parts, or often bound down to neighbouring parts,) referred the

vicinas) rejecerunt motus, quos contendebant fieri et esse necessarios, in tenuem et valdè mobilem humorem, quem (illi) fingeant inesse nervis, que moveri in iis suis legibus, que possidere multas et miras dotes et excellentias.

121. *Alii demùm potiùs confugerunt ad universalem ætherem, qualem et nuper et olim multis philosophis pervadere implere, que temperare totum mundum variis legibus, ope et ministerio cujus, sidera mearent, sol fulgeret, mare cresceret que decresceret, flumina laberentur, venti spirarent, plantæ pullularent, Jupiter ipse tonaret. Certè æther est utilissimus et strenuissimus, sed nusquam prehensus, nusquam deductus ad quæstionem, ut redderet rationem sui, mutabilior et fugacior Proteo ipso, multum agitatus jam frustra que diu, tandem requiescat in pace. Nam quæ*

gati sint) motus, quos fieri et necessarios esse contendebant, in humorem tenuem et valde mobilem rejecerunt, quem nervis inesse fingeant, 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 mundum pervadere, implere, variisque legibus temperare; cujus ope et ministerio sidera mearent, sol fulgeret, mare cresceret decresceretque, flumina laberentur, venti spirarent, plantæ pullularent, Jupiter ipse tonaret. — Utilissimus certe et strenuissimus æther, sed nusquam prehensus, nusquam ad quæstionem deductus, ut sui rationem redderet, Proteo ipso mutabilior et fugacior, diu multumque jam frustra agitatus, tandem requiescat in pace. Nam quæ spes

motions, which they contended took place, and were necessary, to a subtile and very active fluid, which they imagined to be in the nerves, and is moved in them by certain laws, and possesses many wonderful properties and virtues.

121. Lastly, others have had recourse to an universal æther, such as formerly and lately many philosophers were persuaded, pervaded, filled, and governed the whole universe by various laws; by the aid and attendance of which, the stars moved, the sun shone, the sea rose and fell, the rivers glided along, the winds blew, the plants shot forth, and Jupiter himself thundered. Truly æther is a very useful and powerful agent, but on no occasion laid hold of, never been brought to give an account of itself; more changeable and fleeting than Proteus himself, agitated so long, and to no purpose, at last let

prehendendi "cui in plures jus est transire figuras?"

"Nam modo te juvenem, modo te videre leonem, Nunc violentus aper; nunc quem tetigisse timerent.

Anguis eras; modo te faciebant cornua taurum: Sæpe lapis poteras, arbor quoque sæpe videri. Interdum, faciem liquidarum imitatus aquarum,

Flumen eras; interdum, undis contrarius ignis."

122. Male vero de his aut similibus commentis medici prius disputaverint, quam vel observando vel experiendo, demonstratum fuerit, talem æthera existere, talesque in genere nervoso 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 proficitur; nam tremores nervorum vel motus ætheris, qua-

*spes*prehendendi (illud "cui jus est transire in plures figuras?" Nam modo (illi) vidēre te (quam) juvenem, modo (vidēre) te leonem; nunc (eras) violentus aper; nunc eras anguis, quem (homines) timerent tetigisse: modo cornua faciebant te taurum: sæpe poteras videri lapis quoque sæpe (poteras videri) arbor; interdum, eras flumen imitatus faciem liquidarum aquarum; interdum eras ignis contrarius undis.

122. Autem medici, male disputaverint de his aut similibus commentis prius, quam demonstratum fuerit, vel observando vel experiendo, talem æthera existere, que tales motus fieri in nervoso genere; vel saltem fuerit factum credibile, nodum solutum iri talibus conjecturis. Enim omnibus concessis de æthere et motibus postulatis in genere nervoso, omnino parum efficitur; nam tremores nervorum vel motus ætheris, qualescunque (illi) amantissimi

it rest in peace: for what hope is there of catching, "what is allowed to assume so many forms?"

"For now a man's or lion's form it takes,
Now a rude boar's, and now an odious snake's;
A bull's majestic front is oft thine own;
And oft thou seem'st a tree, and oft a stone:
Now in a bubbling stream thou dost aspire;
And water's foe, now creep in crimson fire."

ORGER'S OVID, book viii, line 941.

122. But medical men did idly dispute on these and similar conjectures, before it was demonstrated either by observation or experience, that such æther exists, and that such motions take place in the nervous system, or it was at least made probable, that the difficulty would be solved by such conjectures. For all things being admitted concerning æther, and the motions required in the nervous system, on the whole little is gained by it; for the tremors of

commentorum hujusmodi potuerint fingere sibi, nusquam erunt aut sensus, aut similes sensui, aut unquam mutabiles in sensum secundum notas naturæ.

123. *Nec quisquam facile ostenderit quo pacto voluntas animi (cui voluntati nihil corporei inest) afficeret tenuissimum, et subtilissimum que mobilissimum ætherem facilius aut melius quam saxum, que conjiceret eum in motus.*

124. *Nec hoc modo melior aut magis perspicua ratio redditur sensuum, qui dicuntur interni; scilicet (ratio) memoriæ, imaginationis et judicii. Erit vix credibile ullos motus retineri et condi in genere nervoso, denuò erupturos et renovandos nostro arbitrio; neque impressiones aut vestigia, aut ullas imagines eorum motuum imprimi in cerebro, veluti sigilli (imprimuntur) in cerâ, quas (imagines) contemplemur iterum*

lescunque commentorum hujusmodi amantissimi sibi fingere potuerint, nusquam aut sensus erunt, aut sensui similes, aut in sensum, secundum notas naturæ leges, unquam mutabiles.

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

124. Nec melior hoc modo aut magis perspicua ratio redditur sensuum qui dicuntur interni: memoriæ scilicet, imaginationis, et judicii. Vix credibile erit motus ullos in genere nervoso retineri et condi, nostro arbitrio denuò 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 contemplemur,

the nerves, or motions of the æther, of whatever description the warmest admirers of such conjectures could have imagined them to be, will never be sensation, or like sensation, or ever capable of being changed into sensation, by any of the known laws of nature.

123. Nor could any one easily show, in what way volition of the mind, (in which volition there is nothing corporeal,) could affect that finest, most subtile, most active æther, more easily or better than a stone, and could throw it into motion.

124. Nor in this manner is a better or clearer explanation given of the sensations which are called internal, namely, memory, imagination, and judgment. It will scarcely be believed, that any motions can be retained and accumulated in the nervous system, again to burst forth and be renewed at our pleasure, nor that impressions, or traces, or any images of those motions, can be impressed upon the brain, like seals upon wax, which we may con-

motusque qui eas primo effecissent denuo integremus. Tamen validissima sæpe est sensuum præteritorum renovatio, recordantibus, imaginantibus, somniantibus.

125. Quod si tales motus ad internorum æque ac externorum 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

iterumque ad nostrum arbitrium, quæ denuo integramus motus, qui primò effecissent eas. Tamen est sæpe validissima renovatio sensuum præteritorum, recordantibus, imaginantibus somniantibus.

125. *Quod si tales motus sunt necessarii æque ad actionem internorum ac externorum sensuum, tum planè oportebit (ut) vel motus præcedant sensum, vel hic (i. e. sensus) (præcedat) illos (motus), vel denique utrique fiant uno quæ eodem puncto temporis.—Si sensus est prior, nequit oriri a quovis motu fluidi nervorum, et igitur debet habere aliam causam.—Si ille motus est prior, causa ejus erit quærenda, scilicet qui possit pendere minime a sensu aut voluntate quæ sequuntur. Si demum uterque, nimirum motus et sensus, simul fit, oportet fingere aliam causam utriusque; enim neuter potest esse causa alterius, prius quam ipse existit.*

126. *Vix sane, aut ne quidem vix, possumus con-*

template again and again at our pleasure, and may renew the motions which primarily produced them. Nevertheless, there is frequently a very powerful renovation of past sensations, to persons recollecting, thinking, and dreaming.

125. But if such motions are equally necessary to the action of the internal and external senses, it must evidently be, either that motion precedes sensation, or vice versâ, or lastly, that both take place in one and the same time. If sensation is first, it cannot arise from any motion of the fluid of the nerves, and therefore must have some other cause. If the motion precedes, its cause must be sought for, since it can by no means depend upon the sensation or volition which follows. Lastly, if both of them, namely, motion and sensation, occur simultaneously, it is necessary to imagine some other cause of both, for neither can be the cause of the other, before its own existence.

126. We can scarcely, and indeed not possibly conceive, that any change

cipere animo, ullam mutationem fieri in rebus corporeis quæ (mutatio) non pendeat a quodam motû, vel saltem conjungatur cum motû aliquo modo. Vero res, de quibus hic agitur (nobis), nimirum sensus tum externus tum internus, et voluntas, et demùm conatus ad movendos musculos vel artus, non sunt corporeæ, neque explanandæ iisdem principiis ac tales res.

127. *Igitur commentis hujusmodi missis, de rebus, quas naturâ forsitan negaverit humanis visibus, tanquam ducentibus ad inutilia, et incomprehensibilia, vel fortasse absurda, erit magis e suâ re, si medici gnaviter accinxerint semet ad investigandas singulas res factas et veras de hoc argumento.*

mutationem ullam in rebus corporeis fieri, quæ a motu quodam non pendeat, vel saltem cum motu aliquo modo conjungatur. Res vero de quibus hic agitur, 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 e re sua erit, si medici ad singulas res factas et veras de hoc argumento investigandas semet gnaviter accinxerint.

can take place in bodies, which does not depend upon some motion, or be connected with it in some degree. But the subjects treated of here, namely external and internal sensation, volition, and lastly the efforts to move the muscles or limbs, are not corporeal, nor to be explained on the same principles as such things.

127. Therefore, conjectures of this kind being laid aside concerning things which nature perhaps has hidden from men's eyes, as conducing to useless, incomprehensible, and perhaps absurd ideas, it will be more to the purpose, if medical men vigorously apply themselves to investigate the separate truths and facts connected with this subject.

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.

129. Utcunque vero simplex primo aspectu sensus videatur, philosophi, rem accuratius perscrutati, duplicem ejus naturam se detexisse crediderunt, et ideo monent probe esse distinguendum inter duas res ad sensum pertinentes, quæ vulgo sub uno eodemque no-

CAP. IV.—*De Sensû generatim, quæ de varietatibus usibus, voluptatibus, molestiis, et vitiis ejus.*

128. *Sensus eget nullâ definitione, neque reverâ potest facillè definiri; quippe quo, sit fere nihil simplicius, aut melius intellectum. Tamen solet describi, autem vix explanari, longo et parum accurato et quidem satis inepto circuitû verborum hujusmodi;—Mutatio in statû animi, cujus sumus conscii effecta aliquâ mutatione in statû corporis.*

129. *Verò utcunque simplex sensus videatur primo aspectû, philosophi perscrutati rem accuratius crediderunt se detexisse duplicem naturam ejus, et ideo monent probe distinguendum esse inter duas res pertinentes ad sensum, quæ res vulgo solent comprehendi sub uno*

CHAP. IV.—*On Sensation generally, and its varieties, uses, pleasures, pains, and disorders.*

128. Sensation requires no definition, nor indeed can it be easily defined; for, than it, there is scarcely any thing more simple, or better understood. However it is accustomed to be described, but hardly explained, by a long, rather inaccurate, and very inappropriate circumlocution of this description; “A change in the state of mind, of which we are conscious, produced by some change in the state of the body.”

129. But, however simple sensation may appear at first sight, philosophers, having inquired into the subject more minutely, have thought that they have discovered a twofold nature of it, and therefore teach us, that distinction is properly to be made between the two things relating

que eodem nomine; quamvis profectò nemo sanus existat tam stupidus qui confuderit res ipsas; et sanè philosophi omnino perperam objecerunt talem errorem vulgo hominum.

130. *Altera harum rerum (nimirum mutatio quæ efficitur in statu animi) spectat ad animum solum, et est propria huic, fugax et peritura suâ naturâ, et simul simplicissima, que aut definienda aut describenda nullis verbis, dissimillima rei externæ quæ excitat sensum, alienissima ab omni corporeâ conditione atque naturâ, ita ut neque ipsa, nec quicquam simile ipsi, possit inesse in externâ re, quam percipimus.*

131. *Verò altera res quæ vulgò comprehenditur sub nomine sensûs nimirum qualitas quævis rei externæ quam contemplamur, quam sensus (scilicet mutatio in statu animi) representat vel suggerit nobis videtur esse*

mine comprehendi solent; 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, suâ naturâ 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 vulgò 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

to sensation, which commonly are wont to be comprehended under one and the same name; although, in truth, no man in his senses can be so stupid as to confound the things themselves: and, indeed, philosophers have very rashly imputed such an error to the bulk of mankind.

130. One of these things, namely, the change which is made in the state of the mind, refers to the mind only, and is peculiar to it, fleeting and perishable in its nature, at the same time most simple, and capable of being either defined or described by no terms, most unlike the external object which excites sensation, very different from every corporeal state and nature of the body, so that neither itself, nor any thing like it, can exist in the external object which we perceive.

131. The other thing which is commonly comprehended under the name of sensation, that is, any quality of an external object which we contemplate, which the sensation (namely, the change in the state of mind), represents or

naturæ. Qualitates enim rerum externarum, 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 possunt.

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 (quodam saltem ex parte) consilio, istas sentiendi facultates a Supremo Opifice notis esse datas. Non omnes verosensushunc usum præstant; neque tam facilis ad totius

naturæ longè diversæ. Enim qualitates externarum rerum, quas percipimus ope sensûs, pertinent ad illas res solas; neque possunt inesse animo ullo pacto, nec habent quicquam simile aut commune cum animo que variis statibus ejus, constantes et durabiles suâ naturâ, sive fuerint perceptæ a nobis sive (fuerint) ignotæ aut neglectæ, neque adeo simplices, quin saltem multæ earum possint facillè et accuratè definiri aut describi, et comparari inter se invicem.

132. Profectò acquirimus plurimam et utilissimam scientiam de rebus externis, facillimo et simplicissimo modo, per varios sensus, præsertim (per) visum et tactum sine ullo studio aut labore: ita ut sit bene perspicuum (saltem ex quadam parte), istas facultates sentiendi datas esse nobis a Supremo Opifice, hoc consilio. Vero non omnes sensus præstant hunc usum; neque via tam facilis patet ad scientiam totius naturæ: et

suggests to us, appears to be of a very different nature. For the qualities of external things, which we perceive by the aid of sensation, relate to them alone, nor can exist in the mind in any degree, nor can they have any thing alike or in common with the mind or its different states; (they) are constant and lasting in their nature, whether they are perceived by us, or unknown and neglected, nor are (they) so simple, but that many of them admit of ready and accurate definition or description, and may be mutually compared together.

132. Truly, we acquire much and most useful knowledge concerning external objects, in a most easy and simple manner, (that is) by means of the various senses, particularly by sight and by touch, without any study or difficulty; so that it is very evident, (to some extent at least,) that these sentient faculties were given by the Supreme Maker with this design. But all the senses do not answer this purpose, nor is there so clear a path open to

sane multa ostendunt, varios sensus, quibus instruimur, sæpe inservire aliis et eximiis usibus.

133. *Sensus fit in homine sano et vigili, quodocunque status cujusvis partis nervosi generis fuerit aliquantum mutatus, sive ista mutatio sit facta ab externâ causâ, sive ab internâ (causâ). Sensus qui fiunt a priore causâ dicuntur (apud medicos) esse ab impressione vel impulsu; (sensus) qui fiunt a posteriore causâ, (dicuntur esse) a conscientia.*

134. *Neque sane sensus fit ab omni impulsu in genus nervosum. Ut sentiamus, oportet, (ut) impulsus sit factus certâ vi aut impetu in partem præditam sensu. Enim sensus est obscurus aut planè nullus a leviori impulsu: autem dolor fit, ab impulsu multò vehementiore, sine ullo distincto*

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, quodocunque status partis cujusvis generis nervosi aliquantum mutatus fuerit, sive ista mutatio ab externa causa, sive ab interna, facta sit. Qui a priore causa fiunt sensus, ab impressione 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 leviori enim impulsu, sensus obscurus aut plane nullus est; ab impulsu autem multo vehementiore, dolor fit, sine ullo distincto sensu; quod

the knowledge of all nature: but many things show that the various senses with which we are supplied, are frequently subservient to other and important uses.

133. Sensation takes place in a man, healthy and awake, whenever the state of any part of the nervous system is in some degree changed, whether that change be produced by an external or internal cause. Sensations which occur from the former cause, are said by medical men, to be from impression or impulse; (but) those which arise from the latter cause, (are said to be) from consciousness.

134. Nor, indeed, is sensation produced by every impulse upon the nervous system. In order that we may have sensation, it is necessary that the impulse be made with a certain force or impetus on the part endowed with sensation. For sensation is dull, or quite unperceived from a slighter degree of impulse, but pain is produced by a much more violent impulse, without any distinct sensation; but if, lastly, the impulse be of a very violent character, and so

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,

sensû; quod si impulsus demum fuerit vehementissimus, que tanta vis fuerit illata sentienti parti, ut fabrica organi ipsius lædatur, tum ferè stupor oritur.

135. *Neque perbrevis impulsus sive impressio, quamvis alioquin satis vehemens, efficit distinctum sensum; nimirum ad quem, aliquod temporis, et quædam diuturnitas impressionis requirantur.—Corpora docent, et quidem molis satis magnæ mota tantâ velocitate, ut nequeant conspici.—Quoque est par ratio multorum dolorum,* quos præstigiatores solent exhibere; quibus hominibus, solet esse, axioma, et quasi fundamentum totius artis, motum esse multo velociorem visû.*

136. *Verò impulsû cessante, que externâ causâ sensûs ideo sublatâ, ipse sensus qui excitatur, solet durare per aliquod, quam-*

much violence is applied to the sentient part that the structure of the organ itself is injured, stupor then generally arises.

135. Nor does a very rapid impulse or impression, although otherwise sufficiently powerful, produce a distinct sensation; namely, for which some time and a certain continuance of impression are required. Bodies of some magnitude, indeed, moved with such velocity that they cannot be seen, show this (fact.) There is the same explanation of the numerous tricks which jugglers are accustomed to exhibit, with which men it is an axiom, and as it were a foundation of their whole art, that motion is much more rapid than vision.

136. But the impulse ceasing, and consequently the external cause of sensation being withdrawn, the sensation, which is excited, is accustomed to

* *Dolorum* is the genitive plural of *dolus*, *i*, deceit, a trick, a plot, &c.

vis exiguum tempus. Circulus flammeus docet, quem (circulum) conspiciamus a rapidâ rotatione ardentis baculi.

137. *Autem sensus non est adeo corporeus, quin multum pendeat a statu mentis. Enim hâc (i. e. mente) occupatâ aliis rebus, impulsus satis validi facti in organa sensuum, vix aut ne quidem vix percipiuntur. Contrâ si probe attendimus animum, gravioribus (impulsibus) neglectis que vix perceptis, sæpe possumus facîle percipere levissimos impulsus.*

138. *Illud mirum et fere incredibile acumen et perfectio singulorum externorum sensuum quæ variî homines occupati variis negotiis solent adipisci multo usû, nititur hoc fundamento, ut videtur, saltem ex magnâ parte: quamvis verisimile sit, nonnihil perfectionis hujusmodi esse tribuendum conditioni organorum, quæ possint acui crebrâ exercitatione variis mo-*

temporis spatium, durare solet.—
Docet circulus flammeus, quem conspiciamus 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 variî homines, variis occupati negotiis, multo usu solent adipisci: quamvis satis sit verisimile perfectionis hujusmodi nonnihil tribuendum esse conditioni organorum, quæ variis modis acui possint crebra exercitatione, et ad pro-

last for some, although for a short time. The fiery ring, which we see by the rapid rotation of a burning stick proves it.

137. But sensation is not so corporeal but that it may depend considerably on the state of mind. For this being employed on other things, impulses, though not inconsiderable, exerted upon the organs of the senses, are scarcely, or not even possibly perceived. On the other hand, if we properly apply the mind, more powerful (impulses) being neglected and scarcely perceptible, we are often able with ease to perceive the slightest impressions.

138. That surprising and nearly incredible acuteness and perfection of the individual external senses, which various men, occupied in different branches of business, are accustomed to acquire by much exercise, rests on this principle, as it appears, at least in a great degree; although it is probable, that some of the perfection of this kind, is to be attributed to the condition of the organs, which may be rendered acute, by frequent exercise in different

pria 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 vix ac ne vix quidem perceptæ, quamvis idonei in organa sensuum impulsus ab iis 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.*

dis, et melius aptari ad propria munera. Bene notum est organa motûs hoc modo proficere haud parùm.

139. *Attentio pendet quodammodo a voluntate: tamen plerumque (attentio) datur sensibus validis, novis, jucundis, ingratis, que demum iis qui afficiunt vel commovent mentem quovis modo præter solitum.*

140. *Hinc tot res vix et ne quidem vix perceptæ, statim (sunt) traditæ oblivioni, quamvis idonei impulsus sint facti ab iis in organa sensuum, vel si quodammodo perceptæ fuerint quamvis minus accurate. Hinc semper novæ res, cæteris paribus, (sunt) maximè observatæ, que novi sensus (sunt) validissimi. Hinc sensus sæpe repetiti, quamvis validi, fiunt familiares brevè et fere negliguntur; vero debiliores impulsus, qui tamen solebant dare satis validum sensum, sæpe repetiti, neque omnino percipiuntur, neque relinquunt ulla vestigia sui* in animo.*

ways, and better fitted to their proper functions. It is well known that the organs of motion, in this manner, receive no inconsiderable benefit.

139. Attention depends in some degree upon the will; yet, it is generally directed to powerful, new, pleasant, and disagreeable sensations, and lastly, to those which affect or excite the mind in any unusual manner.

140. Hence so many things, scarcely and not possibly perceived, are immediately committed to oblivion, although proper impulses have been made by them upon the organs of the senses, or if in any degree perceived, although less accurately. Hence new things, other circumstances being equal, are always most noticed, and new sensations are the most powerful. Hence sensations, often repeated, although powerful, become familiar in a short time, and are commonly neglected; but weaker impulses, which were accustomed to excite sufficiently strong sensation, when frequently repeated, are not at all perceived, nor leave any traces of them in the mind.

* *Sui* of himself, of herself, of itself, is likewise used as a plural pronoun, as *sui*, of themselves.

141. (*Homines*) *sunt, qui strenuè contendunt inter sentiendam, hominem semper contemplari tantùm unicum sensum vel perceptionem externæ rei; sed (illum) ire atque redire tam facillè atque subitò, ab uno ad alium sensum quodammodo ad suum arbitrium, ut primo intuitû videatur sibi capere multos simul.—Sed hoc est minùs certum.*

142. *Vero est certissimum hominem sæpe percipere plures sensus ejusdem generis simul, dummodo hi possint ita conjungi et quasi misceri, ut efficiant unam perceptionem, diversam a singulis, et compositam ex iis. Hæc conjunctio potest fieri vel singulis impulsibus simul factis, vel novis impulsibus tam subitò succedentibus prioribus ut prior sensus nondum desiverit, cum posterior jam inceperit. Enim sensus sæpe durat diutiùs quam impulsus ipse, præsertim si idonea attentio animi fuerit adhibita (136, 137.) Musica compositio sonorum docet;*

141. *Sunt qui strenue contendunt hominem 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 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; do-*

141. There are some men who strenuously contend that, during sensation, man always contemplates only one sensation or perception of an external object; but, that he goes and returns so easily and suddenly from one sensation to another, as it were, at his pleasure, that at first glance, he seems to himself to comprehend many at the same time. But this is less certain.

142. It is very certain, however, that man often perceives several sensations of the same description at the same time, provided they be so combined, and, as it were, mixed, that they effect one perception, differing from the single ones, and composed of them. This union may be produced, either by separate impulses, made simultaneously, or by fresh impulses, so suddenly succeeding the first, that the first sensation has not subsided, when the latter sensation has commenced. For sensation often lasts longer than the impulse itself, particularly if proper attention of the mind be applied, (136, 137.) The musical combination of sounds, shows it; paper tinged with va-

cet charta variis coloribus tineta, quæ rapide in circulum acta, eundem colorem medium vel mixtum, ex aliis compositum, exhibet, ac ipsi colores mixti efficerent. 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. Perceptiones 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 necessariæ sunt. Animi imprimis ratio habenda est, quod ad

charta tineta variis coloribus docet, quæ (charta) rapidè acta in circulum, exhibet eundem medium vel mixtum colorem compositum ex aliis, ac ipsi colores mixti efficerent. Quoque odores et sapes ut videtur: accipiunt pares compositiones singuli suo genere, aliæ quarum reperiuntur gratæ, aliæ ingratisimæ. Ars coqui et unguentarii nititur hoc fundamento, saltem ex magnâ parte. Vero perceptiones sive sensus quos tactus dat, sunt tot que tam diversi ut queant vix ita conjungi, ut efficiant unum medium vel compositum sensum.

143. *Sensus poterit esse varius ex quavis causâ externâ, nimirum impulsu facto in organum sensus certâ vi, et durante certum tempus, propter multas internas res, proprias corpori sentienti, que (propter) multas partes, quæ sunt necessariae ad efficiendum sensum. Imprimis ratio animi est habenda quod ad atten-*

rious colours proves it, which, (if) rapidly moved in a circle, shows the same mean or mixed colour, compounded of the others, as the separate colours, if mixed, would produce. Also odours and tastes, as it appears, admit of like combinations, each in its kind: some of which are found agreeable, others most disagreeable. The art of the cook and perfumer, in a great degree, is dependent upon this foundation. But the perceptions or sensations which touch affords are so numerous and diversified, that they can scarcely be combined, so as to produce one mean or compound sensation.

143. Sensation may be various, from any external cause, that is to say, an impulse produced on an organ of sense, with a certain degree of force, and continuing a certain time, on account of many internal things, peculiar to the sentient body, and on account of the numerous parts which are necessary to produce sensation. In the first place, account is to be taken of the mind, as

tionem, tum quoque (ratio) cerebri (in eo) quod (attinet) ad delirium, torporem, somnum, vigiliam, &c.; tum (ratio) nervorum qui adveniunt sentiens organum, prout fuerint integri, liberi, sani, vel prout compressi vel aliter læsi; tum (ratio habenda est) finium nervorum ipsius organi, prout fuerint magis vel minus sentientes, vel a primâ fabricatione corporis, vel aliis impulsibus antea factis, vel a calore aut frigore, vel a statu vasorum vehentium sanguinem, quæ (vasa) inseparabilia comitantur minutas nervosas fibras, quæ quæ possunt vel laxari vel distendi præter solitum vel demum inflammari: tum denique oportet habere rationem partium, qualescunque fuerint, quæ tegunt et defendunt tenuissimos et acerrimè sentientes fines nervorum, et vel augent, vel temperant vim impressionum. Quales sunt cuticula ubique corporis, tum externa tum interna auris, quæ uterque meatus ejus; et demum varii humores oculi.

attentionem; tum quoque cerebri, quod ad delirium, torporem, somnum, vigiliam, &c.; tum nervorum qui organum sentiens ardeunt, prout integri, liberi, sani, vel prout compressi, aliterve læsi fuerint; tum finium nervorum, ipsius organi, prout magis minusve sentientes fuerint, vel a prima corporis fabricatione, vel ab aliis impulsibus antea factis, vel a calore aut frigore, vel a statu vasorum sanguinem vehentium, quæ minutas nervosas fibras comitantur inseparabilia, quæque vel præter solitum laxari vel distendi, vel demum inflammari possunt; tum denique partium, qualescunque fuerint, rationem habere oportet, quæ fines nervorum tenuissimos et acerrime sentientes tegunt et defendunt, et vim impressionum vel augent vel temperant. Quales sunt cuticula ubique corporis, auris tum externa tum interna, ejusque meatus uterque; et varii demum oculi humores.

to attention; then of the brain, as to delirium, torpor, sleep, watchfulness, and then of the nerves which enter the sentient organ, according as they are sound, free, healthy, or compressed, or otherwise injured: then of the extremities of the nerves of the organ itself, as to being more or less sentient, either from the primary structure of the body, or other impulses previously made, or from heat, or cold, or the state of the blood-vessels, which inseparably accompany the minute nervous fibres, and which may be unusually relaxed, or distended, or at length, inflamed: we must, lastly, take into account the parts, whatever they be, which cover and protect the very minute and very sentient extremities of the nerves, and (which) either increase or modify the force of impressions. Such are, the cuticle of every part of the body, the external and internal ear, both its passages, and lastly, the different humors of the eye.

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, huc referri possunt. Tum quoque varii corporis status, vigor, debilitas, alacritas, torpor, lassitudo, dolor, anxietas, pruritus, appetitus, veluti fames et sitis, propensiones demum multæ, quales ad tussim, vomitum, alvum evacuandam, et similia, impellunt. Plerosque vero horum sensuum, quatenus 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, paucæ corporum externorum qualitates, quas unusquisque

144. Porro nonnulli sensus oriuntur a multis internis causis, nullâ externâ causâ aut juvante aut concurrente. Ipsa mens conscia sui, et varii status ejus, (scilicet) cogitatio, memoria, imaginatio, voluntas, omnes affectus, possunt huc referri. Tum quoque varii status corporis, scilicet, vigor, debilitas, alacritas, torpor, lassitudo, dolor, anxietas, pruritus, appetitus, veluti fames et sitis, demum multæ propensiones, quales impellunt ad tussim, vomitum, (ad) alvum evacuandam et similia. Verò solemus referre ad sensum tactus, plerosque horum sensuum, quatenus (hi sensus) sunt corporei.

145. Sensus, tum externi tum interni, nunquam sunt relati accuratè ad classes vel genera. Verò (sensus) externi semper et ubique referuntur ad quinque genera, nempe, visum, auditum, olfactum, gustum et tactum. Quod spectat (ad) quatuor priores, paucæ qualitates externorum corporum, quas (qualitates) unusquisque co-

144. Moreover some sensations arise from many internal causes, no external (cause) either assisting or concurring. The mind, conscious of itself, and the various states of it, (such as) thought, memory, imagination, will, and all affections, may be referred to this cause. Then likewise the various states of the body; (such as) vigour, debility, cheerfulness, torpor, weariness, pain, anxiety, itching, appetites, such as hunger or thirst; lastly, many inclinations which urge us to cough, vomit, evacuating the bowels, and the like. But we are accustomed to refer many of these sensations, as far as they are corporeal to the sense of touch.

145. Both the external and internal sensations have never been accurately referred to classes or genera. But the external ones are always and universally referred to five genera; namely, sight, hearing, smell, taste, and touch. As to the first four, the few qualities of external bodies which each of them

rum percipit, facile reducuntur in classes invicem diversas a se, et referuntur ad unum et proprium sensum. Imprimis, quia ipse sensus habet singulare et proprium organum, neque insidet alibi in corpore, aut potest excitari quovis modo; tum quoque quia organum sensus afficitur ab uno genere impulsus veluti lucis, tremorum aëris, volatilium particularum; tum denique quia perceptiones ex singulis istorum sensuum, quantumvis videantur differre inter se, semper habent aliquid commune, ita ut possint comparari que similitudines et differentiae, earum possint detegi.

146. *Hoc est verissimum de rebus, quas aures, nares vel lingua percipiunt. Verò oculi capiunt plures res, que eas (res) satis dissimiles; scilicet colorem, figuram, magnitudinem et motum. Tamen omnes hæ perceptiones facile referuntur ad unum sensum, quia percipiuntur, per idem or-*

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 differentiae 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 idemque medium, ut vo-*

perceives, are easily reduced into classes, differing from each other, and are referred to one and its proper sense. Especially, because the sense itself has its own peculiar organ, nor resides in any other part of the body, nor can be produced in any manner; and because the organ of sense is affected by only one kind of impulse, as of light, tremors of the air, (or) volatile particles; and, lastly, because the perceptions of the individual senses although they may appear to differ between themselves, have always something in common, so that they may be compared, and their resemblances and differences be detected.

146. This is very true concerning things, which the ears, nostrils, or tongue, perceive. But the eyes take in more objects, and those of a dissimilar description: namely, colour, shape, size, and motion. Nevertheless all these perceptions are easily referred to one sense, because they are perceived through the same organ, and the same medium, as it is called, and the same kind

catur, idemque genus impulsus, percipiuntur. Reliquæ autem perceptiones, utcunque dissimiles, fuerint, ad sensum tactus referuntur.

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

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

ganum que idem medium, ut vocatur, que (per) idem genus impulsus. Autem reliquæ perceptiones, utcunque fuerint dissimiles, referuntur ad sensum tactus.

147. Plerique sensus reperiuntur grati vel ingrati; scilicet non modo monent nos de rebus externis, que representant nobis qualitates earum, sed simul ita afficiunt animum ut vel cupiamus aut nolumus eosdem sensus, continuari aut repeti.

148. In quibusdam exemplis sensuum, sensus ipse, scilicet mutatio quæ efficitur in statu animi est jucundus, et voluptas nascitur ab eo solo. Verò in aliis exemplis, sensus non dat voluptatem tantum quam perceptio, nimirum qualitas seu conditio rei externæ quam percipimus et cognoscimus ope sensus.

149. Jucundi sensus seu voluptates, quas, gustus, olfactus, auditus suggerunt nobis, sunt exempla prioris generis; quibus oportet ad-

of impulse. But the other perceptions, however dissimilar, are referred to the sense of touch.

147. Most of the sensations are found (to be) agreeable or disagreeable; that is to say, they not only admonish us of external objects, and represent to us their qualities, but at the same time so influence the mind, that we desire or dislike the same sensations to be continued or repeated.

148. In some instances of sensations, the sensation itself, that is the change which is produced in the state of the mind, is agreeable, and pleasure is derived from it alone; but in other instances, sensation does not so much afford pleasure as the perception, that is, the quality or condition of an external object, which we perceive and know by means of the sense.

149. The agreeable sensations or pleasures which taste, smell, and hearing afford, are instances of the first kind; to which we must add certain sensa-

iungere quosdam sensus quos tactus dat, veluti caloris. Nimirum in his exemplis attendimus ad sensum solum, neque docemur quicquid ab eo, de causâ seu qualitate externi corporis, quæ (qualitas) efficit sensum. Si novimus quid istiusmodi, planè didicimus id, ope aliorum sensuum et iudicii, observando, periclitando, ratiocinando.

150. *Quædam jucundæ perceptiones qualitatum externarum rerum, quas (qualitates) vel visus vel tactus suggerunt nobis, sunt ex exemplis posterioris (generis), veluti (qualitas) omnis visibilis pulchritudinis, formæ, proportionis, motûs, et forsitan quoque coloris; vel denique tactilis formæ, aut lævoris, aut mollitiei. Scilicet perceptio ipsa placet in his exemplis: que sensû neglecto, seu statû animi mutato, statim transimus ad rem seu qualitatem quam ille sensus suggerit, que sæpe contemplamur eam cum voluptate.*

tet 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. Si quid istiusmodi novimus, id, ope aliorum sensuum et iudicii, observando, periclitando, ratiocinando, plane didicimus.

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 mollitiei. 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.

tions which touch conveys, as of heat. In these instances, indeed, we attend to the sensation only, nor are we taught from it any thing concerning the cause or quality of the external body, which produces sensation. If we have known any thing of that kind, we have truly learned it by means of the other senses and of judgment, by observing, experimenting, (and) reasoning.

150. Certain agreeable perceptions of qualities of external objects, which either sight or touch suggest, are instances of the latter kind; as of every kind of visible beauty, form, proportion, motion, and perhaps also of colour: or, lastly, of tangible form, smoothness, or softness: that is to say, the perception itself pleases in these instances; and the sensation being neglected, and the state of the mind being changed, we immediately make a transition to the object or quality which that sensation suggests, and often contemplate it with pleasure.

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, eademque semper singuli causas agnoscunt; neque eidem homini, variis temporibus, eadem impressio varium dat sensum seu perceptionem; neque ratio ulla existit, cur credamus eandem rem seu impressionem diversum diversis hominibus sensum aut perceptionem dare,

151. *Profectò videtur difficillimum explanatu, cur tot diversi sensus oriantur a variis generibus impressionum factarum in certa organa corporis (145, 146). Autem est multò difficilius explanatu, cur tales sensus excitentur ferè ab omni genere impressionum in varia organa corporis, quales non modo singuli representaverint suam perceptionem animo (130, 131), sed delectaverint eundem simul vel plurimum, vel affecerint insigni dolore, angore, molestiâ, (vel) fastidio.*

152. *Enim sensus, utcunque diversi inter se, secundum varia organa eorum, quæ (secundum) res quæ afficiunt hæc (i. e. organa,) sunt tamen constantes, quæ semper singuli agnoscunt eadem causas; neque eadem impressio dat varium sensum seu perceptionem eidem homini, variis temporibus: neque ulla ratio existit, cur credamus eandem rem, seu impressionem dare diversum sensum aut perceptionem in*

151. It appears, indeed, very difficult to be explained, why so many different sensations should arise from the various kinds of impressions made upon the organs of the body, (145, 146.) But it is much more difficult to be explained why such sensations should be excited by nearly every kind of impression upon the different organs of the body, such as not only represent to the mind each its individual perception, (130, 131,) but at the same time either afford it considerable delight, or affect it with great pain, anguish, trouble, (or) aversion.

152. For sensations, however different amongst themselves, according to the various organs of them and the circumstances which affect them, are nevertheless constant, and always individually recognise the same causes; neither does the same impression afford a different sensation or perception to the same man at different times; nor does any reason exist, why we should suppose that the same object or impression affords a different

diversis hominibus, nisi in nonnullis rarissimis exemplis, in quibus verisimile est aliquod vitium, neque sanè leve, subesse in corpore, vel saltem organa sensuum hujus (corporis) multum alienari a solito et naturali statu.

153. *Verò voluptas, vel molestia vel fastidium, quæ comitantur tot sensus, variant quam maximè, cum in variis hominibus, tum in iisdem, variis temporibus.*

154. *Quoque vis consuetudinis in voluptates aut molestias sensus est insignis et fere incredibilis; autem (illa est) exigua in ipsum sensum, et omnino nulla in perceptionem qualitatis externæ rei quam sensus suggerit. Enim nemo sanus, vel naturâ vel consuetudine, potest percipere durum, pro molli, aut rubrum pro viridi, aut mel pro absinthio, aut absinthium pro melle; quamvis vel (a) singulari constitutione corporis, vel demum consuetudine solâ, ista ama-*

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 naturâ vel ullâ 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

sensation or perception in different men, unless in some very rare instances, in which it is probable that there is some disorder, (and that not slight) in the body, or, at least, that the organs of sense of this (body) are much changed from their usual and natural state.

153. But the pleasure, uneasiness, or aversion, which attend so many sensations, vary very much, both in different men, as well as in the same men at different times.

154. The power of habit also upon the pleasures and troubles of sensation is remarkable, and nearly incredible; but (it is slight) upon sensation itself, and lost completely upon the perception of the quality of an external object, which the sensation suggests. For no sensible man, either by nature or habit, can mistake hard for soft, red for green, or honey for wormwood; although, either by peculiar constitution of body, or by habit alone, that very bitter

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 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, natura ejus nil mutata, secundum ipsius vehementiam. Nullus enim existit sensus adeo jucundus, quin ultra modum intensus, ingratus evadat, nonnunquam fere intolerabilis. Et contra omnino, qui natura solitaque vehementia, multum offendunt, leviores

rissima herba potest fieri gratior et jucundior gustui Hymettio melle.*

155. Quamvis plerique sensus sint plus (vel) minus grati, tamen non est negandum, insigne discrimen intercedere inter eos de hac re, et alios naturâ ferè esse gratissimos omnibus hominibus, alios (esse) valdè ingratos, nonnullos demum (esse) adeo indifferentes ut dent neque voluptatem, neque ullam molestiam. Nulla ratio discriminum sensuum hujusmodi hactenus est reddita.

156. Tamen, est quoddam novisse, ferè unumquodque genus sensuum, esse vel gratum vel ingratum, secundum vehementiam ipsius, naturâ ejus mutata nil. Enim nullus sensus existit adedò jucundus, quin intensus ultra modum, evadat ingratus, nonnunquam ferè intolerabilis. Et contrâ omnino, (sensus), qui offendunt multùm, naturâ que solitâ vehementiâ, (cùm)

herb may become more acceptable and agreeable to the palate than Hymettian honey.

155. Although most of the sensations are more or less agreeable, it cannot be denied, that there is a great difference between them in this respect, and that some of them are by their nature most pleasing to all men, and that others are very unpleasant, and lastly, that some are so indifferent, that they neither give pleasure nor uneasiness. No reason for differences of this description has hitherto been given.

156. Nevertheless, it is worth being known, that almost every kind of sensation is either pleasant or unpleasant, according to its force, its nature not being at all changed; for no sensation exists so agreeable, but that, if immoderately extended, it may become unpleasant, and sometimes nearly intolerable; on the other hand, (those sensations) which by their na-

* Mount Hymettus, in Attica, was celebrated for its honey, hence *mel Hymettium* is used proverbially to express the best honey.

facti leviores, fiunt sæpe tolerabiles et interdum admodum jucundi.

157. *Ferè est par ratio quodd multi sensus, primò grati, cessent delectare, si fuerint repetiti sæpiùs, quamvis fuerint semper ejusdem naturæ et vehementiæ, (in tanto) quantum attinet (ad) ipsam impressionem; et multi (sensus) primo ingrati desinant displicere, et tandem placeant, quamvis neque natura neque vehementia impressionis vel fuerint minimum mutata. Scilicet, sensus sæpe repetiti, facti familiares consuetudine solâ, percipiuntur segniùs (140), et tandem penitùs negliguntur, nullâ attentione animi adhibitâ.*

158. *Hinc quoque ratio potest reddi, cur novi sensus ferè placeant magis; cur varietas (est) adeò jucunda; cur cupiamus validiores sensus, vel saltem impressiones in organa cujuslibet sensus, ut vel augeamus, aut continuemus volupta-*

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 mutata fuerint. Scilicet, sola consuetudine familiares facti, sensus sæpe repetiti, segnius percipiuntur (140,) et tandem negliguntur penitus, nulla animi attentione adhibita.

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;

ture, and with their usual force, disturb considerably, if rendered milder, often become supportable, and occasionally very agreeable.

157. There is nearly the same reason why many sensations, (which were) at first agreeable, cease to delight, if often repeated, although they are always of the same nature and force, as far as the impression is concerned; and many (sensations,) unpleasant at first, please at length, although neither the nature nor force of the impression be in any degree changed: that is to say, sensations often repeated, and become familiar by habit alone, are perceived less forcibly, and at length are quite neglected, (from) no attention of the mind being applied.

158. Hence likewise a reason may be given why new sensations are generally more pleasant: why variety is so charming; why we desire stronger sensations, or at least impressions, upon the organs of any sense, in order that we may either increase or continue our pleasure; why we scarcely and

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 habuimus, 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

tem; cur vix ac ne quidem vix attendamus ad tot voluptates, neque ferè sciamus tales extitisse, antequam amiserimus eas; cur (sunt) tot voluptates, que tam constantes et puræ, que ideo tanta et tam continua hilaritas animi, pueris præ senibus. Enim quantum cunque voluptatis (homo) haberet subito donatus novâ facultate sentiendi, aut cæcus denuò redditus visui, tantum (voluptatis), omnes olim habuimus ab omnibus sensibus, quamvis longus usus et consuetudo jam pene deleverint istam voluptatem.

159. Plerique sensus, satis validi ut distinguantur facilè et accurate, quisque suo genere et modo, ferè placent maximè. Autem varia genera voluptatum existunt; que igitur varii sensus possunt delectare animum, variis modis. Neque profectò aut splendor solis, aut pulchra et vivida meridianæ facies totius naturæ, sola delectant oculos homi-

not at all attend to many pleasures, nor are scarcely conscious that they existed before we have lost them; why there are such numerous pleasures, so constant and pure, and consequently such constant cheerfulness in boys compared with old men. For whatever degree of pleasure a person might derive (who is) suddenly endowed with some new sentient faculty, or a blind man again restored to sight, just as much we have all formerly derived from all the senses, although long use and custom have now almost obliterated that pleasure.

159. Most of the sensations, sufficiently powerful that they can be distinguished with ease and accuracy, each in its peculiar manner, please the most; but there are various kinds of pleasures; and, therefore, different sensations may delight the mind in different ways. For indeed neither does the splendor of the sun, nor the fair and glowing noonday face of all nature alone delight the eyes of men, nor do great concerts alone please the ears; for they,

num, neque magni concentus soli, (delectant) aures eorum, scilicet qui, voluptate longe diversâ, sed tamen haud exiguâ, spectant obscura templa numinis, et adeunt umbrosos lucos per lunam, que demum lubentes contemplantur nigram formidinem noctis; et auscultant zephyrum agitantem sylvas, aut susurrum apum, aut murmur fluminis. Quin est et tempus, quo tenebræ, silentium, que demum absentia omnis sensûs, sola placent.

160. Igitur sunt sui limites, et quidem satis arcti, voluptatibus sensuum; quippe quæ neque possint multum augeri, neque nimis sæpe repeti, neque diù produci aut continuari: quasi ipsa natura modo moneret, hominem non esse natum voluptatibus solis, saltem non voluptatibus hujusmodi: enim languor aut fastidium abrumpunt (voluptates) nimis cultas; insignis molestia aut dolor tandem exci-

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 nigram formidinem lubentes 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 quæ 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 tan-

with a very different, but not inconsiderable degree of pleasure, review the sombre temple of the deity and enter the shady groves by moonlight, and from inclination contemplate the dark horrors of night, and listen to the zephyr shaking the woods, or the hum of the bees, or the murmur of the stream. Moreover, there is a time when darkness, silence, and the absence of every sense, alone give delight.

160. Therefore there are its limits, and those rather narrow, to the pleasures of the senses; for they cannot be much increased, nor too often repeated, nor long called forth, or continued; as if nature, in this manner, admonished that man is not born for pleasures alone, at least of this description; for languor or loathing break off those too much followed; great uneasiness or pain at length follow others. And, indeed, in the same way as pleasure

dem 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 invisæ; quas tamen Jupiter ita sociavit, et tam indissolubili vinculo conjunxit, ut quamvis natura contrarias, et diverse spectantes, quicunque alterutram amplectitur, alteram trahat simul.

161. Magna autem hac de re inter varias sentiendi facultates, variasque quas dant voluptates, differentia observatur. Quædam brevi fatiscunt, neque res quas debent, distinguunt bene, neque

piunt nonnullas. Et profecto, ut voluptas transit tam facile, in molestiam aut dolorem, sic, ferè pari ratione, subita cessatio doloris, saltem magni, aliquando est incredibilis voluptas, qualis nimirum certè emptores non deessent, si esset facultas emendi minore aut quovis alio pretio. Voluptas et dolor fuerunt sorores, ut pulchra fabula Socratis docet, utcunque dissimiles, que expertæ diversam sortem: nimirum altera optata et grata omnibus; altera pariter invisæ; quas (sorores) Jupiter sociavit ita, et conjunxit vinculo tam indissolubili, ut quamvis contrarias naturâ, et spectantes diversè, quicunque amplectitur alterutram, simul trahat alteram.

161. Autem magna differentia observatur de hâc re, inter varias facultates sentiendi, que varias voluptates quas dant. Quædam (facultates) fatiscunt brevi, neque bene distinguunt res, quas debent, neque amplius

passes so easily into uneasiness or pain, so nearly in the same way, sudden cessation of severe pain is sometimes an inconceivable pleasure, of such a nature indeed, that purchasers would not be wanting, if this were to be purchased at any price. Pleasure and pain were sisters, as the beautiful fable of Socrates informs us, however dissimilar, and experiencing a different lot; for the one is longed for and acceptable to all, the other is equally detested: which however Jupiter has so associated and united in an indissoluble bond, that although opposite in their nature, and looking in opposite ways, whoever embraces either of them must take the other with him.

161. Great difference is observed, in this respect, between the various faculties of sensation, and the different pleasures which they afford. Some of them quickly weary, nor distinguish properly the things that they ought, nor

delectantur rebus ipsis, quas satis distinguunt, et quæ fuerant primò gratissimæ; aliæ (facultates) valent diutius ad sua munera, et fruuntur magis diuturnâ voluptate. Sic olfactus et gustus ferè satiantur brevi; auditus (satiatur) tardiùs; visus (satiatur) longè tardissimè omnium externorum sensuum. Autem voluptates quæ derivantur a mente solâ, seu internis sensibus, sunt maximè longævæ omnium. Demum possumus producere haud parum omnes voluptates, variando eas, quæ miscendo alias cum aliis, vel sæpe interponendo res minùs gratas iis quæ magis delectant, ut ne sit quid nimis.

162. *Et quædam aliæ res supersunt, planè diversæ a (rebus) jam memoratis, quæ multum regunt nonnullas voluptates sensuum; nimirum variæ conditiones universi corporis, præsertim nervorum, vel quorundam organorum aut functionum*

amplius delectantur rebus ipsis quas satis distinguunt, et quæ primo gratissimæ fuerant: aliæ diutius ad sua munera valent, et magis diuturna 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 demum 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, orga-

are longer pleased with the objects themselves, which they clearly distinguish and which were at first very agreeable: others are longer competent to their functions, and enjoy a longer source of pleasure. Thus, generally, smell and taste are quickly satiated, but hearing more slowly, and sight by far the slowest of all the external senses. The pleasures which are derived from the mind alone, or the internal sensations, are the most permanent of all. Lastly we may protract considerably all our pleasures, by varying them, and blending them together, or often by interposing things less pleasant with those which are most so, that there may be no excess of either.

162. Also some other circumstances remain, quite different from those already mentioned, which influence considerably some pleasures of the senses; for instance, the different states of the system generally, particularly of the nerves, or certain organs or functions compared with others, to which func-

na quædam sensus, fortasse et sensus ipsi, magna ex parte, inserviunt. Et hæc inter alias causas est, quod multæ, et quæ maxime coluntur, voluptates, immortales esse nequeant. Sitienti pura aqua pro nectare est; esurienti omnis cibus gratissimus, etiam cibi odor jucundus: æstuantî aut febricitanti frigus, frigenti calor, placet. Iisdem vero hominibus, aliis temporibus, eædem res non modo non gratæ sunt, sed sæpe valde ingratae, 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

præ aliis, quibus functionibus, quædam organa sensus et fortasse sensus ipsi, ex magnâ parte inserviunt. Et hæc est (causa) inter alias causas, quod multæ voluptates, et (illæ) quæ maximè coluntur, nequeant, esse immortales. Aqua pura est pro nectare (homini) sitienti; omnis cibus (est) gratissimus, etiam odor cibi (est) jucundus esurienti; frigus placet æstuantî aut febricitanti, calor (placet) frigenti. Verò eædem res non modo non sunt gratæ, sed sæpè valdè ingratae iisdem hominibus, aliis temporibus, veluti cibus aut potio, utcunque delicatus, statim post pastum aut potum; vel odor cibi statim post prandium: neque profecto aut perpetuæ epulæ, aut alterum prandium statim a primo (prandio) possunt delectare perditissimum helluonem: neque Venus ipsa semper placet etiam strenuissimis cultoribus.

163. Quin voluptas aut molestia possunt oriri et ab

tions some organs of sense, and perhaps the senses themselves, are in a great degree subservient. This is one amongst other causes, why many pleasures, and those too much cultivated, cannot be immortal. Plain water is like nectar to the thirsty man; every kind of food is most acceptable, and even its odour is grateful to the hungry man; cold is pleasant to him who is overheated and feverish, but heat is agreeable to him suffering from cold. But the same things are not only not pleasant, but often very unpleasant to the same men, at different times; as food or drink, however delicate, immediately after eating or drinking, or the smell of food, directly after dinner; nor indeed can a series of feasts, or a second dinner, directly after the first, be acceptable to the most desperate gormandizer; nor does Venus herself always attract her most strenuous votaries.

163. Moreover pleasure or pain may arise from other sensations, besides

aliis sensibus præter illos, qui fiunt ab externâ impressione (133, 144):—voluptas percipitur ab actione musculorum, quatenus hæc (actio) fuerit fortis, facilis, alacris, neque continuata ad fatigationem; verò contrarii sensus ab actione musculorum, nempe (sensus) hebetudinis, lassitudinis, difficultatis, debilitatis, semper sunt molesti: demum varii status animi, affectus, variæ exercitationes memoriæ, imaginationis, iudicii, ferè pari ratione, reperiuntur nunc grati nunc molesti.

164. *Sit æquum concludere ex his omnibus, ut videtur, naturam providisse hominibus, tantâ benignitate et liberalitate, que suppeditasse tot voluptates iis, ut non modo viverent, sed fruerentur vitâ, quam (illa dedit.)*

165. *Neque sane voluptates sensuum carent suis et eximiis usibus. Illa generalis suavitas, quæ comitatur ferè omnes sensus,*

externæ (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 his omnibus, ut videtur, concludere æquum sit, 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 eximiis usibus carent sensuum voluptates. Suavitas illa generalis quæ omnes fere sensus, præsertim prima ætate,

those produced by an external impression (133, 144.) Pleasure is derived from the action of the muscles, inasmuch as it is powerful, vigorous, not continued to fatigue; but the contrary sensations, from the action of the muscles, namely, of dulness, lassitude, difficulty, and debility, are always troublesome; lastly, different states of mind, affections, different degrees of exercise, as of memory, imagination, and judgment, are commonly, for the same reason, at one time agreeable, at another painful.

164. It is fair to conclude from all these circumstances, as it appears, that nature has provided for men with such kindness and liberality, and has supplied so many pleasures to them, that they might not only live, but enjoy the life which she gave them.

165. Nor, indeed, are the pleasures of the senses without their own and important uses. That general suavity which generally attends all our sensa-

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.

præsertim primâ ætate, invitat nos ad probè exercendas varias facultates sentiendi, et sic acuendas, quæ simul acquirendam nobismet quotidie plurimam et utilissimam scientiam (131, 132.)

166. *Ferè pari ratione homines præsertim pueri invitantur ad exercenda modicè et crebrò sua organa motûs, quorum sic insita vis promovetur, et facilis et promptus usus discitur.*

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

168. *Postremò, iuducimur, illâ voluptate quæ oritur a modicâ exercitatione mentis, ad exercendas et excolendas nobilissimas facultates ejus, (i. e. mentis): quæ sunt exiguæ, (cùm) neglectæ et otiosæ, fiunt pene divinæ, (cum) probè cultæ.*

tions, particularly in early age, invites us properly to exercise the various faculties of sensation, and thus to sharpen them, and at the same time to acquire daily for ourselves much and most useful knowledge.

166. Nearly in the same way, men, and boys in particular, are invited to exercise moderately and frequently, their organs of motion, the innate power of which is thus promoted, and easy and free use is acquired.

167. Moreover we are invited, by a recompense of extreme pleasure, to certain actions of the greatest importance, namely, by such as individuals are preserved, or the human race is propagated.

168. Lastly, we are induced by the pleasure which arises from moderate exercise of the mind, to exercise and cultivate its most noble faculties; which are slight when neglected and unemployed, (but if) properly cultivated, become nearly divine.

169. *Demum singuli sensus quibus instruimur, tum externi tum interni sunt obnoxii variis vitiis; scilicet, unusquisque (sensuum), præsertim externorum, potest esse vel nimis acutus, vel nimis obtusus, vel abolitus, vel denique depravatus. — Fortasse huc quoque multi molesti sensus possunt referri, qui, sive sint primarii morbi, sive (sint) tantum signa aliorum morborum, optimo jure vindicant sibi attentionem medici (34.)*

169. Singuli demum quibus instruimur sensus, tum externi tum interni, variis obnoxii sunt vitiis; unusquisque scilicet, præsertim externorum, 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.)

169. In fine, all the senses with which we are supplied, both external and internal, are exposed to various diseases; for each of them, and particularly the external ones, may be either too acute, or too obtuse, or destroyed, or lastly, depraved. Perhaps several painful sensations may be referred here, which, whether they be primary diseases or only symptoms of diseases; by the greatest right claim to themselves the attention of the medical man.

CAP. V.—*De Tactu ejusque vitiis; 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 accuratiorem daturæ; sed potius conjectura a linguæ fabricâ 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, lævitatem,

CAP. V.—*De Tactû quæ (de) vitiis ejus; nec non de dolore, (de) anxietate et pruritû.*

170. Tactus est simplicissimus et maximè generalis omnium externorum sensuum: quippe qui sit communis toti nervoso generi, sed (est) acutior certis partibus, veluti cuti, et imprimis apicibus digitorum. Hi (digiti) dicuntur habere nervosas papillas, quæ, erigantur quodammodo in tactû sanguine influente, daturæ accuratiorem sensum. sed hæc opinio nititur potius conjecturâ derivatâ a fabrica linguæ, quæ est non modo organum gustûs, sed etiam delicatissimum organum tactûs, quam certis observationibus rei ipsius.

171. Tactus percipit varias qualitates corporum; (scilicet), duritiem, mollitiem, asperitatem, lævita-

CHAP. V.—*On Touch, and its disorders; also on pain, anxiety, and itching.*

170. Touch is the simplest and most general of all the external senses; for it is common to the whole nervous system; but it is more acute in certain parts, as in the skin, and particularly in the points of the fingers. These are said to have nervous papillæ, which are erected in some way during touch, by blood flowing into them, about to give more accurate sensation; but this opinion rests rather on conjecture, derived from the structure of the tongue, which is not only an organ of taste but also a very delicate organ of touch, than on any certain observations of the fact itself.

171 Touch perceives various qualities of bodies, such as hardness, softness, roughness, smoothness, heat, cold, size, figure, distance, pressure, and

tem, calorem, frigus, molem, figuram, distantiam, pressuram, pondus: (est) raro fallax vel depravatus; scilicet quia, corpora, qualitates quorum sunt explorandæ, admoventur proximè ad organum ipsum, nullo medio interposito, varietates cujus (medii) possint fallere vel corrumpere sensum.

172. (*De eo*) quod pertinet ad vitia tactus, (*tactus*), observatus est nimis acutus in universum in rarissimis si (in) ullis exemplis. Verò (*tactus*) fit sæpe acutior justo singulari parti, vel a cuticulâ nimis tenui, aut molli, aut sublata, vel parte ipsâ inflammata, vel expositâ nimio calori.

173. Tactus fit nimis obtusus, aut aboletur planè in universo corpore, vel in magnâ parte ejus, a variis vitiis cerebri, que nervorum, compressione, vulnere, (vel) defectû vitalis vis: hoc vocatur, *Anæsthesia*, aliquando comes paralyseos: et non-

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 universum rarissimis si ullis in exemplis observatus est. Parti singulari vero acutior justo sæpe sit, vel a cuticula nimis tenui, aut molli, aut sublata, vel parte ipsa inflammata, vel nimio calori exposita.

173. Nimis obtusus fit, aut plane aboletur in universo corpore, vel in magna ejus parte, a variis vitiis cerebri nervorumque, compressione, vulnere, vis vitalis defectu: hoc *Anæsthesia* vocatur, paralyseos aliquando comes; et non-

weight; (it is) rarely fallacious or depraved; for the reason that bodies, the qualities of which are to be examined, are applied very near to the organ itself, no medium being interposed, the varieties of which can mislead or corrupt the sensation.

172. As to the disorders of touch, it is observed to be too acute in the body generally, in very rare, if in any, instances; but it is often too acute in some single part, either from the cuticle being too thin, or soft, or raised, or from the part itself being inflamed, or exposed to too much heat.

173. Touch becomes too obtuse, or is quite destroyed in the body generally, or in great part of it, by different disorders of the brain and nerves, by compression, a wound, (or) loss of vital power. This is called *Anæsthesia*, sometimes an attendant of paralysis, and sometimes observed on one side without

nunquam in altero latere observatum sine paralyti, 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, cuticula quæ tegit vitiata, nimis crassa, aut dura facta, asperorum aut nimis calidorum corporum contrectatione, quod vitriis, 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, gangrenâ, 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

nunquam observatum (est in altero latere sine paralyti, dum alterum (latus) factum est paralyticum, sensû integro.

174. (*Tactus*) deficit in singulari parte, vel a vitio nervi ejus (scilicet) compressione, obstructione, vulnere, &c. vel parte ipsâ expositâ nimio frigori: vel demum, (a) cuticulâ quæ tegit eam vitiatâ, nimis factâ crassâ, aut durâ, (a) contrectatione asperorum aut nimis calidorum corporum, quod accidit vitriis fabris, quæ (fabris) ferrariis: vel subjectâ cute elevatâ, sanguine, sero, (vel) pure interposito: vel (ab) cute ipsâ maceratâ, laxatâ, factâ torpidâ, quod nonnunquam accidit hydropicis: vel demum a toto organo corrupto, gangrænâ, ustione, algore, (vel) contusione.

175. *Tactus* rarissimè depravatur, nisi forte inter delirium, quum omnes functiones cerebri, turbantur in mirum modum.

176. Ut voluptas aut dolor possunt oriri a reliquis sensibus, sic etiam (possunt

paralysis, whilst the other side has been rendered paralytic, with sensation entire.

174. It is defective in a particular part, from disorder of its nerve, by compression, obstruction, a wound, &c.; or from the part being exposed to too much cold; or lastly, from the cuticle which covers it being disordered, rendered too thick or hard, by the handling of rough or too hot bodies, which occurs to glass-workers and blacksmiths; from the subjacent skin being raised by blood, serum, or pus, interposed; from the skin itself being macerated, relaxed, rendered torpid, which sometimes occurs to dropsical patients; or lastly, from the whole organ being corrupted by gangrene, burning, cold, (or) contusion.

175. Touch is very seldom depraved, except by chance, during delirium, when all the functions of the brain are disturbed in a surprising manner.

176. As pleasure or pain may arise from the other senses, so likewise (they

oriri) a tactu. Solemus contemplari, lævorem, molli-
tiem, modicum calorem cum
voluptate. Quoque levis
pruritus, seu titillatio, quæ
habenda est pro voluptate,
pertinet ad hunc sensum,
quamvis sæpe oriatur ab
internis causis.

177. Referimus dolorem
ad hunc sensum, quæ ferè
cæteros sensus molestos, (sci-
licet) anxietatem, pruritem,
&c.; quamvis reverà dolor
possit oriri ab omni vehe-
mentiore sensu.

178. Dolor est ingratus
vehemens, acer sensus,
quem (sensem) referimus
ad certam partem corporis;
quæ (facimus) id minus accu-
ratè, si interna pars dolet;
sed magis accuratè, si super-
ficies corporis afficitur. Ta-
men neque causa doloris
semper hæret in parte do-
lente. (Dolor) nascitur a
magnâ vi illatâ parti sen-
tientis, sive illa vis fuerit
intus sive extrinsecus. Igi-
tur quicquid pungit, secat,
lacerat, distendit, compri-
mit, contundit, percutit,

oriri possunt. Lævorem, molli-
tiem, calorem modicum cum volup-
tate 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, pruritem,
&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 cor-
poris superficies afficitur. Neque
tamen causa doloris semper in
parte dolente hæret. Nascitur a
magna vi parti sentienti illata, sive
intus sive extrinsecus illa vis fu-
erit. Quicquid igitur pungit, se-
cat, lacerat, distendit, comprimit,
contundit, percutit, rodit, urit,

may arise) from touch. We are accustomed to contemplate smoothness, softness, (and) moderate heat, with pleasure. Also, slight itching or titillation, which is to be esteemed a pleasure, appertains to this sensation, although it often arises from internal causes.

177. We refer pain to this sense, and nearly all the troublesome sensations, as anxiety, itching, &c.; although, in truth, pain may arise from every more violent sensation.

178. Pain is an unpleasant, powerful, keen sensation, which we refer to a certain part of the body; and we can do that with less accuracy, if an internal part is in pain; but more accurately, if the surface of the body be affected. The cause of the pain, however, is not always seated in the affected part. It arises from great violence applied to a sentient part, whether that force be from within or without. Therefore whatever pricks, cuts,

vel ullo modo vehementer stimulat aut irritat, dolorem creare potest.

179. Hinc tot morbis frequentissimum, molestissimum 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 salubres sæpe stimulat, fidelis, quamvis ingratus monitor. Hinc inter præsidia vitæ nonnunquam numerandus.

180. Vehementior autem dolor nimiam irritationem facit, inflammationem, ejusque consequentias, febrem, et omnia mala quæ a nimio humorum motu profluunt; totum genus nervosum convellit, et pervigilium, convulsiones, delirium, debilitatem, animi defectionem inducit.

181. Immanem dolorem neque animus neque corpus diu ferre

rodit, urit, vel stimulat aut irritat vehementer ullo modo, potest creare dolorem.

179. Hinc (dolor) jungit se, frequentissimum et molestissimum comitem tot morbis; sæpe intolerabiliorem morbo ipso. Modicus dolor excitat affectam partem, et paulatim totum corpus; facit majorem fluxum sanguinis et vis nervosæ ad partem, et fidelis, quamvis ingratus monitor, sæpe stimulat ad necessarios et salubres motus. Hinc (dolor) est nonnunquam numerandus inter præsidia vitæ.

180. Autem vehementior dolor facit nimiam irritationem, inflammationem, et consequentias ejus, (facit) febrem, et omnia mala quæ profluunt a nimio motu humorum; convellit totum nervosum genus, et inducit pervigilium, convulsiones, delirium, debilitatem (et) defectionem animi.

181. Neque animus neque corpus potest diu ferre immanem dolorem: et pro-

tears, distends, compresses, bruises, strikes, corrodes, burns, or stimulates, or irritates, actively in any way, may produce pain.

179. Hence (pain) unites itself as a very frequent and troublesome attendant upon so many diseases. Moderate pain excites the part affected, and by degrees the whole body; it produces a greater afflux of blood and nervous energy to the part; and (like) a faithful but unpleasant monitor, it stimulates to necessary and healthy motions. Hence it is sometimes to be enumerated amongst the safeguards of life.

180. But more violent pain produces too much irritation, inflammation, and its consequences, (likewise) fever, and all the evils which arise from excessive motion of the fluids; it agitates the whole nervous system, and induces great watchfulness, convulsions, delirium, debility, and syncope.

181. Neither the mind nor body can long endure intense pain; and nature

fectò natura posuit certos fines, ultra quos non permiserit dolorem intendi, quin, aut convulsio, aut defectio animi, vel demum mors ipsa eripiat miserum supplicio.

182. *Diuturnus dolor, quamvis mitior, sæpe inducit debilitatem, torporem, paralytin et rigiditatem affectæ partis.*

183. *Tolcrantia doloris multum pendet a vi animi, quam æger possidet: et, prout ipse tulerit, mala, quæ nascuntur a dolore, erunt graviora vel leviora. Nam onus, quod bene fertur, fit leve, in hoc, uti in aliis exemplis.*

184. *Dolor, si non fuerit nimis vehemens, neque febris aut anxietas comitetur eum, aliquando videtur conferre ad claritatem et acumen ingenii. (Illi) qui laboraverunt podagrâ testantur expertos fuisse hoc.*

185. *Homines ferunt aliquod iudicium, a dolore*

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. Diuturnus dolor, quamvis mitior, sæpe partis affectæ debilitatem, torporem, paralytin 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 erunt. Nam in hoc, uti in aliis exemplis, leve fit quod bene fertur onus.

184. Dolor, si non nimis vehemens fuerit, neque eum 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 iudicium aliquod ferunt

indeed has set certain limits, beyond which she does not allow pain to be extended, but that convulsions, or syncope, or, finally, death itself snatches the victim from its punishment.

182. A long continued pain, although milder, often produces debility, torpor, paralysis, and rigidity, of the affected part.

183. Tolerance of pain depends much upon the strength of mind which the patient possesses; and, according as he bears them, the evils which arise from pain will be more severe or more slight. For the burden which is borne patiently becomes light, in this as in other instances.

184. Pain, if it has not been too violent, nor fever or anxiety attends it, appears sometimes to contribute to the brightness and acumen of the intellect. Those who have suffered from gout, testify that they have experienced this.

185. Men form some judgment, from the pain they feel, of the mode in

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 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.

quem sentiunt, de modo quo causa ejus agit: veluti pungendo, lancinando, lacerando, urendo, &c.: scilicet fingunt quandam convenientiam et similitudinem inter res, quas viderint, vel noverint alio modo, et res magis obscuras.

186. *Anxietas est alius molestus sensus, plane diversa a dolore, obtusior, minus accurate referenda ad singularem partem, et sæpe intolerabilior omni dolore. Probè distinguendum est inter hanc anxietatem de quâ agitur medico sensu, quæ eam, de quâ loquimur communi sermone. Hæc nimirum est a mente, neque pendet a statu corporis: quippe quæ oriatur a metu cujusvis prævisi periculi, vel magni impendentis mali. Autem illa est verè corporea, non secus ac dolor, ducens originem a certo statu corporis. Vero nihil obstat, quo minus utraque adsit simul, vel altera sit causa*

which the cause of it acts; as in pricking, piercing, lacerating, burning, &c.; that is to say, they imagine to themselves a certain correspondence and resemblance between things, which they have seen or known in another way, and things more obscure.

186. Anxiety is another troublesome sensation, quite different from pain; (it is) more obtuse, (and) less accurately to be referred to an individual spot, (and) is often more insupportable than all pain. Indeed, distinction is to be drawn between this anxiety, concerning which it is treated of in a medical sense, and that of which we speak in common discourse. The latter, indeed, is connected with the mind, nor depends upon the state of body; for it may arise from the fear of any foreseen calamity, or a great impending misfortune. But the former is truly corporeal, like pain, deriving its origin from a particular state of the body. There is nothing which prevents their being present at the same time, or the one being the cause of the other. Indeed,

alterius. Reverà ingens corporea anxietas incutiet metum et anxietatem animi firmissimo pectori. Et hæc vicissim, si fuerit gravis et diuturna, viribus corporis fractis, imprimis (illis) quæ efficiunt cursum sanguinis, poterit inducere alteram.

187. *Anxietas, medico sensû, oritur imprimis, a quâcunque causâ turbante vel impediante motum sanguinis, per cor, que magna vasa prope cor que pulmonem. Hinc comitatur multiplicia vitia cordis que vasorum ejus, (scilicet) amplificationem, constrictionem, conversionem in os, polypum, palpitationem, syncope, inflammationem, debilitatem, et ideo nonnullos affectus animi.*

188. *(Anxietas) quoque oritur ab omni difficultate spirandi, qualiscunque fuerit causa ejus: nimirum ab impeditâ exhalatione mephitis e pulmone, et (ab) istâ salutari mutatione sanguinis, quæ (mutatio) fit per spiritum; et forsân (ab)*

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, turbante vel impediante. Hinc vitia cordis ejusque vasorum multiplicia, amplificationem, constrictionem, conversionem in os, polypum, palpitationem, syncope, 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 forsân ipso minus libere

great corporeal anxiety will strike fear and anxiety of mind into the firmest bosom; and this, on the other hand, if it has been acute and long continued, (and) the bodily powers being broken down, especially those which maintain the circulation of the blood, will be enabled to bring on the other.

187. Anxiety, in a medical sense, arises especially from every cause disturbing or impeding the motion of the blood through the heart and the large vessels near the heart and lungs. Hence it accompanies the numerous disorders of the heart and its vessels; such as enlargement, narrowing, ossification, polypus, palpitation, syncope, inflammation, debility, and, consequently, some affections of the mind.

188. It also arises from every difficulty of breathing, whatever may have been the cause: namely, from impeded exhalation of mephitic air from the lungs; from that salutary change of the blood which takes place by breath-

per pulmonem transuente. Hujusmodi anxietas profunde in pectora sentitur.

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 respirationi obest. Hujusmodi anxietas, expulso aëre, multum et subito levare solet, et hoc et aliis pravæ digestionis signis, facile dignosci-

ipso sanguine transuente minus libere per pulmonem. Anxietas hujusmodi sentitur profundè in pectore.

189. (*Anxietas*) quoque dicitur oriri a difficiliore transitu sanguinis per jecur, que (per) cætera viscera abdominis.

190. Quoddam genus anxietatis familiaris et molestissimæ hypochondriacis, oritur a stomacho, et intestinis, vel gravatis multo onere crudi atque corrupti cibi que potus, vel distentis aëre extricato per concoctionem minus sanam. Ventriculus, delicatissimum organum male afficitur tali onere vel distentione. Igitur (est) nil mirum, si dat ingratum sensum, quin et distentio ejus impedit liberum descensum transversi septi, et sic obest respirationi. Anxietas hujusmodi solet levare multum et subito, aëre expulso, et facile dignoscitur ab hoc, et (ab) aliis signis pravæ digestionis.

ing; and, perhaps, from the blood itself circulating less freely through the lungs. Anxiety of this kind is felt deeply in the chest.

189. (Anxiety) is also said to arise from a more difficult circulation of blood through the liver, and other abdominal viscera.

190. A certain kind of anxiety, common and very troublesome to hypochondriacs, arises from the stomach and intestines, either being oppressed with a great accumulation of crude and corrupted food and drink; or from being distended with gas, extricated in consequence of less healthy digestion. The stomach, a most delicate organ, is distressed by such an accumulation or distention. Therefore, it is no wonder if it affords an unpleasant sensation; and besides, its distention impedes the free descent of the diaphragm, and in this way is an obstacle to respiration. Anxiety of this kind is accustomed to be much and suddenly relieved by the expulsion of flatus, and is easily known

Anxietas solet referri in his exemplis ad ventriculum, sed parùm accurate.

191. Quoque anxietas, nunc gravior nunc levior sæpè comitatur febres omnigenas; tum propter generalem debilitatem, tum propter sanguinem pulsum a superficie corporis, que accumulatum magnis vasis, veluti ingruente intermittente febre; tum quoque propter ventriculum male effectum, et gravatum onere crudi aut corrupti cibi, vel distentum et nauseantem multo potù imprimis calido, (vel) medicato. Febre ingravescente, æger angitur magis que magis, insigniter ut medici testantur, mox ante crisin vel nocte quæ præcedit eam (crisin), veluti ante eruptionem super cutem, vel profluvium sanguinis, vel sudorem, vel fluxum alvi, quales aliquando solvunt febres. Quoque æger angitur a repulsâ eruptione, vel salutari translatione.

tur. 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 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 repulsa eruptione, vel translatione salutari.

by this and other symptoms of bad digestion. Anxiety is wont to be referred, in these cases, to the stomach, but with less propriety.

191. Also, greater or less anxiety frequently accompanies all kinds of fevers; both on account of the general debility, and on account of the blood being driven from the surface of the body, and accumulated in the large vessels, as in the commencement of intermittent fever; as well as on account of the stomach being disordered, and oppressed with a load of crude or corrupted food, or distended and nauseated with much drink, especially warm, or medicated. As the fever increases, the patient becomes much more and more anxious, and remarkably (as medical men assert), just before a crisis, or during the night which precedes it; for instance, before an eruption on the skin, or a discharge of blood, or sweat, or diarrhœa, such as sometimes carry off fevers. A patient is also rendered anxious by a repelled eruption, or a salutary metastasis.

192. Quin et febres, et plerosque morbos pariter anxietas comitatur, quum, vita jam deficiente, mors instat, cujus prænuncia 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 mechanica quam chemica, sic pruritus a leviori fit. Titillatio, seu frictio, veluti indusii lanei minus assueto homini, et delicatiore

192. Quin anxietas pariter comitatur et febres, et plerosque morbos, quum, vitâ jam deficiente, mors instat, cujus (mortis, anxietas) est prænuncia et signum. Nimirum fit, quum vitales vires, factæ impares propriis muneribus, nequeunt absolvere circuitum sanguinis. Cætera signa appropinquantis mortis docent satis superque, qualis hæcce anxietas sit.

193. Porro, anxietas potest oriri inter somnum, ab iisdem causis. Hinc dira somnia, quæ sæpe rumpunt somnum subitò et cum terrore.

194. Pruritus, scilicet sensus inquietans, cum cupiditate scalpendi, est sæpe molestissimus, quamvis sit magis affinis voluptati quam dolori.

195. Ut dolor fit a gravi irritatione, tam mechanicâ, tam chemicâ, sic pruritus (fit) a leviori. Titillatio seu frictio, veluti lanei indusii, excitat pruritum ho-

192. Moreover, anxiety equally accompanies fevers and most diseases, when, life failing, death is at hand, of which it is a forerunner and indication. For it comes on, when the vital powers, rendered incompetent to their proper functions, are unable to carry on the circulation of the blood. The other symptoms of approaching death show sufficiently, and more than sufficiently, what kind of anxiety this is.

193. Moreover, anxiety may arise during sleep, from the same causes. Hence, frightful dreams, which often break the slumbers suddenly, and with terror.

194. Itching, that is, a teasing sensation, with a desire of scratching, is frequently very troublesome, although it is more allied to pleasure than to pain.

195. As pain is produced by great irritation, as well mechanical as chemical, so itching (is produced by irritation) of a slighter kind. The tickling or friction, as of a flannel shirt, excites itching in a person unaccustomed to it,

mini minus assueto, et prædito delicatiore cute : et multa acria derivata ex animalibus, (ex) herbis, aut (ex) rebus fossilibus. Sic pruritus est primus sensus a cantharidibus admotis cuti, quamvis idem auctus fiat dolor.

196. *Quædam acria delata in cutem, veluti in febribus, quas (febres) eruptio super cutem comitatur, aut morbo regio, aut demum varii morbi ipsius, (i. e. cutis) scabies (vel) lepra, edunt eundem effectum.*

197. *Pediculi, vermes imprimis ascarides, irritantes, vel cutem vel intestina, excitant molestum pruritus.*

198. *Quædam species interni pruritûs impellit homines ad multas et necessarias actiones, tam sani quam morborum corporis; (scilicet), excretionem urinæ et alvi, tussim, sternutationem, et similia.*

cute prædito, pruritus excitat; et multa acria ex animalibus, 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 febribus 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 pruritûs interni, homines ad multas et necessarias, tam sani quam morborum corporis, actiones impellit; urinæ et alvi excretionem, tussim, sternutationem, et similia.

and endowed with a more delicate skin: likewise many acrid substances obtained from animals, herbs, or fossils. Thus itching is the first sensation from cantharides, applied to the skin, although the same when increased may become pain.

196. Certain acrid substances conveyed to the skin, as in fevers, which an eruption upon the skin accompanies, or in jaundice or, lastly, different diseases of (the skin) itself, as itch, or lepra, produce the same effect.

197. Lice, worms, and especially ascarides, irritating either the skin or intestines, excite troublesome itching.

198. A certain kind of internal itching urges men to many and necessary actions, both of the healthy and of the sickly body, for instance, the excretion of urine and fæces, coughing, sneezing, and the like.

CAP. VI.—*De Gustu, ejusque usibus, varietatibus, et vitiis.*

199. Hujus organum princeps est lingua: eaque quo proprior apici, eo acutiorem; quo proprior gutturi, eo obtusio-rem sensum habet; quamvis revera acria nonnulla, circa apicem vix gustata, prope radicem linguæ, vel in ipso gutture, 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 linguæ admotum involucra ejus

CAP. VI.—*De Gustu, de usibus, varietatibus, (de) vitiis ejus.*

199. Lingua est princeps organum hujus: quæ ea habet sensum eo acutiorem, quo est proprior apici, (sed) (habet sensum) eo obtusio-rem, quo proprior gutturi: quamvis revera, nonnulla, acria vix gustata circa apicem, excitent acerrimum sensum prope radicem linguæ, vel in gutture ipso.

200. Lingua instruitur insignibus et pulcherrimis nervosis papillis, quæ videntur esse proxima sedes gustus. Hæ elevantur et eriguntur inter gustandum, quo habeant acutiorem sensum.

201. Possumus gustare nihil, nisi quod sit solubile in salivâ, quæ est fere aqua, ut admotum linguæ fluidâ forma, pervadat involucra

CHAP. VI.—*On Taste, its uses, varieties, and disorders.*

199. The tongue is the principal organ of this (sense); and has more acute sensibility the nearer it is to the tip, more obtuse sensibility the nearer it is to the throat: although, in truth, some acrid substances, (which are) scarcely tasted at the tip, excite a sharp sensation near the root of the tongue, or in the throat itself.

200. The tongue is supplied with remarkable and very beautiful nervous papillæ, which appear to be the proximate seat of taste; these are elevated and erected during taste, in order that they may have more acute sensibility.

201. We can taste nothing but what is soluble in saliva, which is almost water; so that (when) applied to the tongue in the fluid state, it may pervade

ejus, que afficiat nervosam pulpam. Hinc insolubiles terræ sunt nullius saporis.

202. *Neque est sat corpus esse solubile, ut gustemus id. Oportet, (ut) habeat nonnihil salis, vel saltem acrimoniæ in se, quod stimulet nervosam substantiam. Igitur quicquid est minus salsum aut acre quam ipsa saliva, habet nullum saporem.*

203. *Varia genera saporum facillè distinguuntur, et ideò nacta sunt sibimet nomina peculiariora etiam in communi sermone: veluti, sapor acidus, dulcis, amarus, salsus, acer, aromaticus, (vel) putridus: vero hic quoque jungitur cum odore. Sunt varii gradus omnium saporum, que omnes possunt conjungi variè inter se.*

204. *Alii saporis sunt suavissimi et gratissimi: alii (sunt) ingrati, que vix tolerandi. Tamen (est) mira diversitas hominum de*

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 ipsa saliva minus salsum aut acre est, nullum habet saporem.

203. Saporum varia genera facile distinguuntur, et ideo nomina peculiariora etiam in communi sermone sibimet 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. Sapoires alii suavissimi et gratissimi sunt; alii ingrati, vixque tolerandi. Mira tamen de hac re hominum diversitas: ita ut

its coverings, and affect the nervous pulp. Hence, insoluble earths are devoid of taste.

202. Nor is it sufficient that a body be soluble, that we may taste it: it is necessary that it contains some saltiness, or at least some acrimony within it, which may stimulate the nervous substance. Therefore, whatever is less salt or acrid than the saliva itself, has no taste.

203. Different kinds of tastes are easily distinguished, and therefore have obtained to themselves appropriate names, even in common discourse; as, an acid, sweet, bitter, salt, acrid, aromatic, or putrid taste: but this last is also combined with smell. There are different degrees of all the tastes, and they may all be variously combined together.

204. Some tastes are very sweet and agreeable; others are unpleasant and scarcely to be endured. But there is much diversity amongst men in this

quod aliis maximæ voluptati est, alii non sine nausea et horrore respuant.

205. Quin et suavissimos sapores, qui magnam primo voluptatem dederant, homines brevi fastidire solent; dum pessimos et ingratisissimos, quales sunt nicotianæ tabaci, ferulæ assæfœtidæ, et similibus, consuetudine amare discunt et appetere.

206. Usus gustus præcipuus videtur esse, ad cibum bonum et salubrem invitare, a noxio 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

hæc re: ita ut quod est maximæ voluptati aliis, alii respuant non sine nausea et horrore.

205. *Quin homines solent brevè fastidire et suavissimos sapores, qui primo dederant magnam voluptatem: dum consuetudine (homines) discunt amare et appetere pessimos et ingratisissimos (sapores), quales sunt (sapores) nicotianæ tabaci, ferulæ assæfœtidæ, et similibus.*

206. *Præcipuus usus gustûs videtur esse, invitare ad bonum et salubrem cibum, (et) divertere a noxio aut minus idoneo (cibo). Plerique et optimi cibi sunt grati gustui. Vero (cibi) qui sunt mali saporis incorrupto gustui, ii ferè nocent. Bruta animalia perducuntur ad idoneum, cibum, et arcentur a noxio instinctû hujusmodi, raro fallace, quem olfactus quoque juvat.*

207. *Vero hic instinctus, non secus ac reliqui (instinctus) datur minus per-*

respect; so much so, that what is the greatest pleasure to some, others reject not without loathing and horror.

205. Moreover, persons are accustomed in a short time to dislike even the sweetest tastes, which at first had afforded much pleasure; whilst (on the contrary) by habit, they learn to like and long for the worst and most disagreeable tastes; such as of tobacco, assafœtida, and the like.

206. The principal use of taste appears to be, to invite to good and wholesome food, (and) to divert from what is noxious or less proper. Most, and the best kinds of food, are pleasant to the taste; but those which are of a bad taste, to an uncorrupted palate, are generally injurious. The brute creation are directed to proper food, and are kept from what is noxious, by instinct of this kind, seldom deceptive, and which the smell also assists.

207. This kind of instinct, like the rest, is given less perfect to man than to brutes; for he being endowed with other faculties, has less need of

fectus homini quam belluis: quippe qui præditus aliis facultatibus, minus egeat tali auxilio. Verò ipse instinctus qui datur, sæpe corrumpitur parum naturali genere vitæ.

208. Porro alma Parens rerum statuit, ut (hæc) actio adeo necessaria ad alendam vitam, et quodammodo voluntaria suâ naturâ, non careret aliquâ voluptate. Allicimur ad sumendum et conficiendum cibum, grato sapore cibi, tanquam præmio. Reverà ista voluptas multum pendet a statu ventriculi, et a necessitate sumendi novi cibi. Enim vilissimus cibus et fere insulsus, est gratissimus homini esurienti, vero crearet fastidium saturi. Porro, inter mandendum, copiosior saliva fluit, quo gustus evadat accuratior, et sapor cibi gratior. Etiam saliva fluit esurienti ad conspectum, vel etiam ad imaginem aut recordationem grati cibi, quem appetit.

qui tali auxilio minus egeat, aliis facultatibus præditus. Ipse vero qui datur instinctus, vitæ genere parum naturali sæpe corrumpitur.

208. Statuit porro alma rerum Parens, ut 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.

such assistance; but the instinct which is supplied, is generally vitiated by an unnatural mode of life.

208. The kind parent of nature has ordained, that an action, so necessary to support life, and in its nature in some degree voluntary, might not be devoid of some pleasure. We are allured to take and prepare food, by its agreeable taste, as if by remuneration. Still that pleasure much depends upon the state of the stomach, and the necessity of taking fresh food: for the most common food, and what is almost tasteless, is most acceptable to a hungry man, but would create disgust in one that is satisfied. Moreover, during mastication, there is a more copious flow of saliva, in order that the taste may be more accurate, and the savour more agreeable. The saliva flows at sight only, in a hungry man, or (even) at the idea or recollection of the pleasant food which he longs for.

209. Gustus raro nimis acutus observatur, nisi a vitio cuticulæ, quæ linguam tegit. Hæc, si sublata fuerit, aut vulnerata, aut ulceribus, aphthis, similibusque malis, obsessa, tum gustu nimis acri facto, sapores non sine dolore percipiuntur; vel aliquando sapor nullus distinguitur, solus dolor sentitur.

210. Deficit, non secus ac tactus, a cerebri variis ipsius nervorumque vitiis. 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 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 fædo muco obductam.

209. *Gustus raro observatur nimis acutus, nisi a vitio cuticulæ, quæ tegit linguam. Si hæc fuerit sublata, aut, vulnerata, aut obsessa ulceribus, aphthis, quæ similibus malis, tum gustu facto nimis acri, sapores non percipiuntur sine dolore; vel aliquando nullus sapor distinguitur, (et) dolor solus sentitur.*

210. *(Gustus) deficit, non secus ac tactus a variis vitiis cerebri, quæ nervorum ipsius. Vero exempla hujusmodi sunt rara. (Gustus) datur admodum obtusus nonnullis hominibus. Hi quoque solent habere parum olfactus. Sæpissime deficit propter defectum salivæ: nam sicca lingua nequit gustare. Hinc obtusus est in multis morbis, imprimis febribus, gravedine, &c. tum ob defectum salivæ tum quoque ob (defectum) appetitus, qui adeo juvat in sano homine: vel propter linguam obductam tenace et fædo muco.*

209. Taste is seldom observed too acute, unless from disorder of the cuticle which covers the tongue. If this has been raised, or wounded, or covered with ulcers, aphthæ, and similar diseases, then taste having become too acute, the savours are perceived, not without pain; or sometimes no taste is distinguished, (but) pain alone is felt.

210. Like touch, it is defective from various disorders of the brain and its nerves; but instances of this kind are very rare. It is given very obtuse to some men. Those persons likewise are accustomed to possess little smell. It is most frequently defective on account of a want of saliva; for a dry tongue is unable to taste. Hence, it is obtuse in many diseases; particularly in fevers, catarrh, &c., both on account of a want of saliva, as well as on account of loss of appetite, which is so useful in a healthy person; or on account of the tongue itself being covered with thick and filthy mucus.

211. *Sæpe gustus depravatur. Scilicet vel gustamus, omnino nihil admoto linguæ: vel siquid admotum fuerit ei, percipimus saporem alienum a vero et solito. Hoc plerumque fit, a vitio salivæ, quæ ipsa (saliva) gustatur. Hoc modo dulcis, salsus, acer, amarus, putridus, rancidus, sapor, potest percipi, prout saliva fuerit corrupta, vel a statu generalis massæ humorum, vel organorum quæ secernunt ipsam, vel ipsius oris vel, ventriculi, unde vapor et ructus surgunt ad os, præsertim si habet se male.*

212. *Verò præter vitia salivæ, gustus vitatur ab aliis causis, veluti conditione nervosarum papillarum: cujus verò parum est notum hactenus. Nam nonnunquam gustus planè alienatur quamvis ipsa saliva sit nullius saporis aliis hominibus.*

213. *Medici solent multum nec immeritò attendere ad conditionem linguæ in*

211. *Depravatur sæpe gustus. Scilicet, vel gustamus, nihil omnino linguæ admoto; vel, si quid eiad motum 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 vitatur, veluti papillarum nervosarum conditione; cujus 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, præ-*

211. The taste is often depraved; that is to say, we either have taste, no substance at all being applied to the tongue; or if something be applied, we perceive a taste different from what is proper and usual. This generally occurs from disorder of the saliva, which itself is tasted: in this way, a sweet, salt, acrid, bitter, putrid, or rancid taste, may be perceived, according as the saliva has been corrupted by the condition of the general mass of the fluids or organs which secrete it, or of the mouth itself, or of the stomach, whence gas and eructations rise to the mouth, particularly if it be disordered.

212. But, besides the disorders of the saliva, the taste is vitiated from other causes: as by the state of the nervous papillæ; of which, however, little is hitherto known: for sometimes the taste is evidently altered in some persons, although the saliva itself is of no taste to other persons.

213. Medical men are accustomed to attend (much) and not improperly,

sertim 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 de natura, et augmento, vel remissione febris, ab inspecta lingua, medici judicium aliquod deducere conantur.

omnibus morbis, præsertim febribus. Nam possunt judicare ex eâ, de statu ventriculi, de siti vel potius de necessitate sumendi potûs, cum æger propter delirium, stuporem, &c. neque sentit sitim, neque potest conqueri de eâ: et demum medici conantur deducere aliquod judicium ab linguâ inspectâ, de naturâ, et augmento, vel (de) remissione febris.

to the state of the tongue, in all diseases, particularly in fevers; for they are enabled to judge from it, of the state of the stomach; of the thirst, or rather of the necessity of taking drink, at a time that a patient on account of delirium, stupor, &c., is neither sensible of thirst, nor able to complain of it; and, lastly, medical men endeavour to deduce some judgment from inspection of the tongue concerning the nature, and increase, or remission, of fever.

CAP. VII.—*De Olfactû—*
que de usibus, varietatibus,
et de vitiis ejus; nec non
de naturâ Odorum, que
(de) effectibus eorum, in
humano corpore.

214. *Sedes hujus sensûs*
est in illa mollissimâ et deli-
catissimâ membranâ, refer-
tâ nervorum et vasorum ve-
hementium sanguinem, quæ
obducitur naribus internis,
que variis sinibus, et antris,
quibus est iter ex iis (i. e.
internis naribus). Sensus
(est) acutior circa medium
septum, que ossa spongiosa,
quibus crassior et mollior
membrana datur, quam in
profundioribus antris, ubi
membrana est tenuior, mi-
nus nervosa, et minus refer-
ta vasis: quamvis hæ partes
quoque, non omnino careant
olfactû.

215. *Ut judicamus de so-*
lubilibus partibus corporum
gustû, sic (judicamus) de
volatilibus partibus quæ

CAP. VII.—*De Olfactu; ejusque*
usibus, varietatibus et vitiis:
nec non de natura Odorum, eo-
rumque effectibus in corpore hu-
mano.

214. *Hujus sensus sedes est in*
membrana illa mollissima, delica-
tissima, nervorum et vasorum san-
guinem vehentium referta, quæ
naribus internis, variisque sinibus
et antris, quibus iter ex iis est ob-
ducitur. Acutior sensus circa me-
dium septum, ossaque spongiosa,
quibus membrana crassior, et mol-
lior datur, quam in antris profun-
dioribus, ubi membrana tenuior,
minus nervosa, et vasis minus re-
ferta est: quamvis hæ quoque, ut
videtur, partes olfactu non omnino
careant.

215. *Ut gustu de partibus cor-*
porum solubilibus, sic olfactu de
partibus volatilibus, quæ subtilis-

CHAP. VII.—*On Smelling, its uses, varieties, and disorders: also on the*
nature of Odours, and the effects of them on the human body.

214. The seat of this sense is, in that very soft and very delicate membrane, supplied with nerves and vessels carrying blood, which is spread over the internal nares, and the various sinuses and cavities to which there is a passage from them. The sense is more acute about the central septum and spongy bones, to which a thicker and softer membrane is given, than in the deeper cavities; where the membrane is thinner, less nervous and less supplied with blood-vessels; although these parts, likewise, are not entirely devoid of the power of smelling.

215. As we judge of the soluble particles of bodies, by the taste, (we judge) by the smelling of the volatile particles which, in a very fine state, float in the

simæ per aëra volitant, judicamus. Ut accurate olfaciat aliquis, apertis quantum possit naribus, clausoque ore, aëra fortiter inhalat, quo plures particulæ volatiles, majoreque vi, olfactus organo admoveantur.

216. Organum quoque olfactus, non secus ac organum gustus, quo acutiorem sensum habeat, madidum servatur; partim proprio mucus, partim lachrymis quæ ex oculis assidue destillant.

217. Ut gustus cibi itineri, sic olfactus ostio viarum, quas aër subire debet, custos præponitur, moniturus ne quid noxii, via 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 exci-

subtilissimæ volitant per aëra, olfactû. Ut aliquis olfaciat accuratè, inhalat aëra fortiter, naribus apertis quantum possit, quæ ore clauso, quo plures volatiles particulæ, quæ majore vi, admoveantur organo olfactûs.

216. Quoque organum olfactûs, non secus ac organum gustûs, servatur madidum, quo habeat auctiorem sensum; partim proprio mucus, partim lachrymis, quæ assidue destillant ex oculis.

217. Ut gustus præponitur (ut) custos itineri cibi, sic olfactus (præponitur custos) ostio viarum, quas (vias) aër debet subire, moniturus ne quid noxii admittatur in corpus, viâ quæ semper patet. Porro, ut gustus, hic sensus quoque invitat ad salutarem cibum, (et) deterret a (cibo) noxio, aut corrupto, imprimis putrido, aut rancido.

218. Quin et quidam odores pollent insigni vi in nervoso genere, et nonnunquam edunt mirandos effectus. Alii (odores) excitant gratè,

air. In order that one may smell accurately, he inhales the air forcibly, with the nostrils opened as wide as possible, and with the mouth closed; so that most of the volatile particles may be applied, with greater force, to the organ of smelling.

216. The organ of smelling, also, like the organ of taste, is kept in a moist state, that it may possess more acute sensibility; partly by its own mucus, and partly by the tears, which are constantly flowing down from the eyes.

217. As taste is placed as a guardian to the passage of the food, so smelling (performs the same duty) to the opening of the passages which the air ought to enter; about to warn lest any thing noxious be admitted into the body by that passage, which is always open. Moreover, like taste, this sense also invites us to wholesome food, and keeps us from that which is hurtful, or corrupted, particularly the putrid and rancid.

218. Some odours are endowed with remarkable influence over the nervous

et statim reficiant hominem fere deficientem animo: alii (odores) faciunt hominem linqui animo, et aliquando, ut fertur, planè extinguunt (illum.) Quoque (illa) quæ vocantur antipathiæ pertinent huc, profectò ridiculæ, sed sæpè debellandæ nullâ vi animi.

219. *Interdum olfactus fit nimis acutus, tum propter quædam vitia ipsius organi, quod observatur rariùs, tum quoque propter nimis sentiens universum nervosum genus: ut aliquando observatur in quibusdam febribus, in phrenitide, (et) in hysteriâ.*

220. *(Olfactus) sæpiùs obtunditur, aut a vitiis cerebri quæ nervorum, veluti (illis) provenientibus a vi illatâ capiti, vel ab internâ causâ: aut a vitio organi ipsius, aridi propter solitos humores suppressos, vel versos aliò, vel obruti nimia copiâ muci quæ lachrymarum. Est exemplum utriusque in gravedine, ubi initio morbi nares arescunt, verò postea vel inundantur multo*

tant, et animo fere deficientem statim recreant: alii animo linqui faciunt, et aliquando, ut fertur, hominem plane extinguunt. Huc quoque pertinent quæ vocantur antipathiæ, ridiculæ profecto, sed sæpe nulla vi animi debellandæ.

219. Olfactus interdum nimis acutus fit, tum propter vitia quædam organi ipsius, quod rarius observatur, tum quoque propter universum genus nervosum nimis sentiens; ut in febribus quibusdam, in phrenitide, in hysteria, aliquando observatur.

220. Obtunditur sæpius, aut a vitiis cerebri nervorumque, veluti a vi capiti illata, vel a causa interna, provenientibus; aut a vitio ipsius organi, aridi, propter solitos humores suppressos, vel alio versos, vel nimia muci lachrymarumque copia obruti. Utriusque exemplum est in gravedine, ubi initio morbi nares arescunt, postea vero vel multo humore inundan-

system, and sometimes produce surprising effects: some excite agreeably, and immediately restore a person, when approaching to syncope; others bring on fainting, and sometimes (as it is reported) completely deprive of life: what are called antipathies likewise may be referred to this place, truly ridiculous, but frequently to be subdued by no power of the mind.

219. Smelling becomes sometimes too acute, both on account of disorders of the organ itself, which is seldom observed, as well as on account of a too sentient nervous system in general, as is sometimes observed in certain fevers, in phrenitis, and in hysteria.

220. Smelling is more frequently blunted, either from diseases of the brain and nerves, as those proceeding from force applied to the head, or from an internal cause; or from disorder of the organ itself, dry on account of the usual fluids suppressed, or being directed elsewhere, or overwhelmed with an excess of mucus or tears. There is an instance of both (disorders) in catarrh,

tur, vel spissiore muco obstruuntur. 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, vitientur. Porro, quicquid liberum aëris in nares introitum, aut ipsius per eas transitum impedit, olfactui non obesse non potest.

221. Depravatur nonnunquam 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, nonnunquam efficiunt. Multa quoque vitia narium partiumque quibus ad eas iter patet ulcera, caries, cancer, corruptio quævis oris, dentium, gutturis, pulmonis, prava etiam in ventri-

humore, vel obstruuntur spissiore muco. Sed, in his que in bene multis aliis exemplis, ipsa membrana nasi, afficitur inflammatione, relaxatione, vel nimia tensione, qua non potest fieri, quin nervi vitientur, qui efficiunt magnam partem ejus. Porro, quicquid impedit liberum introitum aëris in nares, aut transitum ipsius (aëris) per eas (nares,) non potest non obesse olfactui.

221. Nonnunquam olfactus depravatur, et odores percipiuntur, ubi fuit nihil odorati, vel odores rerum, alieni a veris et solitis (odoribus) percipiuntur. Odoratæ particulæ, post longam moram in antris, demum erumpentes, et denuo afficientes organum, nonnunquam efficiunt depravationem hujusmodi, etiam in sanissimo homine. Quoque multa vitia narium, que partium quibus iter patet ad eas, scilicet, ulcera, caries, cancer, quævis corruptio oris, dentium, gutturis, pulmonis, etiam prava concoc-

when the nostrils are dry in the beginning of the disease, but are afterwards inundated with much fluid, or obstructed by a thicker mucus. In this, as in many other cases, the membrane of the nose itself is attacked by inflammation, relaxation, or excessive tension; by which it cannot be, but that the nerves are disordered, which form a considerable portion of it. Besides, whatever impedes the free entrance of air into the nostrils, or its egress through them, cannot fail to be an obstacle to smelling.

221. Smelling is sometimes depraved, and odours are perceived, when there is no odorous body, or odours of things unlike the real and true ones, are perceived. Odorous particles after long detention in the cavities, emerging at length, and again affecting the organ, sometimes produce a depravation of this kind, even in a perfectly healthy man. Likewise, many diseases of the nostrils and of the parts, from which a passage is open to them; such as ulcers, caries, cancer, any corruption of the mouth, teeth, throat, or lungs;

tio in ventriculo, exhalando fœtidum vaporem, possunt corrumpere olfactum. Fortasse interdum depravatur, a vitiis cerebri, que nervorum, ratio quorum est magis obscura.

culo concoctio, vaporem fœtidum, exhalando, olfactum corrumpere possunt. Depravatur interdum fortasse a vitiis cerebri nervorum-que quorum ratio magis obscura est.

CAP. VIII.—*De Auditû, (de) Sonis, et (de) Vitiis Auditûs.*

CAP. VIII.—*De Auditû, Sonis, et Vitiis Auditus.*

222. *Hic sensus excitatur tremoribus aëris, quos (tremores) sonantia corpora faciunt. Cartilaginosa externa auris, et uterque meatus auris colligunt hos (tremores,) deferunt (illos) ad tympanum, et simul intendunt quo feriant membranam tympani majore vi. Hæc membrana ipsa commota et tremens, commovet*

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*

also bad digestion in the stomach, by exhaling a fetid vapour, may vitiate the sense of smelling. It is possibly sometimes disordered by diseases of the brain and nerves; the reason of which is more obscure.

CHAP. VIII.—*On Hearing, Sounds, and the Disorders of Hearing.*

222. This sense is excited by the tremors of the air, which sonorous bodies occasion. The cartilaginous external ear, and each meatus, collect these (tremors), carry them to the tympanum, and at the same time stretch it, that they may strike the tympanum with greater impetus. This membrane, itself agitated and tremulous, moves the malleus annexed to it, and makes

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 musculi, ita trahitur, ut pars posterior ejus baseos in fenestram ovalem, ipsumque vestibulum, impellatur. Porro, tremores membranæ 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

malleum annexum sibi, et facit ferire incudem junctam sibi: propriis musculis mallei simul juvantibus. Verò incus impertit suum motum ossi orbiculari et stapedi, qui iterum trahitur, tum hoc motu, tum quoque actione sui musculi, ita, ut pars posterior baseos ejus impellatur in ovalem fenestram, que (in) vestibulum ipsum. Porro, tremores membranæ tympani, simul communicantur cum aëre delato per Eustachianam tubam in tympanum: qui aër demum ferit membranam fenestræ rotundæ, quâ pervenitur in labyrinthum, seu intimam aurem. Igitur tremores perveniunt, duplice modo ut videtur, ad labyrinthum, qui totus obductus mollissimâ et admodum sentiente nervosâ membranâ, et plenus, pellucidâ aquulâ, subrubrâ, aptissimâ ad suscipiendos, et propagandos omnes tremores, est ultimum organum auditûs.

223. *Neque sanè quicquam est notum certâ fide, de actionibus singularum*

it strike the incus, which is articulated with it; the proper muscles of the malleus at the same time assisting. But the incus imparts its motion to the orbicularis and stapes, which again is drawn in such a direction, both by this motion, as well as by the action of its own muscle, that the posterior portion of its base is forced into the fenestra ovalis, and the vestibule itself. Moreover, the tremors of the membrane of the tympanum, communicate, at the same time, with the air conveyed by the Eustachian tube to the tympanum, which (air) at last strikes the membrane of the fenestra rotunda, by which it is conveyed to the labyrinth, or internal ear. Therefore tremors, as it appears, arrive in two ways to the labyrinth, which being entirely lined with a very soft and very sensitive nervous membrane, and filled with a pellucid, reddish fluid, best adapted to receive and propagate all tremors, is the ultimate organ of hearing.

223. Nor indeed is anything known for certain of the actions of the separate

partium internæ auris, præterquam ossicula ipsa esse aptissima ad suscipiendos, et reddendos vel propagandos tremores, et idè conferre ad auditum: ita ut soni perveniant per dentes et maxillam, et petrosum os ad ultimam nervosam partem organi, et sic homo ferè surdus, neque audiens per aëra, quodammodo fruatur musicâ. Potius est confitendum, hic multum obscuri subesse, et actionem et usus multarum partium, quæ sunt in aure, adhuc parùm intelligi.

224. *Soni sunt fortes vel debiles, graves vel acuti. Magnitudo vel claritas soni pendet a vi seu magnitudine tremorum, quos sonans corpus impertit aëri; gravitas (pendet) a numero tremorum, qui absolvuntur dato tempore. Tamen sunt certi fines, citra et ultra quos, sonus est vel nullus vel acerrimus, et ingratissimus auri, que vix tolerabilis.*

partium actionibus notum 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 sonans 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 ingratissimus, vixque tolerabilis.

parts of the internal ear, beyond that the little bones are best adapted for receiving, and returning or propagating tremors, and on that account contribute to hearing; so that sounds may arrive by means of the teeth, maxilla and petrous bone, to the ultimate nervous part of the organ; and thus a man who is nearly deaf, and not hearing through the medium of the air, may enjoy music to some extent. We must confess that here there is much obscurity, and that the action and uses of many parts which are in the ear, are still little understood.

224. Sounds are strong or weak, deep or acute: the extent or clearness of the sound depends upon the force or extent of the tremors, which a sounding body imparts to the air; their depth depends upon the number of tremors which are produced in a given time. Nevertheless, there are certain sounds within and beyond which, sound is lost or very shrill, most unpleasant to the ear, and scarcely supportable.

225. Porro, vis soni intenditur percussu multorum corporum, quæ tremores a tremente aëre suscipiunt et reddunt. Soni itaque reflexi, quotquot cum primario concordant, uno cum eo aures feriunt, eumque fortiores 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 levissimæ 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 hominum ex hoc inexhausto fonte puras et suavissimas voluptates hauriunt. Auris vero, quæ vocatur musica, non omnibus datur; cujus rei ratio hactenus latet. Nullo modo pendet ab acutiore

225. Porro vis soni intenditur percussu multorum corporum, quæ suscipiunt et reddunt tremores, a tremente aëre. Itaque reflexi soni, quotquot concordant cum primario (sono), feriunt aures unâ cum eo, quæ faciunt eum fortiores: hinc vox est debilior sub pleno Jove, quam in cubiculo. Quod si, reflexi soni perveniunt ad aures, post certo intervallo, audiuntur distincti a primario (sono), et sic echo fit.

226. Est immensa varietas sonorum; quippe quorum, vel levissimæ mutationes et conjunctiones percipiuntur ab acutâ, et doctâ aure. Quoque vis eorum est insignis, in animum hominis, et ideo in corpus. (Illi soni) inspirant varios affectus animi, imprimis tristes et lætos; quæ multi hominum hauriunt puras et suavissimas voluptates ex hoc inexhausto fonte. Vero auris, quæ vocatur musica, non datur omnibus: ratio cujus rei adhuc latet. Pendet nullo modo ab acutiore

225. Moreover, the strength of a sound is increased by percussion of many bodies, which receive and return the tremors, from the tremulous air. Therefore, reflected sounds, as many as agree with the primary one, strike the ear simultaneously, and render it stronger; hence the voice is weaker under the open air than in a room. But if the reflected sounds reach the ear after a certain interval, they are heard distinct from the primary one, and thus echo is produced.

226. There is an immense variety of sounds, as the slightest changes and combinations of which may be perceived by an acute and tutored ear. Also, their influence is remarkable upon the mind of man, and consequently upon the body: they inspire different mental affections, especially the sad and cheerful; and many men derive pure and the sweetest pleasures from this inexhaustible source. An ear, which is called musical, is not supplied to all persons, and the reason of which is rather obscure.—It does not depend

vel obtusiore auditu. Semi-surdi sunt nonnunquam satis periti musica et amantissimi, quâ (musicâ illi), bene audientes sæpè parum fruuntur; et vir, auditu manente integro, amisit subito et sine notâ causâ, suam musicam aurem, quam habebat eximiam. Neque est ulla ratio cur imputemus talem defectum inæquali auditui per binas aures. Ipsa facultas est donum naturæ, acquirenda nullo studio: verò acuitur, et roboratur in mirum modum cultu et usu, non secus ac reliquæ facultates hominis.

227. *Auditus vitiatur ferè sæpissimè omnium sensuum; quod profectò (est) nil mirum; scilicet, quia habet organum delicatissimum, et compositum ex plurimis et valde minutis partibus.*

228. *Auditus fit sæpe acutior justo, vel a nimis irritabili generali habitu corporis, qualem hystericæ aut puerperæ feminae sæpe habent; vel a cerebro ipso*

vel obtusiore auditu. Semi-surdi nonnunquam musica satis periti sunt et amantissimi, qua bene audientes parum sæpe fruuntur: et vir, auditu integro manente, aurem 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 vitiatur; 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

in any degree upon more acute or obtuse hearing. Persons nearly deaf are sometimes very skilful in, and very fond of music, which persons whose hearing is good, often enjoy in a very slight degree; and a person, with his hearing still perfect, has lost suddenly, without any assignable cause, his musical ear, which he possessed in an exquisite degree. Nor is there any reason why we should impute such a defect to unequal hearing by the two ears.—The faculty itself is a gift of nature, to be acquired by no kind of study; but (which) is rendered acute, and strengthened to a wonderful extent, by cultivation and use, like the other faculties of man.

227. Hearing is nearly the most frequently disordered of all the senses; which indeed is by no means surprising, for the reason that it has a very delicate organ, composed of numerous and very minute parts.

228. Hearing becomes more acute than is proper, either from a too irritable general habit of body, such as hysterical or puerperal females possess;

sentiente, quod in febris haud raro observatur; tum quoque in phrenitide, et aliquando, licet rarius, in vera insania; 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 gradu 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, 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

nimis sentiente, quod haud raro observatur in febris; tum quoque in phrenitide, et aliquando, licet rarius, in verâ insaniâ; vel ab ipsâ aure male habente se, et affectâ inflammatione, dolore, (et) nimîâ tensione.

229. *Hinc sensus obtunditur vel planè aboletur, ita ut æger vel audiat graviter, vel fiat omnino surdus, fere similibus causis, vel diversis tantum gradu seu magnitudine; et imprimis, a defectu externæ auriculæ, aut vel altero vel utroque meatu, obstructo, muco, cerumine, pure, (vel) externis rebus; que concretionem ejus, qualis est observata post suppurationem, nonnunquam post variolam; vel propter membranam tympani factam rigidam, aut relaxatam, aut erosam, aut ruptam; vel (propter) ipsum tympanum vel Eustachianam tubam obstructam aliquo modo; vel propter aliquem ossiculorum aut membranarum, aut*

or from the brain itself being too sensitive, which is often observed in fevers; likewise in phrenitis, and sometimes, though not so frequently, in real insanity; or from the ear itself being disordered, and affected with inflammation, pain, and too much tension.

229. This sense is rendered obtuse, or is completely destroyed, so that a patient is either hard of hearing, or becomes quite deaf, almost from similar causes, or causes differing only in degree or magnitude; (such as) particularly, from a defect of the external ear, or from one or both of the auditory passages being obstructed by mucus, wax, pus, or extraneous bodies; also by its concretion, such as is observed after suppuration, sometimes after small-pox; or on account of the membrane of the tympanum being made rigid or relaxed, or eroded, or ruptured; or on account of the tympanum itself, or Eustachian tube, being obstructed in any other manner; or on account of some one of the little bones, or membranes, or muscles of the labyrinth

musculorum ipsius labyrinthi, affectum concretione, spasm, paralyti, (aut) torpore; et denique propter varia vitia cerebri que nervorum, fabricâ organi ipsius omnino salvâ. Hinc surditas (est) sæpe morbus nervosi generis, subito invadens, et decedens sponte. Hinc quoque (surditas est) familiaris senibus, quibus omnes solidæ partes rigent, (et) omnes nervosæ (partes) sentiunt minùs.

230. (*Homines*) laborantes febre, imprimis illo genere febris, quod (*genus*, insignis debilitas et stupor solent comitari, sæpe fiunt surdi; quod forsitan erit aliquando malum signum, accedens cum aliis signis valdè oppressi cerebri, que exhaustarum virium ægri. Verò plerumque est optimi ominis, quamvis etiam aliquis sopor comitetur. Ratio hujus rei est satis obscura; neque fortasse (est) alia (ratio), quàm quod talis surditas pendeat a statu cerebri certè morbido, sed vix periculoso suâ naturâ;

musculorum aliquem labyrinthi ipsius, concretione, spasm, paralyti, torpore, affectum; et denique propter varia cerebri nervorumve 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 morbido certe, sed sua natura vix periculo-

being affected by concretion, spasm, paralysis, or torpor; and, lastly, on account of various disorders of the brain itself and nerves, the structure of the organ itself being perfectly sound. Hence deafness is frequently a disease of the nervous system, suddenly coming on and spontaneously departing. Hence also (deafness is) common to old persons, in whom all the solid parts are rigid, and all the nervous parts are less sensitive.

230. Persons suffering from fever, particularly that kind which great debility and stupor are accustomed to attend, often become deaf: which perhaps may sometimes be a bad symptom, when coming on with other symptoms of oppressed brain and exhausted powers of the patient; but it is generally the best indication, although even some drowsiness may attend it. The reason of this is very obscure; nor perhaps can any other be given, than that such deafness depends upon a state of brain, morbid indeed, but scarcely dangerous in its nature; when hearing is too acute, it takes place on account

so; cum acutior justo auditus, fit propter aliquid inflammationis cerebro obrepentis, quæ semper valde periculosa est.

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. Tinniunt sæpe aures a levissima causa, meatum ipsum vel tubam Eustachianam pro parte obstruente, ita ut imperfectus, interruptus aëri aditus concedatur; quo fit ut hic membranam tympani, vel fortasse partes interiores, inæqualiter, et impetu nimio feriat.

cum auditus (est) acutior justo, fit propter aliquid inflammationis obrepentis cerebro, quæ (inflammatio) est semper valde periculosa.

231. *Sæpe auditus depravatur potissimum hac ratione, ut soni, veluti tympani, campanæ, lapsus aquarum, audiantur, cum nullus tremor est in aëre, neque sanus homo audit quidquam. Hoc malum vocatur, tinnitus aurium, cujus varia genera sunt observata. Plerumque est leve et fugax malum; verò nonnunquam (est) pertinax, diuturnum, molestissimum; (et) vexat diu que noctu.*

232. *Sæpe aures tinniunt a levissimâ causâ, pro parte obstruente ipsum meatum vel Eustachianam tubam, ita ut imperfectus, (et interruptus) aditus concedatur aëri; quo fit, ut hic (i. e. aër) feriat inæqualiter et nimio impetû, membranam tympani vel fortasse interiores*

of some inflammation stealing upon the brain, which is always very dangerous.

231. Hearing is often depraved, particularly in such a way, that sounds like those of a drum, or bell, or of a waterfall are heard, when there is no tremor in the air, and a healthy person hears nothing: this malady is called tinnitus, or ringing of the ears, of which different kinds have been observed. (It is) generally a slight and fleeting disorder; but sometimes is obstinate, long continued, and very troublesome, and harasses both by day and by night.

232. The ears often ring from a very slight cause, partially obstructing the meatus itself, or Eustachian tube; so that an interrupted and imperfect access is given to the air; hence it happens, that it strikes unequally, and with too much impetus, the membrane of the tympanum, or perhaps, the

partes. Hinc bombi, species tinnitûs audiuntur inter hiandum, etiam a sanissimo homine.

233. *Frequentior et molestior tinnitus comitatur multos morbos, tum febres tum affectiones nervosi generis: partim ab aucto impetû sanguinis versus caput, que simul aucto sensu nervosi generis; ita ut ictus ipsarum arteriarum audiantur; partim ab aucto sensû et mobilitate nervorum et musculorum labyrinthi auris; quo fit, ut partes, quæ debebant quiescere, donec essent excitatæ tremoribus agris, concipiant motus suâ sponte, que impertiantur eosdem (motus) aliis partibus, jam nimis sentientibus.*

234. *Quoque tinnitus oritur a vehemente affectû animi; nascitur interdum a ventriculo male habente se: interdum a rheumatico malo afficiente caput et aures, vel a gravedine quæ*

Hinc bombi, tinnitus species, etiam a sanissimo homine, inter hiandum audiuntur.

233. Frequentior et molestior tinnitus multos morbos, tum febres, tum nervosi generis affectiones, comitatur: partim ab aucto sanguinis caput versus impetu, auctoque simul nervosi generis sensu, ita ut ipsarum arteriarum ictus audiantur; partim ab aucto nervorum et musculorum auris labyrinthi sensu et mobilitate; quo fit, ut partes quæ debebant quiescere, donec æris 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 affi-

internal parts. Hence, bombi, a species of ringing are heard during the action of gaping, even by a man in perfect health.

233. A more common and more troublesome ringing of the ears attends many diseases; both fevers, as well as affections of the nervous system: partly from an increased impetus of the blood towards the head, and at the same time the sensibility of the nervous system being increased, so that the beats of the arteries themselves are heard; partly from increased sensibility and mobility of the nerves and muscles of the labyrinth of the ear; hence it occurs, that parts which ought to be at rest, until they were excited by the tremors of the air, receive motion of their own accord, and impart it to other parts, already too sensitive.

234. Ringing of the ears likewise arises from a powerful affection of the mind; it sometimes arises from a disordered stomach: sometimes from rheumatism attacking the head and ears; or from catarrh, which is accus-

cere solet: nonnunquam vero tinnitus solus invadit, malum profecto non exiguum.

235. Variæ tamen causæ, tum hujus tum aliorum auditus vitiorum, sæpe difficillime dignoscuntur, 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.

solet afficere tubam: vero tinnitus solus nonnunquam invadit, profecto non exiguum malum.

235. Tamen variæ causæ, tum hujus, tum aliorum vitiorum auditûs, sæpe dignoscuntur difficillimè, non magis propter abditum situm organi, quam propter notitiam actionum variarum partium ejus, quam (notitiam) habemus parùm accuratam. Vero fit ex utrâque causâ, ut multiplices affectiones auditûs, neque certè neque facile sanentur.

tomed to affect the tube; but ringing of the ears sometimes comes on alone, indeed, no slight disorder.

235. Yet the various causes of this, as well as of the other disorders of hearing, are generally distinguished with great difficulty; not more on account of the concealed situation of the organ, than on account of the knowledge of the actions of its different parts, which we possess but little accurate. But it happens from both causes, that the numerous affections of hearing are cured neither with certainty nor with ease,

CAP. IX.—*De Visû, que (de) varietatibus, et (de) vitiis ejus.*

236. *Radii, dimanantes vel reflexi ab omni puncto lucentis vel illuminati corporis quod contemplamur, incidunt in corneam membranam oculi: (illi radii) qui sunt valde obliqui, reflexi, vel suffocati in uveâ vel in nigro pigmento, quod oblinet ciliares processus, nunquam perveniunt ad interiores partes oculi: vero, (illi) radii qui incidunt rectius in corneam, transmissi per illam pellucidam membranam, et (per) aquosum humorem qui jacet proximè, jam haud parum refracti perveniunt ad crystallinam lentem. Vi hujus lentis, et (vi) vitrei humores qui est proximus, (illi radii) adhuc magis refringuntur, et demum colliguntur in punctum seu focum (ut vocatur), depicturi super re-*

CAP. IX.—*De Visu, ejusque varietatibus et vitiis.*

236. *RADI*, ab omni puncto corporis lucentis vel illuminati quod contemplamur, dimanantes, vel reflexi, in corneam oculi membranam incidunt: qui valde obliqui sunt, reflexi, vel in uvea vel pigmento nigro, quod processus ciliares oblinet, suffocati, ad interiores oculi partes nunquam perveniunt: qui vero rectius in corneam incidunt radii, per pellucidam illam membranam, 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 vocatur, demum colliguntur, pulcherrimam, distinctam,

CAP. IX.—*On the sense of Sight, its varieties and disorders.*

236. The rays emanating or reflected from every point of a luminous or illuminated body, which we contemplate, fall upon the cornea, a membrane of the eye: (the rays) which are very oblique, either reflected or buried in the uvea, or in the pigmentum nigrum, which is spread over the ciliary processes, never reach the inner parts of the eye: but the rays which fall more directly upon the cornea, transmitted through that transparent membrane, and the aqueous humour which lies next to it, being already considerably refracted, reach the crystalline lens. By the power of this lens, and the vitreous humour which is next to it, they are still more refracted, and are at length collected into a point or focus (as it is called,) about to depict upon the retina a very

quamvis inversam, corporis unde profluxerant imaginem super retinam depicturi.

237. Hæc vero delicatissima nervosa membrana, ultimum visus organum est; et ex imagine corporis inversa super eam depicta, homo, cerebrum nervumque opticum sanus, corpus ipsum, erectum, distinctum, propriisque coloribus expressum, videt.

238. Varii dantur oculi humores a natura nihil frustra moliente, quamvis unus ad radios refringendos, et in focum colligendos, imaginemque in retinam exprimendam suffecisset, 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 accuratione, de veris corporum coloribus judicare posset. Certissimis enim experimentis constat lentem, certa ratione compositam,

tinam, pulcherrimam, distinctam, quamvis inversam imaginem, corporis, unde profluxerant.

237. *Verò hæc delicatissima nervosa membrana est ultimum organum visus: et ex inversâ imagine corporis, depictâ in eam (membranam) homo sanus (secundum) cerebrum que opticum nervum, videt corpus ipsum, erectum, distinctum, que expressum propriis coloribus.*

238. *Varii humores oculi dantur a naturâ moliente nihil frustrâ, quamvis unus (humor) suffecisset, ad refringendos radios et colligendos in focum, que (ad) exprimendam imaginem in retinam, potissimum, ut videtur hoc consilio, ut præcaveretur ab alieno colore, quem una et simplex lens solet dare propter radios lucis inæqualiter refractos: et sic homo posset judicare de veris coloribus corporum, accuratione quâ oportebat. Enim constat (ex) certissimis experimentis, lentem compositam certâ ratione,*

beautiful and distinct, although inverted image of the body, from which they had emanated.

237. This very delicate nervous membrane (namely the retina,) is the ultimate organ of vision; and from the inverted image of a body depicted upon it, a man who is healthy as to the brain and optic nerve, sees the object itself erect, distinct, and expressed in its proper colours.

238. Different humours of the eye are given by nature, framing nothing without an object, although one would have sufficed for refracting the rays, and gathering them into a focus, and for expressing the image upon the retina, particularly with this intention, as it appears, that provision might be made against a foreign colour, which one and a simple lens is apt to produce, on account of the rays of light being unequally refracted: and thus man, in this way might judge of the true colour of bodies, with that accuracy with which it was necessary. For it appears from very accurate experiments, that

carere hoc non levi incommodo simplicioris. Varia densitas singulorum humorum oculi, variis partibus, videtur haud parum conferre ad eundem finem: qua variâ refringente vi, fortasse diversa facilitas radiorum ipsorum, ad refringendum, compensatur.

239. *Neque profecto est minima utilitas vitrei humoris, qui efficit longe maximam partem omnium humorum oculi (scilicet) implere globum oculi, que probè distendere retinam, ita ut fere representat concavam sphaeram, quo plura puncta ejus accipiant distinctas et accuratas imagines visibilium rerum: nam si fundus oculi fuisset planior, vel fere cujuslibet alius figuræ quam rotundæ, unum punctum tantum retinæ, puta centrum ejus, habuisset distinctum visum, propter inæqualem distantiam variarum partium ejus a centro oculi. Vero radii, qui incidissent in alia puncta, vel nondum satis*

hoc non levi simplicioris incommodo carere. Ad eundem finem haud parum conferre videtur, varia singulorum oculi humorum variis partibus densitas: 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 implere, retinamque probe distendere, ita ut fere sphaeram concavam repræsentet, quo plura ejus puncta imagines rerum visibilium distinctas et accuratas accipiant: nam si planior fuisset oculi fundus, vel cujuslibet fere alius figuræ 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

a lens constructed upon a certain principle, is free from this serious inconvenience, of one of a more simple nature. The various density of the separate humours of the eye in the different parts, appears to contribute no little to the same object; by which various refracting power, perhaps, the different capability of the rays themselves to be refracted, is compensated.

289. Nor indeed is the use of the vitreous humour inconsiderable, which forms by far the largest portion of all the humours of the eye; namely, to fill up the globe of the eye, and accurately distend the retina, so that it may nearly represent a concave sphere, (and) so that many points of it may receive distinct and accurate images of visible objects. For if the fundus of the eye had been flatter, or nearly of any other shape than the round, one point only of the retina, suppose its centre, would have had distinct vision, on account of the unequal distance of its various parts from the centre of the eye. But the rays, which would have fallen upon other points, either not being sufficiently

refracti, vel postquam in focum semel collecti essent dimanantes iterum, imagine confusa super retinam depicta, visum multum corrupissent.

240. Rotundus est oculus, ut radii per eum transeuntes in justum focum prius colligantur quam in retinam incidant. Par ratio est corneæ convexæ, prominentis, quæ fere tanto magis prominet, quanto planior oculus animali datus est. Quin et rotunditas oculi ad liberimum et rapidissimum ejus motum haud parum confert.

241. Mira conspiratio vel consensus inter binos oculos, interque varias oculi partes, observatur. Alter oculus motum alterius sua sponte sequitur, hac 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 corporis, quod contemplatur, dirigantur; quo fit, ut

refracti, vel dimanantes iterum, postquam semel essent collecti in focum, multum corrupissent visum, confusâ imagine depictâ super retinam.

240. *Oculus est rotundus, ut radii transeuntes per eum, colligantur in justum focum, priusquam incidant in retinam. Est par ratio prominentis convexæ corneæ, quæ fere tanto magis prominet, quanto planior oculus est datus animali. Quin et rotunditas oculi confert haud parum ad liberimum et rapidissimum motum ejus.*

241. *Mira conspiratio vel consensus observatur, inter binos oculos, quæ inter varias partes oculi. Alter oculus sequitur motum alterius (oculi) suâ sponte hac ratione, ut axes utriusque sint semper paralleli; et dirigantur in idem punctum corporis, quod contemplatur, non nisi conatû hominis, illo quidem levi, et facto per instinctum et quasi sponte; quo fit, ut*

refracted, or again emanating, after they had been once collected into a focus, would have injured vision considerably, by a confused image being depicted upon the retina.

240. The eye is round, that the rays passing through it may be collected into a proper focus, before they strike upon the retina. There is the same reason for the transparent cornea being convex, which is the more prominent, generally, the flatter the eye is supplied to an animal. Moreover, the rotundity of the eye contributes considerably, to its very free and rapid motion.

241. A wonderful harmony or sympathy is observed between the two eyes, and between the various parts of them. The one eye follows the motion of the other spontaneously, in such a way, that the axes of both are always parallel, and directed towards the same point of a body which we contemplate, not indeed without an effort of man, although slight, and executed by instinct, and as it were spontaneously: by which it happens that the image of

imago ejus exprimatur prope centrum, utriusque retinæ; nam ibi loci visus est fere semper perfectissimus.

242. *Pupilla patula in tenebris, statim contrahitur luce admissâ vel factâ vividior; et hoc plane tribuendum est consensui inter retinam et muscolum, qui regit pupillam, que vel arctat vel amplificat eam, neque omnino (est tribuendum) irritationi muscoli ipsius. Nam isto musculo prorsus sano, si est nullus visus, nulla contractio pupillæ fit. Quin et musculi pupillarum utriusque oculi conspirant; ita ut, luce admissâ ad alterum oculum, pupillæ utriusque simul contrahantur.*

243. *Quoque pupilla contrahitur, si intuemur accurate quid proprius oculo quam soliti limites distincti visûs: hoc consilio, ut videtur, ut superflui et maxime obliqui radii, et (ut radii) quos refringentes vires oculi vix potuissent colligere in justum focum,*

imago ejus prope centrum utriusque retinæ exprimatur; nam ibi loci fere semper perfectissimus 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 simplicat, plane tribuendum est, neque omnino irritationi ipsius muscoli. Nam sano prorsus musculo isto, si nullus visus est, nulla fit pupillæ contractio. Quin et musculi pupillarum utriusque oculi conspirant; ita ut, admissa ad alterum oculum luce, ntriusque 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 focum vix

an object is expressed near the centre of each retina; for in that part vision is nearly always most perfect.

242. The pupil (which is) dilated in the dark, is immediately contracted by light being admitted or rendered more vivid: this is to be evidently attributed to a sympathy between the retina and the muscle, which controls the pupil, and either contracts or dilates it, and not entirely to irritation of the muscle itself. For that muscle being entirely in a sound state, if there is no vision, no contraction of the pupil takes place. Moreover, the muscles of the pupils of the two eyes harmonize in such a way that, if light be admitted into one eye, the pupils of both are simultaneously contracted.

243. The pupil is likewise contracted if we view attentively any thing nearer than the usual limits of distinct vision; for this purpose, as it appears, that the superfluous and most oblique rays, and the rays which the

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 accommodet: 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 incidant. 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 physiologos, mathematicos, metaphysicos, quo pacto

excludantur. Par ratio videtur esse, quod pupilla sit admodum patula infantibus et junioribus, (sed) fere contractior senibus, quibus oculi solent fieri planiores. Nondum constat pro certo, num, quoque aliis modis, oculus accommodet semet ad varias distantias rerum quas contemplatur: vero nonnulli putarunt hunc esse usum ciliarium processuum; nempe ut dimoveant lentem a solitâ sede, et trahant (illam i. e. lentem) longius a retinâ, quo radii magis refringantur, priusquam incidant in eam (scilicet retinam). Autem est certissimum, oculum mutari quodammodo vel his viribus, tum musculi qui regit pupillam, tum (viribus) ciliarium processuum, vel aliis (viribus) minus cognitis, et accommodari ad varias distantias rerum quas contemplatur, intra certos limites.

244. *Est disputatum diu que multum inter physiologos, mathematicos, (et) metaphysicos, quo pacto*

refracting powers of the eye could scarcely collect into a proper focus, may be excluded; there seems to be an equal reason, why the pupil is very much dilated in infants and young persons but is generally more contracted in old people, in whom the eyes are accustomed to become flatter. It does not appear for certain, whether the eye can accommodate itself in any other way to the different distances of objects which it contemplates; but some have supposed that this is the use of the ciliary processes: namely, that they may remove the lens from its usual situation, and pull it further from the retina, so that the rays may be more refracted before they fall upon it. Nevertheless, it is very certain, that the eye is altered in some way, either by these powers, both of the muscle which governs the pupil, and of the ciliary processes, or by others less known, and that it is accommodated to the different distances of objects which it contemplates, within certain limits.

244. It has been long much disputed among physiologists, mathematici-

fiat, ut videamus rem ipsam erectam, ab inversâ imagine depictâ super retinam; et cur una res tantum spectetur, a duplici imagine, nimirum (ab) unâ expressâ in utroque oculo.

245. *Ipsæ res parum utiles vetant medicum descendere in hanc arenam, ubi tot viri magni nominis exercuerunt semet non sine laude. Tamen juvat scire, tandem ventum esse ad hoc, scilicet, ut omne visibile spectetur secundum directionem rectæ transeuntis per centrum oculi lineæ a puncto retinæ, super quod imago ejus fuerit depicta. Nondum experimenta neque argumenta sunt prolata, quæ ostendant dictam directionem esse veram, mathematicâ accuratione; sed neque ullus, neque levissimus error est detectus in hac re. Igitur oportet (ut) concludamus ex experimentis jam institutis, directionem, quâ (directione) visi-*

fiat, ut, ab inversa super retinam depicta imagine, rem ipsam rectam videamus; et cur a duplici imagine, una nimirum in utroque oculo expressa, una tantum res spectetur.

245. *Res ipsæ parum utiles vetant medicum in hanc arenam descendere, ubi tot magni nominis viri non sine laude semet exercuerunt. Scire tamen juvat, ad hoc tandem ventum esse simplicem de hac re latam esse a natura legem, scilicet, ut omne visibile spectetur secundum directionem rectæ lineæ a puncto retinæ, super quod depicta fuerit ejus imago, per centrum oculi transeuntis. Nondum prolata sunt experimenta neque argumenta, quæ ostendant dictam directionem, mathematica accuratione, esse veram: sed neque error ullus, vel levissimus, in hac re detectus est. Oportet igitur ex jam institutis experimentis concludamus, directionem, qua*

ans, and metaphysicians, how it occurs, that we see an object erect, from an inverted image painted upon the retina, and why one object only is seen from the double image; that is, from one expressed in each eye.

245. The subjects themselves being of little use, forbid the medical man entering into such a field of dispute, where so many men of great repute have exercised themselves not without honour. It is, however, useful to know, that it is at last concluded, that every visible thing is seen according to the direction of a straight line passing through the centre of the eye, from the point of the retina, upon which the image of the object was depicted. Neither experiments, nor arguments, have been brought forward which prove that the said direction is true, with mathematical accuracy; but not any, nor even the slightest error, has been detected, on this head. Therefore it is necessary that we should conclude from the experiments already performed, that the direction in which a visible point is seen, is either this, or very

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 ratione, quæ inversæ depinguntur, easdem erectas videt.

246. Nec verum est, quod primo intuitu simplicius et clarius videtur, 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 eo-

bile punctum spectatur esse vel hanc, vel quam proximam huic. Igitur homo sic constitutus, nimirum lege latâ videndi hujusmodi, vidisset ipsam rem inversam, si imago fuisset erecta; et pari ratione, videt easdem erectas, quæ depinguntur inversæ.

246. *Nec est verum quod videretur primo intuitû simplicius et clarius, rem spectari secundum verum situm et directionem quem habet: vel secundum directionem radiorum lucis, incidentium aut in corneam aut in retinam; enim facili experimento omne corpus potest spectari, loco non suo, vel pluribus locis eodem tempore; et radii lucis dimanantes a quovis puncto, habent tot diversas directiones, vel quum primum incidunt in oculum, vel postquam refracti a variis humoribus, perveniunt ad fundum oculi, ut, si visus inde penderet, omne visi-*

nearly allied to it. Therefore man thus constituted, namely, by the law of vision already laid down, would have seen the object itself inverted, if the image had been erect; and for the same reason he sees the same objects erect which are painted in an inverted direction.

246. Nor is it true, which at first sight might appear more clear and simple, that the object is seen according to the true situation and direction which it has: or according to the direction of the rays of light striking either upon the cornea, or the retina: for by an easy experiment, any body may be seen in a situation not its own, or in many places at the same time; and the rays of light emanating from any point, possess so many directions, either at the time that they first fall upon the eye, or after having been refracted by the various humours, they arrive at the bottom of the eye, that, if vision de-

bile, spectatum variis directionibus eodem tempore, videretur multiplex et confusum.

247. Quæstio de simplice visu a duplice imagine, primo proposita parum accuratè, est postea redacta ad majorem accuratorem; neque profectò est verum, visum esse semper simplicem in sanissimo homine. (Visus) est simplex vel duplex, prout oculi fuerint conversi variâ ratione in rem quam spectamus. Si axes binorum oculorum fuerint directi in idem punctum, duplex imago ejus puncti, nimirum una (imago) expressa in centro utriusque retinæ, efficit simplicem visum. Porro, quotquot res sunt sitæ pari distantia oculo ad utrumque latus talis puncti, simul spectantur simplices; scilicet (illæ res) quarum imagines depictæ super utramque retinam, habent similem situm comparatum cum centro ejus. Igitur centra binarum retinarum,

dem tempore directionibus spectatum, multiplex et confusum videretur.

247. Quæstio de simplice visu a duplice 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 distantia 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

pended upon it, every visible (object) seen in different directions at the same time would appear multiplied and confused.

257. The question concerning simple vision from a double image, at first explained with little accuracy, has since been reduced to a greater degree of precision; nor, indeed, is it true, that sight is always single in a perfectly healthy person. (Sight) is either single or double, according as the eyes are turned in a different manner towards the object we are viewing. If the axes of both eyes are directed towards the same point, the double image of it, that is, the one expressed in the centre of each retina, produces single vision. Moreover, all the objects situated at an equal distance from the eye, on each side of such point, are at the same time seen single; that is to say, the images (the objects) of which painted on each retina, have the same situation relatively to its centre. Therefore, the centres of the two retinæ, and the

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 remotius 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 dissimiliter 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

et puncta in iis, quæ habent similem situm quod ad centrum, nempe supra, vel infra, vel dextrorsum vel sinistrorsum, dicuntur consentire vel dare simplicem visum. Verò res positæ propius, vel remotius oculo, quam punctum, in quod (punctum) axes oculorum conveniunt, possunt spectari simul cum illo, quæ visus earum est duplex. Ostenditur facillè imagines earum rerum occupare partes utriusque retinæ, quæ ponuntur dissimiliter quod ad centrum: nempe, depingi in dextrâ parte alterius oculi, in sinistrâ (parte) alterius. Igitur partes retinarum, positæ dissimiliter quod ad centra, non consentiunt: hoc est, efficiunt duplicem visum ejusdem rei, cujus imago fuerit depicta super utramque.

248. *Quædam varietates, seu leviora vitia hujus sensus, quæ vix habentur morbosa, sæpe observantur. (Illi) dicuntur Myopes,* qui ha-*

points in them which possess the same situation in relation to the centre, namely, above or below, or to the right or left, are said to correspond, or produce single vision. But objects placed nearer, or further from the eye, than the point upon which the axes of the eyes meet, may be seen simultaneously, and the vision (resulting) from them is single. It is easily shown that the images of those objects occupy parts of each retina, which are situated differently in regard to its centre; that is to say, they are painted on the right side in one eye, and on the left in the other. Therefore, the parts of the retina, situated dissimilarly in respect to its centre, do not correspond; they produce double vision of the same object, the image of which was painted upon both.

248. Certain varieties or slight disorders of this sense, which are scarcely considered morbid, are often observed. Those persons are called myopes,

* *Myopes*; this word is derived from two Greek words, *μύω*, to wink, and *ὤψ*, the eye, which is again derived from *ὀπτομαι*, I see.

bent brevem visum, scilicet, qui vident nil accuratè et clarè, nisi admoveatur proxime ad oculum. Hoc fit propter radios lucis nimis refractos, collectos nimis cito in focum, et iterum dimanantes a foco, priusquam perveniant ad retinam; quo fit ut depingant indistinctam imaginem super eam. Frequentissima causa hujus vitii est, nimia convexitas totius oculi, vel cujusdam humoris ejus, veluti corneæ nimis prominentis, &c. quæ nimis refringit radios lucis transeuntes per oculum. (Hoc) incommodum, familiare junioribus, aliquando sublevatur, ut fertur, dum senescunt: quod tamen est minimè perpetuum. Quum levius vitium hujusmodi primo observatur, potest quodammodo vinci consuetudine contemplandi res remotas, quæ cohibendi oculos a valde minutis et vicinis rebus, non secus ac idem vitium (potest) acquiri contrario usû: nimirum, quia oculus quodammodo accommodat sese ad distantas re-

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; quo fit ut indistinctam super eam imaginem depingant. Causa hujus vitii frequentissima est, nimia totius 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

(or near-sighted,) who see nothing accurately or clearly, unless it be brought close to the eye. This occurs from the rays of light being too much refracted, too soon collected into a focus, and again diverging from that focus, before they reach the retina; hence it is, that they paint an indistinct image upon it. A most common cause of this disorder is too great a convexity of the whole eye, or of either of its humours; as a cornea too prominent, which too powerfully refracts the rays of light passing through the eye. This inconvenience, common to young people, as it is said, sometimes is alleviated in old age: this, however, is by no means a constant (occurrence.) When a slighter disorder of this kind is first observed, it may in some degree be overcome by a habit of looking at distant objects, and keeping the eyes from those which are small and near, in the same way as the same disorder may be acquired, by an opposite use of it; for the reason that the eye accommodates

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, ratione haud obscura, usu vitri convexi sublevi 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.

rum, quas contemplatur (243). Concavum vitrum, quod facit radios plus dimanare priusquam incidant in oculum, est simplicissimum et certissimum auxilium Myopibus.

249. (Illi) vocantur Presbyopes, * qui habent longum visum, confusum (visum) vicinarum rerum, (sed) satis distinctum (visum) remotiorum rerum. Hoc vitium agnoscit contrarias causas ac alterum: imprimis (unam causam, scilicet) oculum nimis planum, quo spatium non datur refringendis radiis: hinc, (hoc) malum familiare senibus, etiam iis qui bene viderant florentibus annis solet sublevi usu convexi vitri, haud obscurâ ratione.

250. (Illi homines) dicuntur Hemeralopes, † qui vident tantum interdiu, scilicet in vividâ luce; vero sunt penè vel penitus cæci, crepusculo, aut nocte, vel per lunam, vel per lucernas.

itself, in a manner, to the distances of the objects which it contemplates (243.) A concave glass, which makes the rays diverge more, before they fall on the eye, is the most simple and most certain auxiliary for the near-sighted.

249. They are called Presbyopes, who have a long sight, a confused one of near objects; but very distinct one of more remote things.—This is subject to different causes from those of the former: (amongst them is) particularly, an eye too flat, so that (sufficient) space is not afforded for refracting the rays; hence this disorder, which is so common to old persons, even in those who had seen well in the vigour of their age, is accustomed to be alleviated by the use of a convex glass, for reasons which are well known.

250. Those persons are called Hemeralopes, who see only during the day, that is, by a powerful light; but are almost or completely blind by twilight, by

* *Presbyopes*, derived from $\pi\rho\acute{\epsilon}\sigma\beta\upsilon\varsigma$, old, and $\omega\psi$, the eye, on account of occurring most frequently to old persons.

† *Hemeralopes*, derived from $\eta\mu\acute{\epsilon}\rho\alpha$, a day, and $\omega\psi$, an eye.

Vitium hujusmodi est visum oriri, in quibusdam exemplis a nimis contractâ et rigidâ pupillâ, neque admittente sat debilioris lucis in oculum: autem (visum est oriri) in aliis (exemplis) a deficiente sensû ipsius retinæ; et causis adhuc magis obscuris, veluti cum prehenderit multos homines eodem tempore et loco, quod est observatum interdum.

251. (Illi) dicuntur *Nyctalopes*, * qui melius vident noctu quam interdiu, hoc est, luce valde debili, quam vividiore (luce): (hoc) genus vitii rarum hominibus, (est) imputandum nimis sentienti retinæ, nimis patulæ pupillæ, minùs valenti ad debitam contractionem. Etiam sanissimi (homines) patiuntur incommodum hujusmodi, sed leve et fugax, qui postquam sunt diu versati in tenebris, denuò subito prodeunt ad lucem.

252. *Interna superficies totius oculi sublinitur nigro pigmento, quod pertinet ad choroideam tunicam et ad*

Hujusmodi vitium, in quibusdam exemplis, oriri visum est a pupilla nimis contracta et rigida, neque sat lucis debilioris in oculum admittente; in aliis autem, a deficiente ipsius retinæ sensu; et 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, sanissimi 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 li-

night, or moonlight, or by candlelight. A disorder of this kind has appeared to arise in some cases, from a too contracted and fixed pupil, not admitting sufficient of that fainter light into the eye; it has appeared to arise in others from loss of sensation of the retina itself, and from other causes still more obscure; as when it has seized many persons at the same time and place, which has sometimes been observed.

251. Those persons are called *Nyctalopes*, who see better by night than by day; that is, (better) by a weak, than by a more vivid light: this kind of disorder (which is) uncommon in men, is to be imputed to a too sensitive retina, to a pupil too much dilated, and less competent to its proper contraction. Even the most healthy persons are subject to inconvenience of this kind, slight and fugitive, who after they have been long engaged in the dark, again go out suddenly to the light.

252. The inner surface of the whole eye is smeared over with the pigmen-

† *Nyctalopes*, derived from $\nu\upsilon\breve{\xi}$, the night, and $\omega\psi$, the eye.

gamenta ciliaria, pertinet; hoc fortasse consilio, ut oculus perfectissima camera obscura 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 choroidea instructi interdum parum vel nihil vident, noctu melius.

253. Animalia vero, quæ sub nocte prædam quærunt, genus felis, bubo, et similia, choroideam habent coloratam, splendentem, quæ radios lucis bene reflectit. Hoc modo, ut quidam putant, visum parum distinctum, sed quæ 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 mag-

ciliaria ligamenta: fortasse hoc consilio, ut oculus fiat perfectissima camera obscura, et imago depicta super retinam evadat accuratior, corrupta nullis reflexis radiis. Tamen constat esse quosdam miseros, vulgo dictos albos Æthiopes, quibus rubra choroidea est data, non secus ac (est data) albis cuniculis. Verò homines instructi tali choroideâ vident parùm vel nihil interdum (sed vident) melius nocturnum.

253. *Verò animalia, quæ quærunt prædam sub nocte, (scilicet), genus felis, bubo, et similia, habent coloratam, splendentem choroideam, quæ bene reflectit radios lucis. Hoc modo, habent, ut quidam putant, parum distinctum visum, sed qui sufficiat ad captandam prædam, etiam (in) tenebris: quod tamen est nondum bene explicatum. Porro mobilissima pupilla datur his animalibus, dilatans sese, a tenuissimâ quæ vix visibili rimâ, in magnum*

tum nigrum, (or black pigment,) which pertains to the choroid coat and ciliary processes; perhaps with this intention, that the eye may become a most perfect camera obscura, and that the image depicted upon the retina may become more accurate, being corrupted by no reflected rays. Nevertheless, it is evident that there are certain unfortunate creatures, commonly called white Æthiopians, (or Albinos,) to whom a red choroid coat is supplied, as to white rabbits. Persons supplied with such a choroid coat, see little or nothing during the day, but (far) better by night.

253. Animals that seek their prey by night, (such as) the cat and owl tribe, and the like, have a coloured shining choroid coat, which powerfully reflects the rays of light. In this way, as some think, they have rather indistinct vision, but sufficient to catch their prey, even in the dark; which however, has not been well explained. Moreover, a very moveable pupil is given to these animals, dilating itself from the thinnest and nearly invisible

circulum, secundum lumen quod est, et valde sentiens retina, ut videtur, (datur). Quædam ex his animalibus, instar albi Æthiopis, minùs vident fulgente sole. An est par vitium omnibus? Non videtur. An (visus) corrigitur arctissimâ contractione pupillæ, quâ parum lucis admittitur in oculum? An est credibile choroideam ipsam reflectere plus vel minus lucis, prout sit opus tali auxilio, et illam facultatem reflectendi lucem, pendere iterum ab influxu sanguinis in membranam plenam vasculorum, quem (influxum) animal quodammodo regat? Validior motus sanguinis, et ideo varii affectus animi, facit oculos omnium animalium, et hominis ipsius splendescere, (motus) deficiens hebetat; (et motus sanguinis) demum cessans prorsus extinguit splendorem eorum.

254. *Visus est obnoxius multis et gravibus vitiis. Interdum acuitur ultra modum, ita ut æger vel videat*

num circulum, secundum lumen quod est, sese dilatans, et retina, ut videtur, valde sentiens. Quædam ex his animalibus, albi Æthiopis instar, fulgente sole minus vident. An omnibus par vitium est? Non videtur. An arctissima pupillæ contractione corrigitur, qua parum lucis in oculum admittitur? An credibile est plus minusve reflectere lucis choroideam ipsam, prout tali auxilio opus sit, facultatem illam lucem reflectendi pendere iterum a sanguinis in membranam vasculorum plenam influxu, quem animal quodammodo regat? 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*

slit, into a large circle, according to the quantity of light (admitted,) and as it appears (also) a very sentient retina. Some of these animals, like the white Æthiopian, see less perfectly by sunshine. Is there an equal defect in all of them? It does not appear so. Is (the sight) corrected by the very close contraction of the pupil, by which little light is admitted into the eye?—Or is it to be believed, that the choroid itself reflects more or less light, according as there is necessity for such assistance; and (again,) that the faculty of reflecting light depends upon the influx of blood into the vascular membrane, which the animal can govern in some way? A more active motion of the blood, and, consequently, various affections of the mind, make the eyes of all animals, and of man himself, to sparkle: (when the circulation is) languid, it dulls them; and when ceasing at last, it utterly destroys their splendour.

254. The sight is liable to many and severe disorders.—Sometimes it is

nihil distincte videat, vel non sine magno dolore, pari ratione ac alii sensus, a generali corporis habitu nimis sentiente, a singulari cerebri statu, phreniticis, vel etiam aliis febricitantibus, familiari, veluti inflammatione cerebri vel ejus membranarum; sæpius vero a conditione ipsius oculi, lucis impatientes fimus. Inflammatio tunicæ adnatæ, et partis anterioris scleroticæ, ad posteriores partes oculi serpere solet; et ideo ad choroideam, et retinam ipsam; hinc lucis impatientia, dolor, magnaue 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 cornea, et lente, vel vitreo humore marcescentibus; tum quoque propter corneam siccam et obscuram factam, quod languenti sanguinis

nihil distinctè vel non sine magno dolore, pari ratione ac alii sensus, (scilicet) a nimis sentiente generali habitu corporis, a singulari statu cerebri, familiari phreniticis, vel etiam aliis febricitantibus, veluti in inflammatione cerebri vel membranarum ejus: verò finis impatientes lucis a conditione oculi ipsius. Inflammatio tunicæ adnatæ et anterioris partis scleroticæ, solet serpere ad posteriores partes oculi; et ideo ad choroideam, et retinam ipsam: hinc impatientia lucis, dolor, que magna irritatio, nonnunquam inducens vel augens delirium.

255. *Visus sæpe obtunditur, vel plane aboletur, ætate ipsa, cum ob oculum factum planiorem, humore aquoso non bene suppleto, et corneâ, et lente, vel vitreo humore marcescentibus; tum quoque propter corneam factam siccam et obscuram, quod est imputandum languenti motui*

rendered immoderately acute, so that a patient either sees nothing distinctly, or not without great pain, in the same manner as the other senses; namely, from a too sensitive general habit of body, or from the peculiar state of the brain, (such as is) common to phrenitic patients, or to other feverish persons, as in inflammation of the brain, or its membranes; but we become intolerant of light, from the state of the eye itself. Inflammation of the conjunctiva and front part of the sclerotic, is accustomed to creep to the posterior parts of the eye; and therefore, to the choroid coat, and the retina itself; hence, the intolerance of light, the pain, and excessive irritation, sometimes bringing on delirium.

255. The sight is often weakened or completely destroyed by age itself, both on account of the eye becoming flatter by the aqueous humour not being well supplied, and the cornea, lens, or vitreous humour wasting away; as well as on account of the cornea becoming dry and opaque, which (circum-

sanguinis, et plurimis minoribus vasis obstructis, conclusis (et) excæcatis; tum propter lentem, flavescientem, factam instar electri, et (propter) retinam ipsam minus sentientem. Nam senectus minuit omnem sensum.

256. *Interdum visus prorsus aboletur, cerebro, nervo optico vel retinâ, læsis variis modis, fabricâ oculi ipsius salvâ. Vitium hujusmodi vocatur amaurosis, vel gutta serena; facillè distinguendum, dilatata et immotâ pupillâ, humoribus manentibus pellucidis; fere tribuendum compressioni, congestioni sanguinis, (vel) stupori nervi. Si tantum pars retinæ torpet, nigræ maculæ conspiciuntur in rebus, quas spectamus, et muscæ volitantes ante oculos, frequens sed pessimum, et vix non lethale signum in febribus.*

257. *Porro visus haud raro aboletur quâvis partium factâ obscurâ aut opa-*

motui imputandum est, et plurimis vasis minoribus obstructis, conclusis, excæcatis; tum propter lentem flavescientem, 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 retinæ torpet, maculæ nigræ in rebus quas spectamus conspiciuntur, et muscæ 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,

stance) is to be imputed to a languid motion of the blood, and to many of the little vessels being obstructed, closed, and choked up: also, on account of the lens becoming yellow, like amber, and the retina itself being less sensitive. For old age impairs every kind of sensation.

256. Sometimes the sight is quite destroyed, by the brain, the optic nerve, or retina being injured in various ways, (yet) with the structure of the eye sound. A disease of this kind is called amaurosis, or gutta serena, easily to be distinguished by the dilated and fixed pupil, (and) by the humours (of the eye) remaining transparent; (it is) generally to be attributed to compression, congestion of blood, or stupor of the nerve. If part only of the retina is torpid, black specks are seen in the objects which we look at; also flies dancing before the eyes, are a frequent, but very bad and nearly fatal symptom in fevers.

257. Moreover, the sight is not unfrequently lost, by some of the parts

obscura aut opaca facta; veluti si cornea maculis obsessa luci impervia evaserit; vel humor aquosus sanguine, sero, pure, corruptus fuerit; vel si lens, quod sæpe 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 inæqualiter transire 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, concrecentium, 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,

câ, per quas (partes) radii debent transire et refringi: veluti si cornea evaserit impervia luci, obsessa maculis: vel aquosus humor fuerit corruptus sanguine, sero, (vel) pure: vel si lens adepta fuscum colorem, quod sæpe accidit, et dicitur cataracta, vel vitreus humor corruptas simili modo, vel denique omnes humores oculi, soluti, confusi, (vel) mixti inflammatione, (vel) suppuratione, vel non transmittant lucem, vel sinant (illam) transire parcius et inæqualiter. Quo fit, ut vel nulla, vel obscura, distorta, imperfecta, et male colorata imago depingatur super retinam.

258. *Externa impedimenta visûs, quod ad oculum, scilicet vitia palpebrarum que vicinarum partium, tumentium, concrecentium, (vel) inflammatarum egent nullâ explicatione: neque profectò est vitium ipsius sensûs, si quis non viderit, nullâ luce admissâ ad oculum.*

259. *Aliquando visus depravatur, et res spectantur*

being rendered dim and opaque, through which the rays ought to pass and be refracted: for instance, if the cornea has become impervious to light, being crowded with specks; or the aqueous humour has been corrupted by blood, serum, or pus; or if the lens has acquired a dark colour, which often happens, and is called cataract; or the vitreous humour is diseased in a similar manner; or, finally, all the humours of the eye being dissolved, confused, or mixed up together, by inflammation (and) suppuration, either do not transmit light, or allow it to pass more sparingly and unequally. Hence it happens, that either none, or an obscure, distorted, imperfect, and badly coloured image is painted upon the retina.

258. The external obstructions of vision, in regard to the eye, namely, diseases of the palpebræ, and neighbouring parts, swollen, growing together, or inflamed, require no explanation: nor, indeed, is there any disorder of the sense itself, if a person does not see, no light being admitted into the eye.

259. Vision is sometimes depraved, and objects are seen with a colour not

colore non suo, vel alienis figurâ et sitû quod rariûs accidit. Hoc fit, si humores fuerint tincti insolito colore, ut fertur accidere in regio morbo, (quod tamen est valde dubium) vel a sanguine elapso ex propriis vasis, et mixto cum aquoso humore. Mira depravatio, vel constans et perpetuus defectus visûs, est observatus non semel, in hominibus alioquin sanissimis et bene videntibus; nempe, ut nequeant distinguere certos colores, viridem causâ exempli, a rubro. Alia depravatio est, quum conspicimus, scintillas, aureas flammeas guttulas, (vel) varios colores, nullâ luce admissa ad oculum. Plerumque leve, et fugax genus, mali familiare, (illis) præditi valde sentiente et mobili constitutione corporis, oritur ut videtur a levi impulsû arteriarum in retinam, imprimis micantium vehementius solito, aut inordinate: flammeus circulus conspicitur, ab ipso digito premente ocu-

quod rariûs accidit, figura et situ alienis, spectantur. Hoc fit si humores insolito colore tincti fuerint, ut in morbo regio ferter 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 præditi familiare, a levi, ut videtur, impulsu in retinam oritur, arteriarum imprimis vehementius solito aut inordinate micantium: ab ipso digito oculum premente, clausis palpebris, circulus flammeus

their own, or in form and situation altered, which seldom occurs. This takes place, if the humours have been tinged with an unusual colour, as is said to occur in jaundice (which, however, is very doubtful;) or from blood having escaped from its proper vessels, and mixed up with the aqueous humour. A surprising depravation, or constant and permanent defect of vision, has been observed more than once, persons in other respects healthy, and seeing well: namely, they cannot distinguish certain colours, for instance, green from red. There is another depravation, when we see sparks, gold-coloured fiery drops, or various colours, when no light is admitted into the eye. A slight, for the most part, and fleeting kind of disorder, common to persons endowed with a very sentient and mobile constitution of body, it arises from a slight impulse of the arteries upon the retina, especially beating more powerfully than usual, or irregularly: a fiery circle is seen, by pressing a finger upon the eye, with closed palpebræ. Per-

conspicitur. Par fortasse ratio est scintillæ, quam vident aliquando morbo comitiali 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 capite 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

lum, clausis palpebris. Fortasse est par ratio scintillæ, quam (illi) laborantes comitiali morbo aliquando vident, crescentem in immensum et splendidum jubar, mox antequam corruant convulsi. Homines testantur se vidisse simile jubar, (cum) reduces ad vitam postquam fuerint strangulati, aut (fuerint) mersi sub aquis. Nimirum respiratione cohibitâ, venæ capitis turgentes sanguine, feriunt et comprimunt totum cerebrum, quæ nervosas partes, quæ sunt in capite. Porro scintillæ istiusmodi observantur, haud secundo omine, ab iis laborantibus febre, quibus phrenitis aut ferox delirium imminet; tum quoque ab iis, quibus graviora mala capitis (scilicet) paralysis, apoplexia, epilepsia, instant. An perceptio lucis ubi est nulla lux, recte tribuitur nervosis fibris ipsis retinæ, sponte concipientibus motum.

260. *Distinctus visus, sed falsus, nimirum visibilium rerum, quæ non sunt, quod genus vitii, utcunque videa-*

haps there is the same reason for the spark which persons under an attack of epilepsy sometimes see, increasing to an immense and splendid beam, just before they fall down convulsed. Persons attest that they have seen a similar beam of light, when returning to life, after strangulation, or submersion in water. Respiration, indeed, being checked, the veins of the head, turgid with blood, strike and compress the whole brain and nervous parts which are within the head. Besides, sparks of that kind are observed as no favourable omen, by persons suffering from fever, over whom phrenitis or raving delirium are impending, as well as by those to whom more severe diseases of the head, as paralysis, apoplexy, or epilepsy, are at hand. Is the perception of light, where there is no light, properly attributed to the nervous fibres of the retina, spontaneously receiving motion?

260. Distinct but false vision, namely, of visible objects, which do not exist,

tur mirum et difficile explanatu, est non valde rarum, debet imputari læso cerebro, insaniciæ, delirio, non oculo laboranti ullo modo.

261. *Distortio oculorum, quæ vocatur strabismus apud medicos, est frequens vitium visus. (Ille) est strabo,* qui habet axes oculorum obliquos præter solitum, neque directos ad idem punctum. Hinc visus (est) imperfectus, incertus, aliquando duplex, que ideo confusus, et sæpe (est) ingens deformitas. (Hoc) malum plerumque congenitum, corrigitur haud raro, conatibus, quos infans nondum conscius sui vitii, facit ad reddendum visum jucundiorum et accuratiorum. Idem facillimè discitur imitatione, quæ multum regit omnes homines, imprimis infantes etiam inscios. Dediscitur haud ita facilè.*

mirum et explanatu difficile videtur, non valde rarum est; læso cerebro, insaniciæ, 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 jucundiorum et accuratiorum reddendum, corrigitur. Idem, imitatione, quæ omnes homines, imprimis infantes, etiam inscios, multum regit, facillime discitur. Haud ita facile dediscitur.

which kind of disorder, however, it may be wonderful and difficult of explanation, is not very uncommon; it ought to be imputed to an injured brain, insanity, or delirium, and not to the eye suffering in any way.

261. A distortion of the eyes, which is called strabismus, amongst medical men, is a frequent disorder of vision. He is a strabo, who has the axes of the eyes unusually oblique, nor directed towards the same point. Hence, the sight is imperfect, uncertain, sometimes double, and therefore confused, and often there is great deformity. This evil, generally congenital, is frequently corrected by the attempts which an infant, unconscious of its defect, makes to render the vision more agreeable and accurate. The same is acquired by imitation, which has considerable influence upon all persons, especially children, even ignorant of it.—It is unlearned not so easily.

* *Strabo*, a squinting person; this word is derived from στρεβλος, distorted, and that again from στρέφω, I turn, or twist.

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 epilepsia, 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 præsertim, 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

262. *Est verisimile causam tanti vitii sæpissime inesse musculis oculorum, qui (musculi) male conformati, vel corrupti paralyti, rigiditate (aut) contractione nequeant regere oculos ordinate et æqualiter.*

263. *Hoc vitium nonnunquam inducitur epilepsiâ, in quâ vehementissimæ convulsiones musculorum, et imprimis (illorum musculorum) oculorum fiunt, unde fortasse sunt distortionem aut lacerationes eorum, aut alia immedicabilia mala.*

264. *Nonnunquam comitatur quosdam morbos capitis, præsertim hydropem. Aliquando distortio oculorum est inducta a magnâ vi illatâ capiti; aliquando sed rarissimè subito accedit sine notâ causâ.*

265. *Est vel alterius vel utriusque oculi: distortio quorum, potest esse major, (vel) minor, quaquaversum.*

266. *Sunt (homines) qui persuaserunt sibi (hoc) malum nonnunquam oriri a vitio retinarum: veluti si*

262. It is probable that the cause of so great an evil very often exists in the muscles of the eyes, which, being badly formed, or injured by paralysis, rigidity, or contraction, are unable to govern the eyes regularly and equally.

263. This disorder is sometimes brought on by epilepsy, in which the most violent convulsions of the muscles, and especially of those of the eyes, take place; whence, perhaps, the distortions and lacerations of them, and other irremediable evils.

264. It sometimes accompanies certain diseases of the head, especially dropsy. Sometimes distortion of the eyes has been brought on by great force applied to the head: sometimes, but very seldom, it has come on without any known cause.

265. This (disorder) is of either or of both eyes; the distortion of which may be greater or less in any direction.

266. There are persons who have persuaded themselves, that this disease

solita puncta earum, scilicet centra, et similiter posita quod ad centra, non consentiunt: enim contorsio erit ibi, ne visus fiat duplex. Hæc quoque videtur esse ratio quod eadem augeatur in horrendum modum, cum strabo admovet rem prope oculum, ut contempletur. Vel si centrum alterius aut utriusque retinæ sentiret parum vel nihil, foret necesse, ut homo contorqueret oculos, ut videret: sic, gratiâ verbi, si opticus nervus non adisset oculum oblique sed occupasset centrum retinæ, omnes fuisset strabones, vel habuissemus duplicem visum.

267. *Placuit medicis referre ad visum, quendam molestissimum sensum, quem vocamus vertiginem, quamvis revera æque pertineat ad tactum, vel potius ad conscientiam: enim malum fugatur neque in tenebris, neque clausis palpebris.*

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.

sometimes arises from disorder of the retinæ: for instance, when their usual points, that is, their centres, and (parts) similarly situated relatively to their centres, do not correspond. This appears to be the reason, that this is increased in a frightful manner, when a person who squints applies an object near the eye, that he may see it. Or, if the centre of the one or both retinæ possessed little or no sensibility, it would be necessary that a person twisted his eyes that he might see; so, for example, if the optic nerve had not entered the eye obliquely, but had occupied the centre of the retina, we should all have been subject to squinting, or have had double vision.

267. It has pleased some medical men to refer to the sense of sight, a certain very troublesome sensation, which we call vertigo, although, in truth, it may as much appertain to touch, or rather to consciousness: for the disorder is not dispersed by darkness, nor by the palpebræ being closed.

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 prænuncia observatur vertigo; apoplexiæ, epilepsiæ, hysteriæ, sanguinis profluvii e naribus vel aliis partibus, mensium suppressorum, magnæ corporis plenitudinis, febrium, 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 in-

268. *Malum vocatur vertigo, siquando credimus videre aut sentire nosmetipsos et res vicinas, quamvis revera remotas, titubare, circumferri aut tremere, vel moveri ullo modo. Si vertigo est gravior, æger neque potest videre, præ caligine velut obductâ oculis, neque incedere aut stare firmiter, quippe cui vires quæ regunt artus deficient. Nausea solet comitari vertiginem, que altera (solet) inducere alteram.*

269. *Vertigo observatur comes, et signum, et prænuncia multorum et quorundam gravium morborum; (scilicet) apoplexiæ, epilepsiæ, hysteriæ, profluvii sanguinis e naribus vel (ex) aliis partibus, suppressorum mensium, magnæ plenitudinis corporis, febrium, tum (earum) quas debilitas comitatur, tum (earum) quas auctus impetus sanguinis versus caput (comitatur). Quoque vis illata capiti, quæ vis raro infertur oculis ipsis, nisi quatenus afficiat totum*

268. The disorder is called vertigo, whenever we imagine that we see or feel that we ourselves and objects near us, although remote, stagger, are carried round, tremble, or are moved in any way. If vertigo be more severe, a patient can neither see, for the darkness, as it were, spread over the eyes, nor walk or stand firmly, for the powers which direct his limbs fail. Nausea is wont to accompany vertigo, and the one may bring on the other.

262. Vertigo is observed an attendant, symptom, and forerunner of many and certain severe diseases; (such as) of apoplexy, epilepsy, hysteria, a discharge of blood from the nostrils, or other parts, suppressed menses, great fulness of the body, fevers, both such as attend debility, as well as those which an increased impetus of blood to the head attends. Also force applied to the head, which force is seldom applied to the eye, except inasmuch as it affects the head generally, brings on vertigo. A great and sudden loss of blood and other fluids, debility, syncope, various diseases of the

caput, inducit vertiginem. Ingens et subita jactura sanguinis que aliorum humorum, debilitas, syncope, varii morbi intestinorum, imprimis ventriculi, multa venena admissa in corpus, præsertim narcotica, opium, et similia, et vinum, et omnis meracior* potus solent inducere vertiginem. Hinc (vertigo est) signum omnigenæ ebrietatis. Quoque varii motus creant vertiginem (in) hominibus inassuetis: veluti rotatio capitis vel universi corporis, maritima jactatio, præsertim si navis fuerit parva, et mare (fuerit) turgidum, et similia. In his et similibus exemplis, insoliti et inordinati motus sanguinis excitantur, et communicantur cum nervosis partibus quæ sunt in capite, vel hæc male affectæ per consensum cum aliis partibus, dant confusum sensum, quasi rotationis.

270. Quin vertigo aliquando oritur et ex animo,

ducit. 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 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 hæc per consensum cum aliis partibus male affectæ, sensum confusum, quasi rotationis, dant.

270. Quin et ex animo, certa ratione affecto, veluti conspectu

intestines, especially of the stomach, many poisons admitted into the body, particularly narcotics, (as) opium and the like, wine and every kind of strong liquor, are accustomed to produce vertigo. Hence (vertigo is) a symptom of every kind of intoxication. Also different motions produce vertigo in persons unaccustomed to them; as rotation of the head or whole body, tossing upon the sea, especially if the vessel be small and the sea rough, and the like.—In this, and in similar instances, unusual and irregular motions of the blood are excited, and communicate with the nervous parts which are in the head; or these being disordered by sympathy with other parts, afford a confused sensation, as of rotation.

270. Besides, vertigo sometimes arises from the mind being affected in a

* *Meracior* literally means more pure, simple, unmixed or clean: but as it is so commonly connected with *vinum*, it is here intended to imply some strong, unmixed, spirituous liquor.

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.

affecto certâ ratione, veluti conspectû rapidæ rotationis, vel prærupti lapsûs aquarum, vel horrendi præcipitii vel etiam sine ullo visû, ab intensâ et veloce cogitatione.

271. Vertigo plerumque comes et signum aliorum morborum, tamen nonnunquam princeps et solus morbus, rediens per intervalla, paulatim ingravescens, impedit et labefacit pariter functiones animi atque corporis: neque firmissimum et vividissimum ingenium Swiftii potuit resistere tanto malo.

certain manner; as by the sight of rapid rotation, or a broken waterfall, or frightful precipice; or even without any vision, from intense and rapid thought.

271. Vertigo, generally the attendant and symptom of other diseases, but sometimes the principal and sole disease, recurring at intervals, and gradually increasing, equally impedes and wears away the functions of mind and of the body; nor could the very powerful and vigorous mind of Swift resist so great a disorder.

CAP. X.—*De sensibus, qui dicuntur interni, (scilicet) memoriâ, imaginatione, judicio; que (de) varietatibus et vitiis eorum.*

272. *Præter sensus seu facultates jam descriptos, homo possidet et alios: qui vocantur interni ideo, quod fungantur suis muneribus sine impulsu vel ope externâ; et (quod) organa quæ maxime subserviunt iis, (sunt) interna, abdita et inaccessa externis rebus, (et) agant propriis viribus.*

273. *Perceptio excitata externâ re, fugax et peritura suâ naturâ, desinit brevi; quod si eadem res fuerit denuo admota organo, non modo renovat perceptionem, sed homo simul reminiscitur* pristini sensus, quem habuit; scilicet, novit se habuisse eundem (sensus) antea.*

CAP. X.—*De sensibus qui dicuntur interni, memoria, imaginatione, judicio; eorumque varietatibus et vitiis.*

272. PRÆTER jam descriptos sensus, seu facultates, homo et alios possidet; qui ideo interni vocantur, quod sine 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.

CHAP. X.—*On the Senses which are called internal; viz. Memory, Imagination, (and) Judgment, and on their varieties and disorders.*

272. Besides the senses and faculties already described, man possesses also others, which are called internal, because they perform their functions without external impulse or aid; and because the organs which are subservient to them are internal, hidden, and inaccessible to external objects, and act by their own powers.

273. The perception excited by an external object, fugitive and perishable by its nature, ceases in a short time; but if the same object shall be again applied to the organ, it not only renews the perception, but man recollects at the same time the primary sensation which he had; that is to say, he knew that he had the same sensation previously.

* *Reminiscor*, to remember, governs a genitive, as well as an accusative, case: as *datæ fides reminiscitur, reminiscitur pristini sensus.*

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, nullaque juvante externa causa, et internis sæpe causis parum perspectis, sensus diu ante percepti, obliti, sopiti, homini invito nec opinanti renovantur, reviviscunt. Hujusmodi recordatio invita propius adhuc ad perfectam memoriam accedit.

276. Vera et optima memoria dicitur facultas illa, qua varias cogitationes præteritas, veluti sensus, perceptiones, &c. eodem quo fuerant receptæ ordine, ad arbitrium nostrum revocamus, detinemus, contemplamur, dimittimus.

274. Hæc prima et simplicissima species memoriæ contingit primæ ætati, quippe quam infans semestris ostendit, dum agnoscit parentes aut nutricem, (et) declinat ignotos homines. Hæc facultas vocatur recordatio, causâ distinctionis, et videtur esse principium et fundamentum perfectioris memoriæ.

275. Quin et omnino nihil admoto ad organa externorum sensuum, que nullâ causâ externâ adjuvante, et sæpe causis internis parum perspectis, sensus percepti diu ante, obliti, sopiti, renovantur (et) reviviscunt homini invito nec opinanti. Invita recordatio hujusmodi adhuc propius accedit ad perfectam memoriam.

276. Vera et optima memoria dicitur illa facultas, quâ revocamus, detinemus, contemplamur, dimittimus ad nostrum arbitrium varias præteritas cogitationes, veluti sensus, perceptiones, &c. eodem ordine quo fuerant receptæ.

274. This primary and most simple kind of memory occurs to the earliest age, namely, such as an infant of six months old evinces, when he recognises his parents or nurse, and shrinks from strangers. This faculty is called recollection, for the sake of distinction, and appears to be the beginning and foundation of more perfect memory.

275. Moreover, nothing at all being applied to the organs of the external senses, and no external cause assisting, and often internal causes being little perceived, sensations felt long before, forgotten, and put to rest, are renewed, and revive to a person against his will, nor thinking upon them. Involuntary recollection of this kind makes still further approaches to perfect memory.

276. The true and best kind of memory is that faculty by means of which we recal, detain, contemplate, and dismiss, at our pleasure, various past thoughts, as sensations, perceptions, &c., in the same order as they were received.

277. *Hæc (memoria) est nulla in primâ ætate: paulatim accedit, atque augetur. Fit promptissima, validissima, tenacissima, (in) puerili ætate: viget juvenili et virili (ætate:) solet fatiscere nonnihil senili (ætate:) dilabitur et tandem aboletur summâ senectute; et fere hac ratione, ut facillè dimittat novas res, (sed) adhuc tenacissima veterum (rerum) quas recondiderat florente ætate; verò annis ingravescentibus omnes res pariter novæ atque antiquæ penitus delentur a memoria.*

278. *(Memoria) datur promptior et tenacior aliis hominibus, debilior aliis; augetur incredibiliter cultû et usû, modo hi non fuerint nimii. Est plus (vel) minus prompta aut vivida variis hominibus, que iisdem variis temporibus: ita ut fungatur suo officio vel admodum lente, vel fere incredibili velocitate. Hic multum pendet a secundâ aut adversâ valetudine, quâ homo uti-*

277. *Hæc, prima ætate, nulla est; paulatim accedit atque augetur. Puerili ætate, promptissima, validissima, tenacissima fit; juvenili et virili viget; senili nonnihil fatiscere solet; summa senectute dilabitur, et tandem aboletur; et fere hac ratione, ut novas res dimittat facile, veterum, quas florente ætate recondiderat, adhuc tenacissima; ingravescentibus vero annis, omnes res novæ pariter atque antiquæ, e memoria penitus delentur.*

278. *Aliis hominibus promptior et tenacior, aliis debilior datur: cultu et usu, modo hi non nimii fuerint, incredibiliter augetur. Variis hominibus, iisdemque variis temporibus, plus minus vivida 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 sta-*

277. This (kind of memory) does not exist in early infancy; (but) by degrees it comes on and is increased: it becomes most ready, powerful, and retentive in boyhood; it is vigorous in youth and manhood; it is accustomed somewhat to fail in advanced age, in extreme old age it falls away, and is at length completely lost; and nearly in this manner, (viz.) that it easily dismisses new matters, (but is) still very retentive of the older ones, which it had stored up in the vigour of life; but years weighing him down, all matters, equally new as well as old, are completely swept away from the memory.

278. (Memory) is supplied more prompt and more retentive to some men, and more feeble to others: it is surprisingly increased by cultivation and use, provided they are not in excess.—It is more or less prompt or vivid, in different men, and in the same men, at different times; so that it either performs its functions very slowly, or with nearly incredible velocity. Here much depends upon the good or bad state of health which a man enjoys; on

tu animi, vel gravi affectu commoti, vel placida quiete fruentis, et ad suas cogitationes accurate attendentis. 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 judicio minus firmo aut certo polleant.

279. Viget inter somnum, saltem leviolem, memoria; sed parum accurata, neque voluntati pareat, 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

tur; a statu animi, vel commoti gravi affectu, vel fru-entis placida quiete, et accurate attendentis ad suas cogitationes. Tum quoque ratio est habenda corporis, sentientis aut mobilis magis vel minus: quoque incitator aut languescens motus sanguinis hic facit multum; vel ab exercitatione, febre, dolore, torpore, sopore, &c. Memoria solet esse rapidior, pueris, junioribus, et vividis præter solitum: et hæc est (una causa) inter alias causas, cur hi polleant minus firmo aut certo judicio.

279. *Memoria viget inter somnum, saltem leviolem (somnum) sed (est) parum accurata, neque pareat voluntati, neque profert res suo ordine, ut solet (proferre) homini sano et vigilant!.*

280. *Memoria potissimum retinet plerasque novas res, sæpe repetitas, jucundas, ingratas, vel quæ afficiant mentem ullo modo magis solito. Ordo rerum juvat præ omnibus, quæ solemus uti eo tanquam præsentissimo auxilio, ad revocandam quam-*

the state of mind, either excited by some depressing affection, or enjoying placid rest, and accurately attending to its thoughts. Then account is likewise to be taken of the body, (whether) too sensitive, or more or less irritable; likewise, a more excited or languid circulation has much influence here, either from exercise, fever, pain, torpor, drowsiness, &c. Memory is accustomed to be more rapid in boys, in young persons, and in those who are unusually lively; and this is (one,) amongst other causes, why they are supplied with a less firm or accurate judgment.

279. Memory is active during sleep, at least (during) the lighter kind, but is slightly accurate, nor is obedient to the will, nor presents circumstances in their order, as it is wont (to do) in persons healthy and awake.

280. Memory retains, especially, most new circumstances, those often repeated, (or) agreeable, unpleasant, or those which affect the mind in any unusual degree. Arrangement of subjects is useful above all things, and we

libet rem in memoriam. Memoria est fons et origo omnigenæ scientiæ et iudicii, et igitur ordo est maxima pars, nimirum sine quo memoria foret aut nulla, aut vaga et prorsus inutilis, qualis contingit somniantibus et delirantibus.

281. *Memoria minuitur aut turbatur, aut prorsus deletur variis morbis, imprimis (illis morbis) qui afficiunt cerebrum, (scilicet) apoplexiâ, paralyti, epilepsiâ, tumoribus intra caput, externâ vi illatâ eidem (i.e. capiti,) febribus, imprimis (illis) quibus impetus sanguinis est auctus versus caput, aut cerebrum (est) valde affectum, quâcunque ratione.*

282. *Memoria depravatur rarissime, ita ut non representet menti, res suo ordine: quod si tale vitium acciderit, est referendum ad læsam imaginationem, aut (ad) delirium.*

283. *Imaginatio est (illa) facultas quâ, homo conjun-*

quamlibet in memoriam revocandam. Scientiæ omnigenæ, et iudicii, memoria fons 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, febribus, imprimis quibus auctus est caput versus sanguinis impetus, aut cerebrum quacunque 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 re-

are accustomed to make use of it, as the most ready auxiliary to recall any thing to memory. Memory is the fountain and source of every kind of science and judgment, and, therefore, order is the chief part of it; for without it, memory would either be null or vague and quite useless, such as belongs to persons dreaming, or delirious.

281. Memory is weakened, or disturbed, or quite destroyed, by various diseases, particularly by those which affect the brain, (as) by apoplexy, paralysis, epilepsy, tumours within the head, force applied to the same, and fevers, especially by those in which there is an increased impetus of blood towards the head, or the brain is very much affected in any kind of manner.

282. The memory is very seldom injured in such a way that it does not represent circumstances to the mind in their order; but if such an evil should occur, it is to be referred to diseased imagination, or delirium.

283. Imagination is that faculty by which man connects, divides, and

condiderat, 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 suggerit 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.

gii, dividit, et disponit novo ordine, varias res quas (ille) recondiderat memoriâ; veluti, si finxerit sibi Centaurum aut Sirenem (ex) mixtis et compositis formis, viri et equi, mulieris et piscis.

284. *Imaginatio est vividior, quam memoria, et habet latius imperium in animum, (que) in affectus ejus, et (in) genus nervosum: quamvis memoria ipsa possideat nonnihil hujusmodi vis.*

285. *Cogitationes, quas innumeras hæc facultas suggerit, vix unquam confunduntur in sano homine, cum præteritis rebus, quas memoria contemplatur, multo minus cum veris et præsentibus rebus, quas sensus percipiunt: neque sanus homo, sobrius, et vigilans, credit res aut esse veras, aut unquam fuisse (veras,) quas imaginatio fingit ad suum arbitrium. Si talis error acciderit, est habendus pro morbo.*

arranges in a new order, the various circumstances which he had treasured up in his memory: as if he has fancied to himself a Centaur, or a Siren, from the mixed and compound forms of a man and a horse, of a woman and a fish.

284. Imagination is more vivid than memory, and has a more extensive control upon the mind and its affections, and upon the nervous system; although memory itself possesses some influence of this kind.

285. The thoughts, which this faculty supplies without number, are scarcely ever confounded in a healthy person with past occurrences which the memory contemplates, and much less, with true and present matters, which the senses perceive: nor does a man in health, sensible and awake, believe those things to be true, or ever were so, which imagination frames at its will. If such an error should have occurred, it is to be considered as a disease.

286. *Imaginatio (est) parva infanti, maxima juveni, temperatior viro, (sed) fere reprimatur seni: eadem est vividior hilaribus, irritabilibus, mobilibus, et (illis) acriter sentientibus præter solitum; (est) fere nulla torpidis, frigidis, et stupidis. Neque est (hæc) facultas utilis poëtis solis; quippe species cujus, fingat quærat et detegat similitudines et convenientias rerum non observatas a vulgo hominum, primo perducens ad conjecturas, tandem (perducens) ad veram scientiam ope judicii. Forsitan debemus huic, Neutonium, pariter ac Homerum.*

287. *Hoc est commune imaginationi et memoriæ, quod habent tantum imperium in perceptiones visus et auditus; neque profectò possunt renovare aut accuratè aut fortiter perceptiones aliorum externorum sensuum.*

288. *Judicium est facultas, quâ contemplamur,*

286. *Imaginatio infanti parva, juveni maxima, viro temperatior, seni fere reprimatur: eadem hilaribus, irritabilibus, mobilibus, et prætersolitum acriter sentientibus, vividior; torpidis, frigidis, stupidis, fere nulla. Neque solis poëtis utilis facultas; quippe cujus species, rerum similitudines et convenientias, a vulgo hominum non observatas, fingat, quærat, detegat, ad conjecturas primo, ad veram scientiam, ope judicii, tandem perducens. Huic forsitan Neutonium 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 omni-*

286. The imagination is slight to the infant, and most powerful to the young man, more temperate in manhood, and is nearly checked in old age: the same is more vivid in the cheerful, irritable, restless, and those unusually acutely sensitive; it is almost null in the torpid, cold, and stupid. Nor is this faculty useful to poets alone, for one kind of it can imagine, detect, and seek out, similarities and correspondence between things, not observed by the bulk of men, at first leading to conjecture, and at last to real science, by the aid of judgment. Perhaps we owe to this Newton, as well as Homer.

287. This is common to imagination and memory, that they possess so considerable an influence upon the perceptions of sight and hearing; nor, indeed, can they renew accurately or forcibly the perceptions of the other external senses.

288. Judgment is the faculty by which we contemplate (and) compare all

genas, sensus, memoriæ, imaginationis contemplamur, comparamus, earum similitudines et differentias detegimus, 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 cogitationem fieri, quem certa et quæ eidem respondet cerebri mutatio non comitetur. Res parum certa, parum utilis, ne-

comparamus omnigenas perceptiones et cogitationes, sensus, memoriæ, et imaginationis, (que) detegimus similitudines et differentias earum que inde deducimus varias conclusiones. Hæc facultas (est) debilis infanti et puero: firmior et certior consistente ætate; paulatim corrumpitur ætate, et (illis) morbis, quotquot minuunt memoriam, nam nullum iudicium potest esse sine memoriâ.

289. Omnes hæ facultates sunt tam purè mentis, ut primo intuitu haud quicquam corporei videatur inesse iis; tamen morbi, qui impediunt eas, docent, certum statum cerebri requiri, ut bene exerceantur: que id (i. e. cerebrum) esse primum organum internorum sensuum. Nec philosophi, nec medici non parvi nominis desunt, qui negant ullam mutationem aut cogitationem fieri in mente, quem, certa mutatio cerebri et quæ respondet eidem, non comitetur. Res (est) parum certa, parum

kinds of perceptions and thoughts, of sense, memory, and imagination, and detect their resemblances and differences, and thence deduce various conclusions. This faculty is weak in the infant and boy: is firmer and more accurate in established age; it is by degrees gradually corrupted by age, and by diseases, as many as diminish the memory; for without memory there can be no judgment.

249. All these faculties are so purely of the mind, that at first sight nothing corporeal appears to exist in them: however, diseases, which impede them, shew that a certain state of the brain is required that they may be well exercised; and that it is the primary organ of the internal senses. Neither philosophers, nor medical men of no little report, are wanting, who deny that any change or thought takes place in the mind, which a certain change of the brain, and which answers to the same, does not accompany. The

utilis, neque facile reducenda ad experimentum (120, et seq.) Enim tantum abest, ut habeamus ullam scientiam mutationum, quæ fiunt in cerebro, vel modi quo variæ partes ejus operantur, dum memoria, imaginatio, (aut) judicium exercentur, ut ne quidem sana conjectura fuerit hactenus prolata de his rebus.

290. *Igitur oportet morbos functionis esse parum intellectos, ratio cujus in sanitate obscuratur atrâ caligine. Tamen habet suos morbos, graves, molestos, miserandos, dignos omni attentione: nimirum, qui vitient et reddant inutilem, mentem ipsam, quâ præstamus cæteris animalibus.*

291. *Mens alienatur, si quando homo confundit cogitationes memoriæ aut imaginationis cum perceptionibus externorum sensuum, et sic credit (res) adesse, quæ non sunt, vel nunquam fuere: vel si fert judicium de rebus, male sanum et alienum a communi sensû ho-*

que 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, judicium 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, qua cæteris animalibus præstamus, vitient, et inutilem reddant.

291. Alienatur mens, si quando homo cogitationes memoriæ aut imaginationis cum perceptionibus sensuum externorum confundit, et sic, quæ non sunt, vel nunquam fuere, adesse credit: vel si judicium de rebus male sanum, et a communi hominum sensu alienum, fert.

matter itself is little certain or useful, nor easily to be reduced to experiment, (120, and following sections). For so much is wanting, that we may have any knowledge of the changes which take place in the brain, or of the manner in which its various parts operate, whilst memory, imagination, or judgment, are exercised, that not even a sensible conjecture has hitherto been brought forward on these subjects.

290. Therefore, it is necessary that diseases of function should be little understood, the reason of which, in a state of health, is concealed in such utter darkness. Nevertheless, it has its diseases, severe, troublesome, pitiable, and deserving all our attention; namely, such as vitiate and render useless the mind itself, in which we excel other animals.

291. The mind is deranged, whenever a person confounds the thoughts of the memory or imagination with the perceptions of the external senses, and thus believes things to be present which are not, or never were; or, if

Hoc autem rarissime, si unquam, accidit. Judicium 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 vocatur; 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 omi-

num. Autem hoc accidit rarissime, si unquam. (Homo) captus mente solet ferre sanum judicium a falsis principiis: neque furens male ratiocinatur, sed potius decipitur, qui credens se (esse) Jovem, posceret fulmina Jovis.

292. Alienatio mentis vocatur generatim vesania; (vocatur) delirium, si est ex febre; citra febrem, generalis furor vocatur insania; vero minus generalis dementia, scilicet de unâ vel alterâve, mente sanâ de omnibus aliis, vocatur melancholia: quicum insignis tristitia aliquando conjungitur. Tamen nullus accuratus limes existit inter sanam mentem et vesaniam, omnis hilaritas præter solitum vergit ad insaniam; et mæstus et meticulosus animus appropinquat ad melancholiam.

293. Delirium comitatur febres varii generis: aliquando (est) leve, facile discessurum, et vix mali

he forms a judgment on things unsound, and different from the common sense of men. This, however, occurs very seldom, if ever. A deranged person is accustomed to form a sound judgment, but on false principles; nor does the raving madman reason badly, but is rather deceived, who, thinking himself Jupiter, would ask for his thunderbolts.

292. Aberration of intellect is called generally vesania; delirium, if it arises from fever; (when) without fever, general derangement is called insanity; but a less general derangement, that is, on one or a second particular subject, the mind being sound on all others, is called melancholy, with which, remarkable sadness is sometimes combined. However, no precise limit exists between a sound mind and vesania; every kind of unusual cheerfulness verges to insania, and a sad and timid mind approximates to melancholy.

293. Delirium accompanies fevers of different kinds: sometimes (it is) slight, easily going away, and scarcely of bad omen. However (it is) often

ominis: tamen sæpe grave, et pessimi ominis, postulat magnam curam et attentionem.

294. *Delirium est ferox vel mite. Rubor vultus, dolor capitis, ingens pulsus arteriarum, tinnitus aurium, oculi rubri, inflammati, truces, micantes, impatientes lucis, et vel nullus somnus, vel dira quies rupta horrendis somniis, soliti mores exuti, novi (mores) induti, morosi, et immansueti pro mitibus, iracundia; alienatio animi primo observanda inter somnum et vigiliam, fides data imaginationi, perceptiones ex externis sensibus nullæ vel neglectæ, et cogitationes memoriæ prolatae sine ordine, demum furor, et nonnunquam insolita et incredibilis vis artuum, ita ut plures homines vix possint compescere unum ægrotantem, præcedunt et comitantur ferox (delirium.)*

295. *Contra mite delirium sæpe observatur, cum debili pulsû, cum pallido collapsio vultû, vertigine a*

nis: sæpe tamen grave, et pessimi ominis, magnam curam et attentionem postulat.

294. *Delirium ferox est vel mite. Ferox præcedunt et comitantur, vultus rubor, capitis dolor, ingens arteriarum pulsus, aurium tinnitus, oculi rubri, inflammati, truces, micantes, lucis 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 prolatae, furor demum, et nonnunquam insolita et incredibilis vis artuum, ita ut plures homines unum ægrotantem vix possint compescere.*

295. *Mite, contra, delirium, cum pulsu sæpe debili, vultu pallido, collapsio, vertigine a situ*

severe, and a very unfavourable prognostic, (and) requires great care and attention.

294. Delirium is furious or mild. Redness of countenance, pain of the head, great arterial excitement, ringing of the ears, the eyes red, inflamed, fierce, glistening, (and) intolerant of light, either no sleep, or frightful rest broken by horrible dreams, the usual manners shaken off, new ones put on, morose and uncouth instead of gentle, passion, derangement first perceived between sleeping and waking, faith placed in the imagination, the perceptions of the external senses null or neglected, and the thoughts of memory brought forth without order, at length rage, and sometimes an unusual and incredible strength of the limbs, so that many men can scarcely hold one patient, precede and accompany furious delirium.

295. On the other hand mild delirium is often observed, with a weak

erecto, prostratis viribus, sæpe observatur. Dolor capitis quoque adest, sed minus acutus quam in altero genere; raro iracundia, sæpe stupor, aliquando mœror insignis et metus: in semisomni primo observatur mentis alienatio, admissa luce, alloquentibus amicis, pro tempore aliquando pellenda; æger multum sibi mussitat, quæ circum fiunt parum curat; tandem stupidus factus, neque famem, nec sitim 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

erecto siti, prostratis viribus. Dolor capitis quoque adest, sed minus acutus, quam in altero genere; raro est iracundia, sæpe stupor, aliquando insignis mœror et metus: alienatio mentis primo observatur in semisomni, aliquando pellenda pro tempore, luce admissa, amicis alloquentibus; æger multum mussitat sibi, parum curat, (illa) quæ fiunt circum; tandem factus stupidus, percipit neque famem, neque sitim quâ fauces arescunt, nec alias solitas propensiones; quo fit, ut urina et stercus elabantur, ægro inscio. Malum ingravescens, desinit in subsultus tendinum, tremores, convulsiones, defectiones animi (et) mortem. Quoque alterum genus delirii sæpe mutatur in hoc, viribus ægri deficientibus.

296. *Signa quæ comitantur utrumque, docent, insolitum, inordinatum, inæqualem motum sanguinis per cerebrum, mutare sta-*

pulse, with a pale collapsed countenance, with vertigo from the erect position, and with prostration of strength; also pain of the head is present, but less severe than in the other kind; there is seldom rage, often stupor, sometimes remarkable sadness and fear; derangement of mind is first observed when half-sleeping, sometimes to be dispersed for a time by the admission of light, and conversing friends: the patient often mutters to himself, and cares little about the things which are done around him; at length become stupid, he neither feels hunger, nor the thirst by which his fauces are parched, nor other customary propensities; by which it occurs, that the urine and fæces escape from the patient unconscious of it. The malady increasing terminates in subsultus tendinum, tremors, convulsions, syncope, and death. The other kind of delirium, likewise, is often changed into this one, by the powers of the patient failing.

296. The symptoms which accompany both kinds, shew that an unusual, irregular, and unequal motion of the blood, through the brain, changes that

tum ejus qui requiritur ad sanam mentem: est satis verisimile, inflammationem cerebri vel minus vel magis generalem et vehementem subesse aliquando, quamvis generalia signa inflammationis in corpore fuerint levia; inspectiones cadaverum docent, quæ sæpè ostenderunt insolitum ruborem, vel totius cerebri vel partis ejus, et effusionem, suppurationem, &c. intra caput.

297. *Verum status cerebri potest multum affici et delirium induci et ab aliis causis, præter motum sanguinis. In multis febribus, veluti in iis, quas insignis debilitas comitatur ab initio, nervosum genus ipsum laborat, priùs et magis, quam motus sanguinis: bene multa vitia cujus, non secus ac sanæ actiones non erunt obvia sensibus. Verò signa læsionis planè ostendunt inæqualem, inordinatam, actio-*

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 totius 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 plane ostendunt inæqualem, inordinatam ejus actionem, vel incita-

state of it, which is required for a sound mind: it is very probable that inflammation of the brain, more or less general and acute, is sometimes present, although the general symptoms of inflammation in the body were slight; post mortem examinations shew this, which have often exhibited unusual redness, either of the whole brain, or of part of it; also effusion, suppuration, &c. within the head.

297. But the condition of the brain may be much affected and delirium brought on also from other causes, besides the motion of the blood. In many fevers, as in those which great weakness attends from the beginning, the nervous system suffers before, and more than, the circulation: of which very many disorders, like the healthy actions, will not be obvious to the senses. But the symptoms of an injury clearly shew that an unequal irregular action

tionem, 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 diætâ, 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 hæreditariæ, a prima et congenita corporis, et præsertim cerebri, fabrica, ut

nem ejus, vel incitationem, ut multi vocant, fieri. Hæc quoque est ratio delirii a venenis.

298. Ex dictis, ratio redditur, non quidem plene sed aliquatenus cur delirium, (sit) varii generis, vehementiæ, ominis; cur sæpe auctum, motû, luce, strepitû, affectibus animi, stimulantibus medicamentis, (et) calore; cur tollatur nunc sanguine misso ex venis, et tenui diætâ, nunc vino et stimulantibus; cur levetur vel compescatur aliquando visû et colloquio amicorum et adstantium, que conspectû bene notarum rerum; cur sæpe ingravescat, si æger detineatur in lecto, evasurum mitius si surrexerit, et sederit erectus paulisper.

299. Ratio melancholiæ et insanix obtegitur multò densioribus tenebris: scilicet, quæ sunt sine febre aut motû sanguinis turbato ullo modo; sæpe quoque sunt hæreditariæ, pendent, ut videtur, a primâ et congenitâ fabricâ corporis,

of it, or an excitement as some call it, takes place: this is also the reason of the delirium from poisons.

298. From what has been said, a reason is given, not clearly indeed, but to some extent, why delirium is of various kinds, violence, and prognostic; why it is often increased by motion, light, noise, affections of the mind, stimulant medicines, and heat; why, at one time, it is removed by taking away blood from the veins, and by weak diet; at another time, by wine and stimulants; why it is relieved or checked, sometimes by the sight and conversation of friends and bystanders, and by the sight of familiar objects; why it often increases if the patient be kept in bed, about to become slighter if he gets up, and sits for awhile in an erect posture.

299. The reason of melancholy and insania is veiled in still greater obscurity, for they exist without fever, or the circulation of the blood being disturbed in any way; they are often hereditary, depending, as it appears, on

*præsertim cerebri, vitium
cujus tamen non posset de-
tegi a subtilissimo anatomi-
co: quæ sæpe recurrunt
post longa intervalla, qui-
bus homines videntur frui
sanâ mente in sano corpore:
et quæ denique sæpe oriun-
tur a malis mentis, nimi-
rum gravibus affectibus,
effectus quorum in cerebrum
et ratio quâ nocent adeò,
sunt prorsus ignota.*

300. *Tamen notum est
varia vitia cerebri, (scilicet)
obstructiones, tumores, vel
ipsius (cerebri) vel calva-
riæ prementis in id, vim
illatam capiti, et, ut medi-
ci scriptores ferunt, duri-
tiem, siccitatem cerebri ip-
sius, et quædam irritamen-
ta stimulantia nervosum
genus, (posse) inducere
malum. Et profectò est
tanta irritatio captis mente,
ut sæpe per longum tempus
dormiant parum vel nihil,
neque facile sopiantur solitis
remediis.*

301. *Sed hæc, quamvis
exigua et imperfecta scien-
tia de morbis cerebri et
mentis, neque caret suis*

videtur, pendentes, cujus tamen
vitium a subtilissimo anatomico
non detegi posset: quæ per inter-
valla recurrunt sæpe longa, quibus
homines mente sana in corpore
sano frui videntur: et quæ denique
a malis mentis, gravibus nimirum
affectibus, sæpe oriuntur, quorum
effectus in cerebrum, et ratio qua
adeo nocent, prorsus ignota sunt.

300. Notum tamen est varia
cerebri vitia, obstructions, tu-
mores, vel ipsius, vel calvariæ in
id prementis, vim capiti illatam, et,
ut ferunt scriptores medici, cerebri
ipsius duritiem, siccitatem, et irri-
tamenta quædam genus nervosum
stimulantia, malum inducere. Et
profecto tanta irritatio mente cap-
tis 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 diffi-

the primary congenital structure of the body, (and) especially of the brain, the disorder of which, nevertheless, cannot be detected by the most minute anatomist: which often occur after long intervals, during which persons appear to enjoy a sound mind in a sound body; and they, lastly, often arise from disorders of the mind, namely, depressing affections, the effects of which upon the brain, and the manner in which they are so noxious, are entirely unknown.

300. However, it is well known that various diseases of the brain, (such as) obstructions, tumours, either of the brain itself, or of the skull-cap pressing upon it, that force applied to the head, and, as medical writers relate, hardness and dryness of the brain itself, and certain irritating substances stimulating the nervous system, bring on this disorder. And indeed, there is such irritation in deranged persons, that generally for a long time they sleep little, or not at all, nor are easily put to sleep by the usual remedies.

301. This slight, but imperfect, knowledge concerning diseases of the brain

cultatibus 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 internorum vitium, ab his omnino diversum, fatuitas scilicet. Fatui sunt qui judicium 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

difficultatibus: nam læsione cerebri vel cujusvis partis ejus factâ, tumore, osse, crescente in mucronem et irritante, &c. nemo prædixerit, quidnam mali, talis læsio sit factura: (an) epilepsiam, apoplexiam, hemiplegiam, stuporem, melancholiam, furorem, dolorem capitis, aut nil præter solitum. Enim exempla non desunt hominum, qui convaluerunt aut diu vixerunt, post amissam haud exiguam partem cerebri; vel qui perceperunt nil incommodi, magnâ parte cerebri corruptâ, donec tandem corruerint convulsi et moribundi.

302. *Et aliud vitium internorum sensuum omnino diversum ab his superest, scilicet fatuitas. (Illi) sunt fatui qui habent nullum judicium de rebus, et aut nullam memoriam, aut imparem muneribus vitæ. Revera quædam fatuitas est communis omnibus infantibus, naturalis, neque morbosa: quod si perman-*

and mind, is not without its difficulties; from injury of the brain or any part of it, no person could have foretold what such an injury is about to produce; (whether) epilepsy, apoplexia, hemiplegia, stupor, melancholy, rage, pain of the head, or nothing unusual. For instances are not wanting of men who have recovered or lived for a long time after having lost no inconsiderable portion of the brain; or who have felt no inconvenience by a large portion of the brain being corrupted, until at last they sunk, convulsed, and moribund.

302. There remains another disorder of the internal senses, quite different from these, namely, fatuity. They are fatuous who possess no judgment of things, and either no memory, or (one) unequal to the duties of life. In truth, a certain kind of fatuity, common to all infants, is natural, and not morbid; but if it has remained beyond infancy, it is then an important, and generally an incurable disease. Fatuity acknowledges the same causes as the

serit ultra infantiam, tum est gravis, et plerumque insanabilis morbus. Fatuitas agnoscit similes causas ac alia vitia internorum sensuum, quantum hæ (causæ) possint detegi oculis vel scalpello: (fatuitas) observatur frequens comes et effectus epilepsiæ. Si hæc (scilicet epilepsia) duxerit originem a causis sitis extra caput, veluti a vermibus hospitantibus in intestinis, vermibus expulsis, que epilepsiâ sanatâ, mens aliquando accedit fatuo.

303. *Est haud absimile, fatuitatem infantum, et defectum memoriæ, et idèd judicii, qui accidit senibus, oriri, a statu cerebri nimis duri et rigidi in his (i. e. in senibus) verò nimis mollis in illis (i. e. in infantibus.)*

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 fatuo aliquando accedit.

203. Haud absimile est, fatuitatem infantum, et memoriæ ideoque judicii defectum, qui senibus accidit, a statu cerebri in his nimis duri et rigidi, in illis vero nimis mollis, oriri.

disorders of the rest of the external senses, as far as they can be detected by the eyes or the knife: it is observed as a frequent attendant and effect of epilepsy. If this has derived its origin from causes external to the head, as from worms dwelling in the intestines; the worms being expelled, and when the epilepsy is cured, intellect sometimes returns to a fatuous person.

303. It is not improbable, that the fatuity of infants, (and) that the loss of memory, and consequently of judgment, which happen to old persons, arise from a state of brain, too hard and rigid in the latter, but too soft in the former.







