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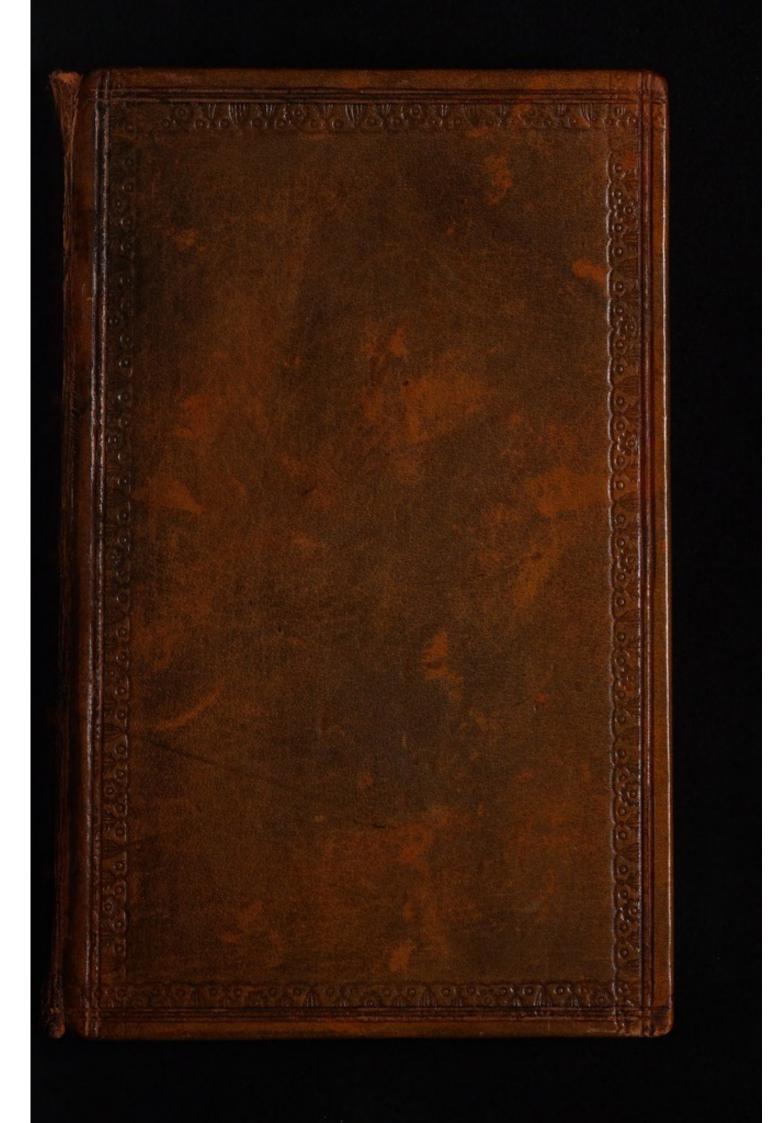
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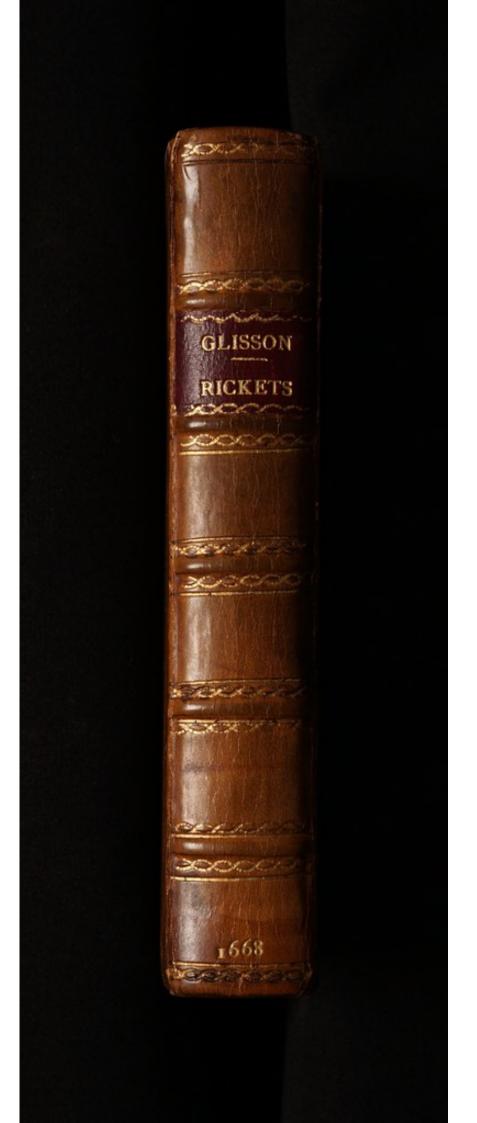
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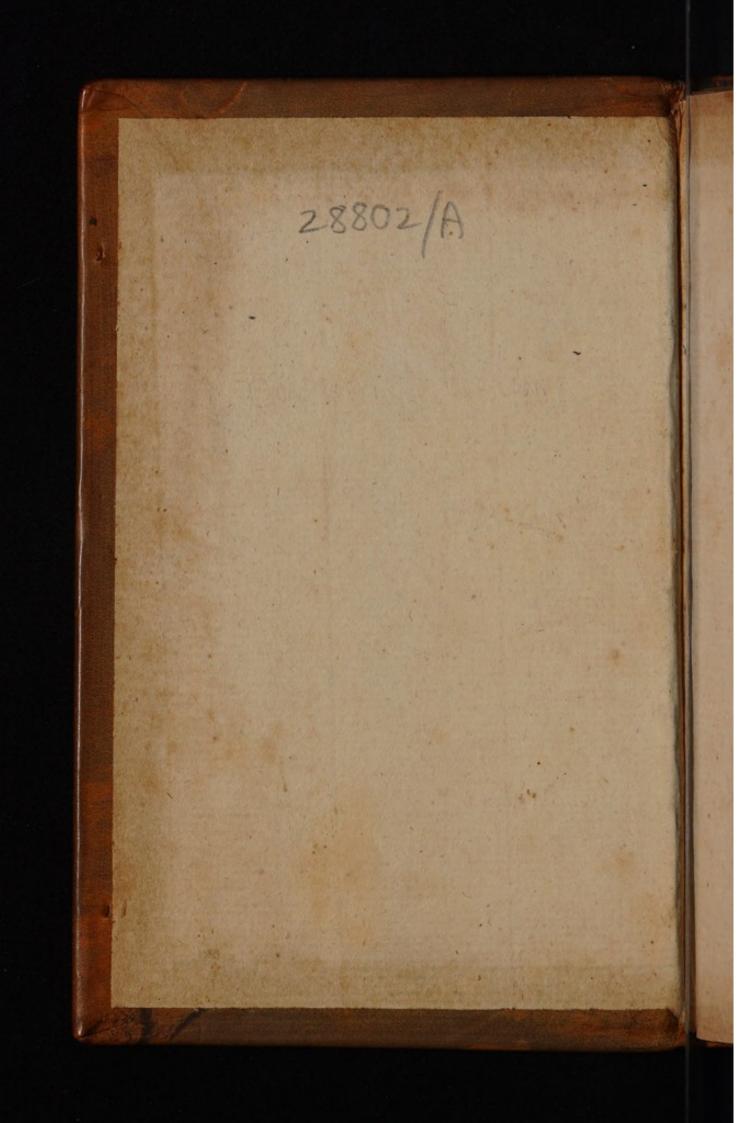


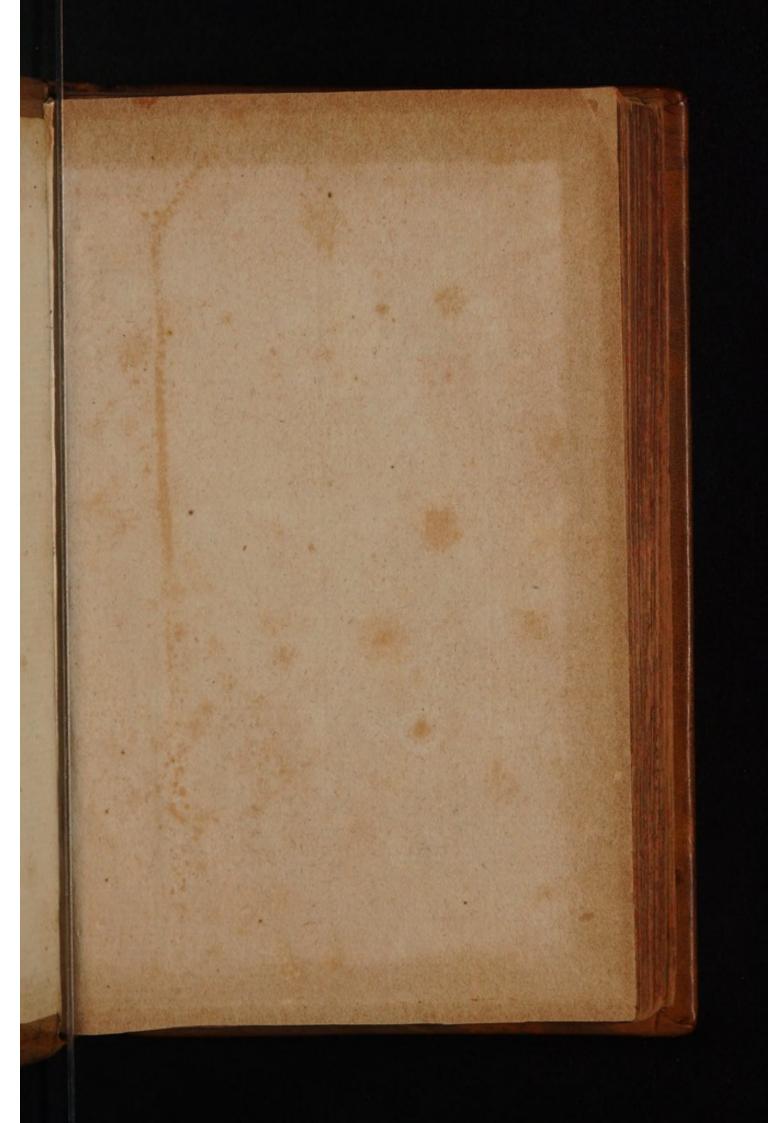


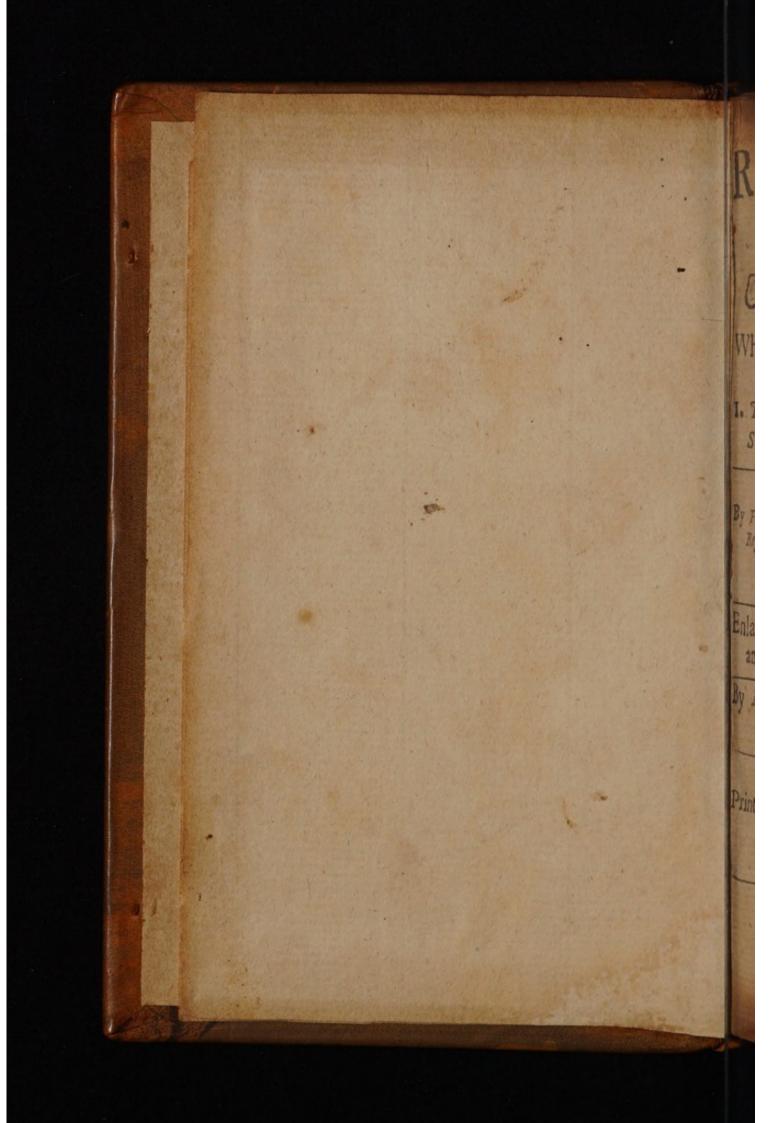












# A Treatife of the RICKETS: Being a Diseale common to CHILDREN. Wherein (among many other things) is shewed, 1. The Essence, 2 The Causes, 3. The Signs, 4. The Remedies of the Difease. Published in Latine, By Francis Glisson, George Bate, and Abasuerus Regemonter : Doctors of Physick , and Fellows of the Colledge of Phyfitians of London. Translated by Phil. Armin. Enlarged, Corrected, and very much amended throughout the whole Book. By Nich. (ulpeper Gent. Student in Phyfick and Aftrology. LONDON. Printed by John Streater, and are be fold by George Sawlridge, dwelling on Clerkenwell-Green. 1668.

# The Preface to the

Courteous Reader.



Or the space of five years and more, we have mutually communicated by written Papers something concerning this Affect in private meetings, (which some of us Physitians use sometimes to have for Exercise sake in the works of Art) when these

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things had opened a way in some fort to the acceper crauiry and fearch after the condition and cure of this Difease; we thought it might prove a very fuccesful undertaking to yecal thise Papers once again to a Review; and ( those things being culled out which might be best accommodated to this use ) to prepare a perfect Tractate of this Discase. That Care by common suffrage was entrusted to Dr. Gliffon, Dr. Bate, and Dr. Regemorter, who purposed at first to divide this business among them solves, according to the parts of the future Tractate, and to affign to each one his proper task. But when Dr. Gliffon in the judgement of the reft, had accurately interweaved his part ( which comprehending the finding out of the Effence of this Diseas and in that had propounded many things different from the common opinion of Physicians (though perhaps the lefs different from ibe truth ) we altered our Resolutions, and committed the first Stuff of the whole work to be woven

#### tentee to the reader.

by him alone, least at length the part should arife defore med, mishapen, and Heterogeneous to themselves. He accepted the offer, but with this condition, that whilft he was employed in beautifying and adorning this part, the other two (hould often hold confultation with him , and conferr unto the woof their Covenants of free Commerce by their own Observations concerning this Affect, and that those things which should be delincated and shaped by his labour and fludy, should prefently undergo the examination. and judgement of the reft, as if they had been fashioned by their hands. And so at length we have brought this work ( such as it is ) to perfection, and have offered it to the publick view, being by no means moved thereunto by an itch of writing (which is the Epidemical custome of this age ( but by this confideration only, That because we are not born for our felves, we might make these ( such as they are ) common, which in some measure may advance the health of Infancy and tender age ( in which for the present a greater part of Mankind, but for the future all Mankind is comprehended) and likewife propagate an Encrease unto Learning: with this hope also, That by this E ample we may invite the wits of other most Learned men to make inquisition into the Effences of Difeases and their Caufes, and to examine these our Labours that icoding 10 Posterity may enjoy them yet more perfect. But the obin each att foure Essence of this Difease, and this our daring to tread in unbeaten paths (were we filent) might obtain a pardon, and modestly challenge a candid Interpretation for all desect, lapses, and errors in these our Endeavours. Finalby expect no flashes of Rhetorick and Courtly-language;

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Ornari res ipla negat, contenta doceri.

Farewell (kind Reader) and peruse them as we dedicate them, that is, with an ingenious and candid mind.

> F. G. G. B. A. R.

The Name of those Doctors who by written Papers contributed their Observations to our first Exercise upon this Affect.

Dr. Francis Gliffon. Dr. T. Sheafe. Dr. G. Bate. Dr. A. Regemorter. Dr. R. Wright, dead. Dr. N. Paget. Dr. J. Goddard. Dr. E. Trench. Fellows of the Colledge of Phylitians at London.

# ECECEPERENCES CORRECTED

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# A Treatife of the RICKETS.

## CHAP. I.

The Antiquity and first Origine of this Disease, the Name of it, and the Derivation of the Name.

> HAT fome new Difeafes altogether unknown to the Ancients, have for fome Ages lately paft invaded divers parts of Europe, is a known and undoubted truth (whether we attribute it to the viciffitude of things, or impute

it to the Sins aud Impieties of men, and their corrupt manners) as the French-Pox, the Scurvy, the + Plica, and the like; in

which number this very affect we are now about to handle, may be justly Registred For if we examin al the difeates of Inants & children defcriped either by the Ancients or Modern Writers n their Books of the Difeases of Infants, we hall meet with none

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+ A most loath fome and borrible Disease in the Hair, unbeard of in former times, bred by modern luxury and excefs: It feizeth Specially upon Women; & by reason of a viscous venomous bumor, glaes towhich with a fufficient gether (as it mere) the bair

bair of the bead with a prodigions ngly folding & entanglement : sometimes taking the form of a great Snake, Sometimes of many little ferpents : full of nastines, vermine, and noy ome Smell: And that which is most to be admired, and never eye fam before pricked with a needle, they yield bloody drops. And at the first Spreading of this dreadful Disease in Poland, all that cut off this borrible and Inakie bair, lost their eyes, or the bumor falling down upon other parts of thebody, tortured them extream-It began first, not 17. many years ago in Poland: Is is now entered into many parts of Germany. H. Saxo. Profeffor of Phylick in Padua.

exactness doth delineate the condition and Idea of this evil. For although it may feem to hold a correspondence, or to have fome affinity with a chronicall Feaver, a Confumption, the extenuation or leannefie of Infants, and \* A Dif- the \* Hydroease in the cephalos; yet bead, com- to ipeak truth ing from it is an affect evidently dif-Rheume. ferent from them in the Species. Foryou may observe many to be vehemently afflicted with this Malady without any Feaverish. diftemper, or any caule of fuch fuspition : in like manner, although a Confumption doth frequently supervene upon this Difease before the diflolution of the Patient, yet is it feldome feen to accompany the first invali-

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this affect to be made lean, yet this doth not happen in all alike, as in a right and true leannefs, but you may perceive the parts about the head and face to be in a thriving condition as to outward appearance, and well complexioned, even to the laft day of life. Finally, The Hydrocephalasis very frequently complicated with this affect, yet we have diffected fome whofe Brain hath been fufficiently firm, and not over-moistned with this superfluous humor. Some have conjectured, that this Difeafe is an imp or fruit of the French-Pox or Scurvy, defcending from the vitiated Bodies of the Parents upon the Children : For we deny not but the Parents being infected with the Scurvy or the venereous Pox, may propagate and bring forth an Iffue, not only affected with that Pox & Scurvy, but likewife infected with this evil, and this even hath alfo faln under Observation : yet for the most part this Difease in the propriety of its Effence, hath neither affinity nor familiarity with those affects, and befides it requireth a different progress of cure; we have fometimes likewife obferved a ftrumatical and fwelling Malady to be complicated with this; but we have allo many times beheld this to be well di-Itin uithed from that, and that from this.

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But why do we dwell fo long upon this inquifition ? feeing that he, who will accurately contemplate the figns of this affect, as in their due places they thal be propounded, may most eafily perfwade himelf, That this is absolutely a new Difease, and never defcribed by any of the Ancient or Modern Writers n their practical Books which are extant at this lay, of the Difeases of Infants.

But this Difease became first known (as near as C 2 we we could gather from the Relation of others after a fedulous enquiry) about thirty. years fince, in the Counties of Dorfet and Somerfet, lying in the weftern part of England; fince which time the obfervation of it hath been derived unto other places, as London, Oxford, Cambridge, and almost all the Southern and Weftern parts of the Kingdom: in the Northern Counties this affect is very rarely feen, and fcarcely yet made known among the Vulgar fort of people.

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The most received and ordinary Name of this Disease is, The RICKETS: But who baptiz'd it, and upon what occasion, or for what reason, or whether by chance or advice it was so named, is very uncertain.

However it obtained that Name, yet in fo great a variety of places through which it hath ranged, it hath not to this day been known by any other Denomination.

But it is an accident well worth our admiration, That this Difease being new, and not long ago namelefs, at leaft not known by this Name, neither spreading so much in remote as in adjacent places, yet no man hitherto could be found out, who knew, or could shew, either the first Author of the Name, or the Patient to whom the appellation of the Difcase was first accommodated, or the peculiar place where it was done, or the manner how it came to be difperted among the common people : for the Inhabitants having gotten a Name for the Difeafe, receive it with acquiescence, as a thing done with diligence and deliberation, and are not at all further folicitous either about the Name, or the Author o the Name. Bu

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But because they which are expert in the Greek and Latin tongues, may peradventure expect a Name from us, whereof fome kind of Reafon may begiven ; we have made fit to gather divers Names. to this Disease, yet we conceive it somewhat unneceffary to make a particular rehearfal of them in this place : Nevertheless it may perhaps be proper and profitable to commemorate the Rules which we propounded to our felves in the defignation of the Name: The first therefore was, That the Name should comprehend fome notable condition of the Difease. The Second was, That it should be fufficiently diftinct from the Names of other Difeafes and Symptoms. The Third was, That it should nfogrenta be sufficiently familiar, easie of pronunciation, accommodated to the Memory, of no undecent ranged, it other De length, and not fludioufly, and laborioufly compounded.

Whileft we bend our employments to the fatiffaction of these Rules, One of us by chance fell upon a Name which was complacentious to himfelf, and afterwards pleafing to the reft; now this was vor faxiris or indeed paxirns (for that termination is not altogether abhorrent from the common Gender) the Spinal Disease, also voo Tis paxeus, the difease of the Spine of the Back : For the Spine of the Back is the first and principal among the parts affected in this evil. Then no other Malady or Symptom did by the prerogative of time vindicate this appellation from it; befides the Name is familiar and easie. And finally, The English Name Rickets received with fogreat a confent of the people, doth by this Name feem to be excused, yea, justified from Barbarism. For without any wracking C 2

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ckets may be readily deduced from the Greek word Rachitis, or Rachites; provided, That we will but allow that confideration of change, which in vulgar pronunciation usually happeneth to words tranfplanted from one Language to another.

Object. You will fay, That they which imposed first the English name Rickers, were peradventure altogether unskilful in, and ignorant of the Greek-tongue, or that they never thought of the Greek word Rachites, at least understood not that the Spine of the Back was the principal among those parts which were first affected in this Disease?

Answer. We Answer, It concerns not us, whether they were ignorant of, or thought not upon the Greek word, or whether they did not understand the principal part that was first affected; yet are these things freely afferted. For we knew many at that time when the Difease did first spring up, and the Name was imposed, indeed learned men, and skilful in the Greek tongue, to have their Refidence in those places, to whom it was not perhaps any difficulty to obferve that confpicuous debility of the Spine in this affect, and thereupon they might affign this Name unto it; although 'tis very possible, yea probable, That the common people by the error of pronunciation might fomewhat pervert the Name fo given, and express it, as to this day they retain it by the word Rickets. But whether it were, or were not fo, we are not at all folicitous. If the matter were fo, the imposed Name will (as is manifest) be altogether congruous, and perhaps also at the last will most fitly correspond with it. For suppose you should

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should fall upon fome Name, received not fo much by choice as chance, yet so fir, that a more commodious Name could scarce be devised by councel and deliberation, nor one more confonant to Reason ; in fuch a Cafe, What would you do? Would you extirpate and banish the received word, to introduce one that was new and nothing better? This practice would usurp upon the priviledge of Conversation, and be injurious to the custom of Speaking : Words contract a value by their ufe, and ought not to be denizen'd with rashness, or innovated by temerity: Or would you not rather confirm the Name received, yet as a new one, and from that time to be deduced from a new Origine: for this would be at the least like a chosen Scynos inoculated upon a new flock, which by reason of the affinity with the Root, would without any difficulty receive strength and nourishment : Or if this please you not, suppose if you please, That we now newly devised the English name of this Disease, and deduce it from the Greek word Rachites : the English word refulting from hence would be the Rachites : and how little is the difference between that and the ordinary word Rickets ? Certainly fo little, That the vulgar pronunciation is not wont to be greatly folicitous about so small a difference: But we trifle too much in flaying fo long upon these trifles. Let the Greek name therefore of the Difease be nofos Rachitis, or Rachites (if the word may be allowed to be of the common Gender) or tes Racheos; in Latin Morbus Spinalis, vel Spinæ Dorfi: and by coyning a Latin Substantive out of the greek Adjective Rachitu-idis let the ordinary English name Rickets be retained, or in stead of it, to gratifie more curious ears, you may fubsubstitute the Rachites. And thus much, if not too

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## CHAP. II.

Anatomical Observations collected from the Dissection and Inspection of Bodies Subdued and killed by this Disease.

Efore we attempt an enquiry into the Nature and Causes of this Disease, we hold it convenient to premise some few certain and undoubted things, as being obvious to the Senfes, which both demonstrate the real exiftence of this Difease, and may also be cast for a foundation, whereon to build the Superstructure of our Judgment and Opinion concerning this new Difease. For we would not have any man to imagine that we here treat of fome Fictitious & Imaginary Evil, much less to expect that our Opinion should be creduloufly embraced without examination. But this we rather aim at, That the matter of our Difcourse to all possiblity may be known and preconceived in the very entrance, that we may confirm those things which we shall propose, by those things that are obvious to the Senfes, as occasion shall require; and that the Reader being instructed in these, may become a competent judge of our Reafons, and with the more facility be able to interpose his judgment concerning each of them. We attest therefore, that

that many of us have been prefent at feveral Diffections of Bodies which have been feparated by this Difeafe, and that we will in this Chapter briefly and faithfully declare those things which we have hitherto observed by long Experience and frequent Diffections, namely, Those things which we have feen with our eyes, and have handled with our hands.

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In the mean time Two things are here to be premonished : The former is, That the Reader carry in his memory, That the dead Bodies which we opened were most vehemently afflicted with this difease whileft they were animated, for they are suppoled for the most part to have yielded to the very magnitude of the Disease, and therefore he must not expect that magnitude of the Affect or Symptoms which we here describe, in other Bodies yet living or newly befieged. For every Disease is moved to a Confiftence, and then also Nature being oppreffed, and unable to maintain the conflict groweth worfe and worfe. The later is, that the Reader take notice, That almost all Diseases in processe of time, do unite unto themselves other affects of a different kind, and therefore that Chronical Difeafes are for the most part complicated before death : Let him not therefore imagine that every preternatural thing that is found in dead Bodies, though deftroyed by this affect, must of necessity belong to this evil; for perhaps it may rather have reference to fome other Disease supervenient upon this before death, then to this very Malady: And the truth is, Anatomifts through inadvertency, and want of due regard to this Caution, have fouly erred in their Observations, whileft they afcribe those things which concern another

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another Difease, to another wherewith it was complicated before the diffolution. The best prevention therefore or rectification of this error is, Not to make a rafh judgment from the infpection of one or two bodies, but first by a reiterated and sedulous experiment, to be able to diffinguish what things perpetually occur, what for the most part, what frequently, and what but feldome, in the diffected bodies that have perished of the fame Disease : for you must know, That what foever is not perpetually confpicuous in the opened Bodies diffolved by the fame Difease, cannot appertain to the intimate and chief Essence of it : for neither the Disease it self can have an existence being separated from its Essence, nor the Effence being separated from the Disease. But enough of these things ; let us now proceed to the Observations themselves.

These our Anatomical Observations are distinguished into those which do extrinsecally occursthe Body being not yet opened, and those which present themselves only upon the Dissection of the Body.

I. These of the former kind are they which are outmardly visible upon the first appearan e of the naked dead Body.

1. An irregularity, or disproportion of the parts; namely, The Head bigger then ordinary, and the Face fat & ingood constitution in respect of the other parts. And this indeed hath appeared in all those whom hitherto we have beheld to perish by this affect.

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fest, one onely excepted, who together with this Difeafe had supparated Lungs, and was pined and disfigured with the Ptysick. Yethe also throughout the whole progresse of the Difease, was full faced, and had his head somewhat big; but for about fourteen dayes before he Deceased, on a sudden all the fless parts about his head confumed away, and his face was like the picture of Hypocrates, not withour the just wonder of all those who beheld so fudden a change.

2 The external members, and the muscles of the whole Body were flender and extenuated, as if they had been wasted with an Atrophy, or a Consumption. This (for so much as we know) is perpetually observed in those that die of this Disease.

3 The whole Skin, both the true, and also the fleshy and fattish Membrane, appeareth lank and hanging, and loose like a Glove, so that you would think it would contain a far greater quantity of flesh.

4 About the joynts, especially in the wrists and ankles certain swellings are confpicuous, which if they be opened, not in the fleshy or membranous parts, but in the very ends of the bones, you may perceive them to be rooted in their appendances; and if you will file away those prominencies of the bones, you will eafily perceive them to be of the fame fimilary substance with the other parts of the bones.

5 The articles or joynts, and the habits of all the external parts are lefs firm and rigid, and more flexible then at another time they are observed to be in dead bodies; and in particular the Neck after death is scarce fiff with cold, at least much lefs then in other Carkasses. 6 The

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6 The Breft is outwardly lean, and very narrow, especially under the arms, and seemeth on the fides

#### \* That part of the breft where the ribs meet.

to be as it were compressed, the # Stern also is somewhat pointed, like the Keel of a Ship, or the breft of a Hen. have

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7 The top of the ribs to which the ftern is conjoyned with griftles, are knotty, like unto the joynts of the Wrift and Ankles, as we have already faid.

8 The Abdomen indeed outwardly in respect of the parts continent is lean, but outwardly in respect of the parts contained it is somewhat sticking out, and seemeth to be sweld and extended. And these have been our Observations before the opening of the bellies.

#### II. The Abdomen being opened, we have Noted these things:

I The Liver, in all that we have diffected, hath exceeded in bigneffe, but was well coloured, and not much hardned, nor contaminated by any other remarkable vice. We defire fome bodies fhould here be excepted, in which other Difeafes before death were complicated with this, as in a Dropfie and an extream Confumption we remember to have hapned.

2 The Spleen (namely fo far as hitherto it hath been lawful for us to observe) for the most part is not to be contemned, whether you confider the magnitude, the colour, or the substance of it, notwithstanding we do not deny but it may otherwise happen in regard of a complication with other Discases. 3 We have fometimes efpied a wheyish water to have glided into the cavity of the Abdomen, but indeed not often, nor in any great plenty.

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4 The Stomach and Guts are fomewhat more infected with flatulent humors, then found bodies ufually are, which partly may be the caule of that extension of the Hypochondriacall parts above mentioned.

5 The Mefentery is fometimes faultleffe, and fometimes affected with glandulous excretcences bigger then ordinary, if not with fwelling bunches: But concerning the fweet-bread we declare nothing for a certainty; only we fulpect that Obstructions, if not a Schirrhus, may fometimes invade that part. But thus we delegate, to the enquiry of others.

6 The Kidneys, Uretors and Bladder, unleffe there be a concomitancy of fome other Difeafe, are laudably found. We obferve in general of all the Bowels contained in this Belly, that although the parts containing them, as we have noted above, are very much extenuated and amaciated, yet are they as large and as full, if not larger and fuller, then those seen in found bodies, as hath been faid of the Liver.

### III. The Sterne being with-drawn, these things bave presented themselves in the b. est.

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I A certain adherence or growing to of the which cloatheth the ribs in Lungs with the # Pleura the inner fide.

or leffe discernable in all the Bodies which hitherto

we have cut up. Yet we suppose that this affect may happen without any such nourishment, although in the advancement of the Disease for the most part it conneth before the Patient die.

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2 The Appings or stuffings of the Lungs are no less frequent, especially in those co-adhering parts. Hard humors also engendered by a thick, viscous and blackish blood, sometimes in one, sometimes in many of the strings of the Lungs, yet are not these alwayes conspicuous, many times also Imposthums and Ulcers,

3 One amongft us doth atteft, That he once faw glandulous knobs and bunches, fo numerous, That they feemed to equallize, if not exceed the magnitude of the Lungs themfelves : They were fcituated on both fides between the Lungs and the Mediastinum (that is the Membrane that divides the middle belly) and were extended from the Chanelbone to the Diaphragma.

4 In the cavity of the Breft we have fometimes feen a collection of wheyifh waters, and indeed more frequently then in the cavity of the Abdomen, but not in all.

S One amongft us hath likewife feen this affect complicated with a great Impofthume, and with the Ptytick : the Stern being removed, all the Lungs on the left fide were infected with an Impofthume, and on every fide growing to the Pleura, and the humor being lightly crufhed, a copious, thick and flinking Matter of a yellowifh colour, flowed out thorow the fharp artery into the very mouth : The outward Membrane of the Lungs, whereby they firmly adhered to the Pleura, appeared thicker then ordinary, and by the mediation of it, the ftrings on that that fide did fo grow together, that you could fcarce diffinguish them for such: the same Membrane also involved both the Lungs and also the Impossibume it felf, which being opened, the magnitude of the Impossibume was discernable, which by the estimation of those that were present, contained at the least two pounds of water.

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6 The kernel in the Chanel-bone in Childhood is alwayes observed to be great, and perhaps greater yet in those who have died of this Disease.

#### 1V. The Skull being fawed thorow in a circular Figure, and the little cover being removed, we have observed these things:

I The Dura Mater hath been more firme, and adhered to the Skull in more places then is ufual in men of ripe years : perhaps the fame may be obferved in other Children not affected with this evil, although, as we fuppofe, not in fo great a manner : for certain it is, That in new born Infants there are many & ftraight connexions between the Pericranium and the Dura Mater which are afterwards broken off, and are fcarce difcernable.

2 In fome Bodies that we have diffected between the Dura and the Pia Mater, and in the very ventricles of the Brain, we have found wheyish and waterish humors: from whence it is manifest, That this affect is complicated with the Hydrocephalus.

3 We have found the Brain in others that we have opened, to be firm and inculpable, and not overflowed with any waterish congestions.

4 Lastly, We have observed in some Bodies late-

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ly opened, That the Carotides have exceeded their just proportion, and fo alfo have the jugulary Veins; but the Arteries and the Veins which are delated to the outward parts, were of an unufual flendernefs.

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But whether or no this be perpetual in this affect we cannot yet witnefs by an ocular testimony; yet we conjecture, That it happeneth fo perpetually, but it came not fooner into our minds to examine it, fince the beginning of our Anatomical enquiries into this fubject.

These things being premised, our next Disquifition shall be to find out the Essence of the Discase.

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## CHAP. III.

Certain Suppositions are propesed for the easier finding out of the Essence of the Disease. First, of the Essence of Health. Secondly, of the Essence of a Disease. Thirdly, of a threefold Division of Health and Diseases. The Explication of the third Division, and the Use of the same. The Description of a natural Constitution, and the exaltation of it. The fourth Supposition of the Combination of three Constitutions in the same parts.

T Hat we may proceed the more diffinctly and clearly in the finding out of the Effence of this Difeafe, we judged it very advantagious to premife thefe fubfequent Suppositions :

I. That the Effence of Health doth confift in fome Confitution of the Body according to Nature. But leeing this is twofold in the kind, one Effential and neceffary, refpecting the  $\tau \delta$  effe fimply, which during life continueth immoveable and immutable under various affections, and is indivisible : The other Accidental, having reference to the  $\tau \delta$  bene effe, which in respect of the whole Animal, is both moveable and mutable 4

#### table; and hath a great latitude, and can be present or absent without the diffolution of the whole. Health confists not in the former, but in the later Constitution.

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II. That the Effence of a Difease in like manner confisteth not in the Effential Constitution : For fo the diffolution of the whole would by and by follow : But in the Accidental Conftitution, namely fuch an one, as in respect of the whole can be present or absent without its d folution. We have faid ( and not without reason ) that this Constitution wherein Health and Sickneffe are founded, is moveable and accidental in refpect of the whole; for even this alfo in respect of some part may be effential : as for example, a finger being cut off, a Difease ariseth in the defective number of the parts, which in respect of the whole, is founded upon an accidental Conftitution ; for that finger may be prefent or abfent without the diffolution of the whole; but in respect of the loft member it is founded upon an Effentiall Constitution, for this Difease being supposed, the Effence of that finger perisheth.

III. That the Conftitution wherein the Effence both of Health and Sicknefs confifteth, admits a threefold manner of division or distinction in the method of Discipline. The first is somewhat thick, and is resolved into parts altogether Concrete, namely, It proceedeth Kaτà τόπες, according to the division of the parts from head to heel. The second is purely abstracted, and searcheth out all the Elements of the moveable Constitution, from whence cometh the division of Diseases into similar, organical and common ; and then again those various subdivisions into distempers, saults of some fugure, some fugures and pass.

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fages, of magnitude, number, fite and continuity. The third is as it were a middle manner, and although it hath been hitherto neglected, yet we dare avouch, That it may have its ufe, and that no contemptible one in the handling of Difeafes, and the finding out of the caufes of the Difeafe; and it is divided into a Conftitution Natural, Vital and Animal.

The first is proper to, and inherent in every part, absolutely competible to it, and without any dependance upon the other parts according to the Elence of it fimply : This remaineth a while after death, till it be refolred by Putrifaction, Ambustion, fimple Exiccation, Mummification, Petrification, and the like violent Causes, This Constitution in respect of its imple Essence, doth not depend upon those Mempers which minister an Influx, but it dependeth upon them both in respect of its Conservation, and ikewife of its Operation. For the vital influx eafing after death (which as it were the falt and condiment of it) quickly perifheth, and as long as he creature liveth, this is varioully affected by the afluxes, and thereupon the actions are either pronoved or interrupted.

The Second is the Vital Constitution, which is produed by that continual influx from the heart thorow the arpries into the parts of the whole body. This also it adnitteth by degrees, and is often subject to variations nore or less, and sometimes also seemeth to suffer a ind of ecclips, as in a swooning, a syncope, &c. yet perfevereth from the beginning to the last period f life (at least in its fountain) and in some other arts.

The Third is the Animal Constitution, which is derived D 2 from

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from the Brain thorow the Nerves into the Organs of Senfe and Motion. This is many times totally wanting in many parts, the life notwithftanding remaining; yea it might for a long time together be defective in feveral parts, or all the parts, did not refpiration, which is abfolute necessary unto life, depend upon it. These Constitutions therefore keep fuch a connexion between themfelves, that the fecond doth eternally and continually prefuppofe the exiftence of the former, and the third of the fecond ; but there is not back again fo abfolute a dependance. between them, becaufe (as we have even now faid) the former can for some time sublist without the fecond, and the fecond commonly altogether without the third : And these three Constitutions may in most bodies be manifestly perceived, yet we affirm not that they may be found in all. The natural indeed and the Vital are wanting to no part : but the Animal is defective in the Bones (though the teeth will admit some doubt) griftles, perhaps ligaments, and fome fubstances, as of the Liver, Spleen, &c. we affert therefore this threefold Constitution to be in all those parts, to whom the Natural, Vital and Animal Faculty is communicated. For although these Faculties as to the first and may be faid to depend upon the Soul (which relation hath indeed no relation to the Medicinal art) yet in respect of the fecond act they are necessarily rooted in some material Conftitution of the parts to which they belong. For whereas fome fay that the Vital Faculty is derived from the Heart, and the Animal from the Brain unto the other parts, that must not fo be understood, as if the Faculties themfelves in a wandring manner were transient from part to part (for the passing of an

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an accident from subject, to subject cannot be conceived by any understanding) but that the Vital Faculty is derived with, and in the vital Spirit from the Heart unto the parts, or at least is excited by some motion of the Heart and Arteries in the parts themfelves, and in like manner the Animal Faculty doth defcend in & with the AnimalSpirit by the Nerves, or is produced in the parts by fome motion of the Nerves in the Brain. Which way foever it comes to passe, we must needs confesse that some alteration is imprinted in the part it felf receiving it either from the faid Spirits, or from their motions. Which alteration as it is here granted to be the root of the Faculty, either Vital or Animal in the respective parts, fo is it a moveable Constitution, because it can be varioufly changed, remitted and intended without the diffolution of the whole; and it is the Conftitution wherein either Health or Sickneffe may confift, feeing that whenfoever alteration is deficient unto the parts wherein it ought to be, or any other wayes administred then is requisite, the action will thereupon be unavoidably depraved ; but if it be rightly performed, then found and perfect health is faid to be prefent from the part of that Constitution. Confidering therefore that there are two kind of Alterations befides the natural and inherent Constitution, one from the influx of the Heart, another from the influx of the Brain in most parts; and seeing the faid alterations, as they themfelves are more perfect or more imperfect, do render the Faculties in the respective parts (at least as to the second act) more perfect or imperfect, and that the actions are thereupon depraved or found, it is neceffary that this threefold Constitution refide in most of the parts, and D 3

and that the faid kind of alterations be medical conftitutions whereon Health and Sickness may be grounded.

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That this Division or Distinction is not frivolous or altogether unprofitable, appeareth from hence, because the practical Physitians in their Methods do rightly admonish, that in obscure Diseases the Faculties must be accurately observed, when their actions are seen to be depraved, which diligence may ferve as it were for a Manuduction to guide us to the Origine of the affect; now if it be a confideration of so just importance to note the interrupted Faculties in Diseases, certainly it will be an exercise of no less moment to take cognizance of the Constitutions themselves, upon which those Faculties have an immediate and strict dependance.

Now leaft any man should conceive that there is almost a co-incidence between this third Division and the fecond, he may obferve, if he will diligently weigh the matter, That every member of this division doth in some manner include all the members of the next precedent, namely, that the natural Conflitution doth comprehend primarily indeed the fimilar Constitution, but that secondarily and in order to the whole creature, it containeth in a fort the conformation and continuity, in like manner, that the Vital and Animal Constitution do in their way fo clearly participate of all the Members of the faid Division, that to offer proofs of it were an unnecesfary undertaking : Onely we defire the Reader to take notice (which also we even now intimated) That the natural Constitution primarily and principally hath respect unto the temperament, the common qualities, the plenty of the Spirits, and the peculiar

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culiar disposition of them (which by some are referred to the form and the whole fubstance) but that it hath respect unto the manner of the Organe and the continuity as it were fecondarily, and in order to the whole creature, and that it can scarce be otherwife hurt or vitiated by them. Yet we must not deny but that the natural Conftitution is fomerimes vitiated as it is meerly Organical, for thus it falleth out in the obstructions of the naturall passages; as for example, when a stone is impacted or grown to hardness in the passage of the Meter or the yard, and in the like cafes : but this happeneth unto it, especially in as much as the passage is ordained for the use and confervation of the whole; but for the most part the Organical vices in the natural Constitution are of less note and confideration then the fimilar.

These things may suffice to be spoken in a general way of this triple Constitution. We will now in particular speak a few things of them in few words.

The Natural Constitution which is proper unto and inherent in every part, may be known by this defcription, That it is the manner of the natural Being, letled in the parts, competible to them, in as much as they are aptly constituted by their temperament, and common qualities, by their fufficient potion and convenient disposition of ingenerated Spirits, and by their just conformation and continuity, to a perfect performance of natural actions, together with the concurrence of the Vital and (perhaps the Animal) influx. Therefore when there is in any part a just temperament, convenient common qualitics, an exquisite proportion, and harmonious dil-D 4

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polition of inherent Spirits. Finally, when there is a laudable conformation and unity, and yet notwithstanding all this, the natural action is depraved, we may well conclude that it is not vitiated by the natural Constitution, but by reason of the concurrent caufe, namely the vital or natural influx, or of both rogether; for the natural actions in creatures in regard of the union & wedlock of life, are exalted to a more eminent condition then otherwife they would attain unto by the natural Constitution alone. And from hence it comes to pals, That although the natural Constitution in slain Creatures remaineth after death undepraved for a while, yet the attractive and retentive Faculty, the concoction of the aliment, and the expulsion of the excrement do altogether cease : And in Diseases also many times the natural Constitution is at first untoucht, yet the natural action is vitiated meerly by the defect of the due concurrence of the vital influx : after the fame manner fometimes the natural and vital Constitution being found and healthful, yet fome natural action is depraved by reason of the defect of some animal influx and concurrence: but this for the most part happeneth only in the Nervous, Fibrous and Membranous parts, especially where they make a hollownesse, but seldom or not at all in the subftance of the parts : As in the Palfy, the excrements are many times unduly retained, by reason only of the aftonichment and infenfiblenels of the guts, the other conftitutions bein's found. Therefore in these cafes, when fome natural action is hurt, we must not prefently conclude that the natural Constitution is first vitiated, but we must with diligence enquire out that Constitution which is first vitiated, for that

s to be looked upon as the root and first effence of he evil; in like manner, if fome vital action be depraved, we must not presently infer that the vital onftitution is primarily vitiated; becaufe fomeimes the first Origine is more rightly deduced from he natural, or perhaps the animal Conftitution : as or example, Through the intenfivenesse of cold, a inger is mortified by inflammation: in this cale it is rue, that the influx of the vital blood is plainly inercepted; yet the beginning of that interception nust be sought out in the natural Constitution of hat very part to benumned; So alto in a Convultion the circulation of the blood is perhaps fomething lifturbed and interrupted; but the first depravation nust be ascribed to the animal, not to the vital Contitution. On the contrary, in a Feaver the Head is nvaded, but the fource of the evil will peradventure be found out in the vital Conftitution : fo perhaps he Flesh is wasted, and all the natural Spirits are  $d\epsilon$ ayed; yet the root of the evil will be found out in he vital, not in the natural Conftitution: So that iny Constitution of the three before named may be n feveral Difeafes, fometimes the first, fometimes the econd, and fometimes the third caufe of vitiated ictions.

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Not only many other parts of the body (yea fimoly all the lenfible) which exhibit not an influx, neiher are fubfervient as delatory parts, do naturally dmit this threefold Conftitution, but befides alfo ven the Heart it felf, and all the arteries, and the Brain & all the nerves, fo that the Brain (excepting he fault in its natural Conftitution) may be cherihed and helped by the vital Spirit which is tranfnitted thorow the veins and the arteries, being well affected, affected, or viriated and hurt if that be ill affected : the Bra And after the fame manner also may the Heart by nolenc the animal Spirit which hath an influx thorow the recurrent nerve of the fixth pair, the arteries alfo by the animal influx thorow the nerves by a way per-Pally haps not yet found out : And Finally, The Nerves alfo by the vital Spirit deduced thorow the Artethat ye ries. Difeal

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#### CHAP. IV.

That the Essence of this Diseafe confifts not in sinoin the Animal or Vital, but in the Natural Con-When the diitribu stitution; not as Organical, but as Similar : ther) p Three Limitations are Propounded. enthe

be alcr Hefe things being Prefuppofed, We shall Heart proceed to enquire in what Conftitution of the parts the first Root or Essence of this affect is lodged. Be the first Conclusion therefore this,

The First Root of this Affect is not in the Animal Constitution, or in that which dependeth upon the Influx of the Brain into the parts. Indeed we confesse that all the nerves which without the Skull proceed Clion from the fpinal marrow, are found to be loofe and weak in this affect; yet this doth not here feem to arife from a defect of the influx of the Brain, which we thus prove, First the loofnesse and weakneffi

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heffe of the nerves, which cometh primarily from efted : he Brain, is almost alwayes confociated with foman by solency and drowfineffe ; but this Symptom hapwhe peneth but rarely, and by accident only in this affect. aloby Secondly, As we remember, we never knew the ayper- Palfy or the Apoplexy to fupervene or follow upon Nerves : his Difease ; but it ought necessarily fo to do, and e Ane hat very often (at least in the confirmation of the Difease) if this loofness and weakness of the nerves hould take beginning from a defect of the influx of he Brain. Thirdly, We have observed the Brain to be fufficiently firm and inculpable in many diffe-Red after death. Fourthly, For the most part those that are afflicted with this evil are ingenious in repect of their age, which doth evidently atteft the rigour and vivacity of the Brain.

The Second Conclusion. The first root of this affect I nut in s not in the Vital Constitution, or in that which dependeth al Car upon the Influx of the Heart into the parts. An unequal milar: distribution of blood indeed almost (if not altogether) perpetual may be observed in this affect : neverthelefs the chief reason of this inequality must be ascribed, not to the inequality of the influx of the We hall Heart or Arteries, but to the unequal reception and ution of inaptneffe in the parts themselves to receive it; for affents the Heart and the Arteries do for their part indiferininately or equally diffribute the blood with the this, e dantal Spirits every way into the parts. But if it fo fall out the lufux hat an Artery of some part be interrupted in his funfeffethat : tion by reason of the benumnednesse and stugefaproceed : tion of that part, or the parts adjacent, there is a nebe loole effity that the blood must be minutely transmitted here feen hither, and fo unequally in respect of the other he Brand parts which expeditely and aptly receive the blood. and weak-There-

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#### Moth Therefore in this cafe this inequality of distribution CONINE doth properly and primarily depend upon a pre-Third existent fault without the artery pertaining to the theb natural Conffitution of the parts.

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Object. But some may Object, Although perhaps the aforesaid inequality bath no dependance upon the Heart, yet it may happen that a weak Pulfe may fuffice to distribute the blood thorow the lesser Circulations in the inner parts, ubich nevertheless may not be altogether so Sufficient to undergo that duty thorow the greater Circulathe he tions in the outward parts which are more remote from the heart Heart, the fountain of blood. indif

tion Answ. We Answer, That this Objection was at in formerly of fo great importance with one of us, that anter he supposed such an inequality of the vital iuflux did With belong to the prime Effence of this Difeafe, and did Ceed: therefore endeavor to deduce the reason of the first Symptoms from it. But after fecond thoughts, the 新加度 Rt L matter being more nearly and deeply examined, he tano was of Opinion, That this inequality of the vital influx had no relation to the primary, but to the fe-初曲 condary Essence of the Disease. But we return to mar the folution of the Argument. And first we grant CON indeed that in this affect there is an unequal diffritore bution of the blood; and that in the internal parts 121 and in the head it is more liberal, in the externa of more fparing. Secondly, we grant that the Circu-Ha lation of the blood may be kept in the inward parts even although noPulfe appear in the outward parts that but this happeneth only in a vehement either weak nels or oppression of the vital Spirits, as in a swoon CILIN ing, and a ftrong Hysterical Paroxism, or fit of the deed Mother

ution Mother, in which affect fome that have been acsounted for dead have been seen to revive again. Thirdly, we grant that a more liberal Circulation of heblood may be in the internal then the external parts, yea and in some one external part more then in another, as it happeneth in the inflammation of lome external member.

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These things being granted, we affirm, that in the first Cafe the inequality of the distribution of the plood doth not principally depend upon the weaknesse of the Pulfifical vertue for as much as concerns the heart; and the reason hereof is plain. For the heart, as we have already faid, doth emit the blood indiferiminarly or equally, and with one continuation from it self into the Aorta or chief artery, even at fuch time when as the Pulfe is most weak. This artery doth exonerate or disburthen it felf again with all poffible expedition, and from hence proceedeth the inequality of the diffusion of the blood, as the blood is more eafily impelled from one rivulet then from another. This inequality notwithstanding must not properly and primarily be attributed to the heart, but to the recipient parts, and to the particular transmitting arteries. For any primary affect of the heart is necessarily universal, and communicated to all the parts of the body : wherefore although we grant this inequality of the Circulation of the blood to be in the fecondary Effence of this Disease, yet we exclude it from the primary.

Moreover in the Second Cafe propounded, we fay that there is a great disparity between the cases of extream neceffity, and ordinary cafes. Neither indeed do we know whether in the faid cafes the circula-

culation in the inward parts, howfoever it be granted, be of any moment. And for fo much as concerneth the prefent bufineffe, we deny any fuch debility of the heart in this affect, that the Pulfe should be defective in the outward parts ; yea we have not observed that any one afflicted with this Disease hath been prone to fall into an extaly, or a fwooning ; which would readily happen, if the origine of the Difease were rooted in the debility of the heart it felf. Befides, when we have feen fuch as were fick in their tender age, to endure without any loss of ftrength, sometimes a liberal eduction or flowing forth of the blood from the opened veins of their ears, yea, and feen it fometimes reiterated with good fucceffe. Finally, When also they have very well nibs; endured purgations, with respect had to their age, it doth not appear to us how the first root of the evil can be alcribed to the weakness of the vital conftitution. Dilea

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In the Third Cafe it is evidently manifest that the first cause of this unequal circulation of the blood is some disposition of an outward part, as in an inflamed member, laboring under fome private Difeafe, there happeneth a more full and impetuous Pulfe by reason of the accidental heat of the artery; infused by the immoderation of heat which is in that outward part,

Therefore feeing that the Effence of this affect cannot be primarily rooted in the animal nor the vital Constitution of the parts (as we have now shewed) it followeth (which shall be the Third Conclufion) That the primary Effence, or first root of this affect confisteth in the proper or inherent constitution of the parts: But because the natural Constitution (as we have faid

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aid above) confisteth partly in the common qualiies and the temperament, and partly in a just plenty nd disposition of the inherent Spirits, and again artly in the organical construction and continuity; our next enquiry must be to find out in which of the prementioned constitutions it lodgeth, and whether t be rooted in one alone, or in many, or in all togeher. Be the Fourth Conclusion therefore this :

This affect is not radicated in the Organical Constituion of the parts. For although in progress of time the Drgans themfelves are divers wayes affected in repect of their confirmation, quantity and fite, as it s fufficiently manifest from the encreased bulk of he head, liver, &c. from the tumors of the bones into the wrifts, the ankles, and the extremities of the ibs; from various obstructions, and the extenuatiin of the outward parts; feeing neverthelefs that all hefe things depend upon a higher origine, and howoever also we may neceffarily admit these things in Difease confirmed, and now variously compounthat the led; yet in the original Effence, we prefume, for eblood he subsequent reasons they are to be rejected. n an in-

First, Becaufe the depravations aforefaid in the Oranical parts do not appear prefently in the beginning of be Difease, but encrease afterwards by little and little : and although perhaps fome of these may be faid rom the beginning to have taken root in the body, otwithstanding they cannot as yet be immediately lifeerned by the fenfe, neither do they manifeftly ourt any actions, and for that reason they cannot ppertain to the first Effence of the Difease.

Secondly, Becaufe the Organical vices aforefaid are tot the Causes, but the Effects rather of the chief Sympoms which from the beginning exhibit themselves in this affect.

affest. For the augmented figure of the head, liver, pany d &c. the ftanding out of the bones, and the leanneffe waves of the external parts, are more rightly referred to the the di inequality of the nourifhment, then on the contrary, ferred the inequality of the nourifhment fhould be afcribed to them : For when one part doth exceffively feing encrease, and another is defrauded of a due & decent perren augmentation, there is a neceffity that a difproporti- bekof onate and an unequal nourifhment must not only be minon prefent in the parts, but alfo have had a preexistence observe in the body, whereby one part is nourifbed, and a of this nother neglested beneath a mediocrity. But feeingknotty this unequal nourishment is a depraved action, and withat fo a Symptom prefuppofing fome pre-existent Dif-lightly eafe, and yet withal (as we have faid) doth precede, no ful as a cause, the organical vices aforefaid, it is mani-couch fest that those organical vices are not the first root anivi of this Difease. As for the obstructions which in-of the deed are for the most part conjoyned with this Third affect, yet nevertheleffe there is a great deal of rea-Sympto fon to exclude them from the first Effence of this and est Difease, because they neither specificate the Dif-hallse ease, neither can any reason of the Symptoms be And rendered from them, neither do they perpetually tRetin besiege some certain and determinate noble part. atte Some man perhaps, who hath respect to the excel- Thefa five magnitude of the liver, may object that in this more affect; that is perpetually obstructed, and thereupon anon the fanguification being vitiated, the other things n the are prepofteroufly derived; but if this fwelling of reeds the Liver did alwayes proceed from the obstruction The of it, then a paleneffe of complexion, a cachexia or medin indigeftion, and by the advantage of time, the Drop-ad the fie it felf should necessarily and perpetually accompany

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urer, pany this affect : Moreover, The Liver should alannelle wayes be feen to be vitiated in the colour, and at tothe the diffection hard tumors and knots should be ob-""", "erved in the fubftance of it, especially in an inveree aleri-rate affect, and that which killed the Patient; but ethirdy feeing these things do not frequently (much less decent perpetually) occur in dead bodies, the augmented oponi- sulk of it must rather be referred to the irregular nuonly be rition : Moreover, we deny it not, but that we have tiltence observed by Anatomy in those who have perished and a of this Difease, obstructions, various tumors, and leens notty excrescencies in the Lungs; but we atteft m, and vithall, That we have feen fome Infants, yea Boys entDi-ightly affected with this evil, in whom there was pretede to fulpition of vitiated Lungs, for there was no s man ough, no impediment of respiration, which necefint root arily is an individual companion of the obstruction hichin f the Lungs.

in dis Thirdly, Because a sufficient reason of all the loster symptoms proper to this Disease, may more clearly cost dis nd easily be derived from other tountains, as we the Disnall see anon.

And thus we have fufficiently proved, That this penally fect in respect of the first Essence of it, confists not plepan i the Organical Constitution of the natural parts. neexel the fame arguments will more effectually convince atinths more might be produced, but we judge accumureceptor ations unnecessary) That this evil is not radicated erthing a the continuity of the natural parts, fo that there elling a zeds no more words to prove it.

huction The fifth Conclusion. This Difease is primarily cheriaot oted in the similary Constitution of the natural parts: heDrop and therefore in respect of the radical Effence thereaccome, it is a fimilary Difease. And because a fimilary E Difease

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Difease, as fuch, is not perpetually Simple, but sometimes varioufly compounded (namely a Diftemper is either Simple or Compound, and this becomes fuch, not only by the first qualities among themfelves, but perhaps by hidden qualities conjoyned together; or, which is more agreeable to our Conceptions, especially in the prefent bufines, by a kind of fure proportion and medification of the inherent Spirits) We judge this to be a Compound Difeate, and we affert the prime and radical Effence thereof to greater confift in a cold and moift Diftemper, with a Defect and stupefaction of the inherent Spirits, concurring in the inherent conftitution of the parts primarily affected. But before we proceed to an higher protio Explication of this Opinion, we will premile fome Limitations of it.

The First shall be this : That in this Difease, some parts of the Body are Primarily, and others Secondarily affected : And truly, to us the External parts feem fooner to be affected than the Brain and Bowels, as we shall declare more at large when we come to ipeak of the parts affected.

The Second is this; That those parts alone which are Primarily affested, do labor under a notable cold Distemper with penury and st pefaction of Spirit : For the Brain perhaps and the Bowels may be moderately hot, and fufficiently abound with Spirits, by realon of the copious vital influx; and most ure may exceed in them by reason of the affusion of our overplentiful aliment : but the other External parts are alwaies affected with a cold and moult Diftemper, & a benummedness of the natural Spirit, & c. Whereupon we affert, that in this Dileale they are primatilv affected, and that they alone are the feat of the first Effence of this Difease. B

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Forth ioderanel by realou our over al parts an Diftemper are primi feat of the Be this the Third : All the External parts, and those first affected, do not equally labor under a cold and most Distemper, and with benummedness of Spirits, Sc. For the Ligaments, Tendons and Nerves, are in their own nature more cold, and less moist; the Muscless fleshy parts are rather more moist, and less cold : the skinny parts usually retain a mediocrity, yet all the faid parts recede more or less from the natural towards a cold and moist temper. And in like manner, although fome of the faid parts do require a greater plenty and activity of Spirits than others, yet all of them a just proportion, being observed to the plenty and activity respectively due to each of them, are defective and destitute of that just proprotion.

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CHAP.

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#### CHAP. V.

The proposed Opinion is examined by Parts. First, That this Disease is a cold Distemper. An Objection, and the Answer thereunto; That it is moist: That it consistet in the penury or paucity of the Spirit: An Objection, with the Answer. Finally, That this Disease consistet in the stupefaction of the Spirits.

> Ow let us more nearly examine the Opinion proposed, and affert it by parts.

First, That the parts first affected do labor under a cold distemper may be proved. First, from the unequal and diminished nutrition of the said parts; for as the inborn heat when it is augmented to a just proportion, doth very much conduce to further the concoction of the Aliment; fo if it be too remiss, it easily retardeth and lessenth the same.

Secondly, The fame diftemper is proved from the flowneffe and unaptneffe to motion; and alfo from the averfation to exercife, and defire to reft. For as the activity and agility of the Body is attributed to the Heat, fo the tardity and flothfulnefs of it is in great part afcribed to Cold, Namely, fuppofing (as before) that this flothfulnefs hath no dependance

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pendance upon the fault of the animal influx. Thirdly, It is further confirmed, because this Difease many times followeth other acute Diseases, whereby the end not seldom (after the Wast or Confumption of the Natural heat) in a cold distemper.

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no de« ndance Befides, It alfo receiveth Chronical Difeafes which extenuate the Body, and fuch as in any manner are prone to leave a cold diffemper behind them as Pertinacious Obstructions, the Scurvy, Cachexy, &c.

Moreover, Becaufe it fucceedeth the importune fuppreffion of Scabbednefs, and Impetiginous effects, as we have often obferved, when the Scabs have newly broken out again, and the Itch is revived, fuch Boys have been eafily reftored to health, becaufe by that means the Natural heat is re-augmented in the outward Members.

Laftly, Because many times it happeneth after a continual use of cold, thick and viscous aliment, after surfeiting and idleness, and the like evident causes, either diminishing or overwhelming the Natural heat.

Fourthly, It is yet more plainly evinced, becaufe those helps which excite, augment and cherist the heat in the outward parts, as various agitations, rubbings and anointings of the Body, do contribute a large share to the advancement of this Cure. These things being all cast together into a heap, it is sufficiently confpicuous that a cold distemper of the Natural constitution of the parts first affected is contained in the primary effence of this Diseafe.

Object. But here we meet with a specious Objection, That a little Feaver, especially a flow one, or such E 3 as

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as is erratical and wandering, is frequently conjoyned with this affect, which at the fame time feemeth abfolately confistent with a cool distemper. For all Feavers by all men are accounted to be a hot distemper which is diametrically opposite to the said effence. mult p

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We Answer (that we may not here interpose any thing concerning the effence of a Feaver) we freely grant, for fo much as concerns the prefent Queftion, that a Feaver is a hot diffemper; but this doth not chiefly confift in the Natural conftitution of the parts, but in the vital constitution, namely in the influent heat preternaturally affected. For a Feaver is not some private Disease, but universal, and is diffuled from the Heart through the Arteries in and with the vital Spirit, be it either overheated, or otherwise vitiated. For this preternatural heat hath only a respect to that inherent, as a cause potent and able varioufly to alter it, yet indeed by degrees and little and little. For first the influent heat is manifestly an actual heat, but the heat of the natural conflitution is only potential : wherefore we affirm, that a cold diftemper in respect of a natural and potential heat may confift with a hot diftemper in respect of an actual and influent heat. For indeed an actual heat is not fo directly averfe to a cold diftemper, which is fo called by reafon of a defect of the potential heat, but it may (the caufe perfevering) confift for a good while with it. As for example, there is an actual heat in Simple Water, Barley Water, diverse Juleps, and the like being made hot, alrhough at the fame time they are potentially cold. So that to be actually hor, and potentially hot differ not in the Degree, but in the Species, neither are they fo directly contrary to one another, that one muft

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must prefently expel the other out of a fubject. Moreover, Secondly, The influent hot diftemper doth not fo much correct the inherent cold diftemper, as by accident it augmenteth it, namely by a waft and diffipation of the Natural Spirits, wherein chiefly the natural and potential heat refides : Just after the fame manner as the actual heat introduced by the fire diminisheth the potential heat of the Wine. Whereupon any kind of Feaver fupervening upon this Difeafe, ufually brings more damage than advantage to the fick.

Secondly, We affirm, a moift diftemper to be lodged together in the parts firft affected; this is manifeft from the laxity and foftnefs of the faid parts : and this fign likewife doth more ftrongly confirm the fame thing, becaufe the faid parts are extenuated, fo that unlefs there were a redundancy of moifture in them, a certain rigidity and roughnefs would affault the touch; again, a cold diftemper doth very rarely continue long without a moift : and laftly, things helpful and hurtful atteft this truth, for drying things are helpful, and moiftning things are hurtful.

Thirdly, we affirm, That in the parts first affected there is a penury of natural spirits. This is proved by the very same arguments which we produced to evince it to be a cold distemper.

For first the unequal and imminute nutrition of the parts first affected, doth not only argue a coldness of temper, but withall, a want of natural spirits, for otherwise this defect of nutrition might be easily corrected. For the cause of that coldness wherewith the defect of the spirit is conjoyned, or some peccant humor is not impacted, is easily cashiered,  $E_A$  and

and fooner then is wont in this Disease, as may be feen in the parts grown extream cold in the winter feason; for example fake, in the handling of fnow : the parts fo extreamly cooled, provided that they be rightly handled, will return to their priftine temperament in few hours: but wher there is a diftemper with the matter of it, as a cafe conjoynd, or wher there is a defect of the inherent spirits, such a diftemper indeed is not fo foon nor fo eafily removed. But in the prefent affect we cannot affirm, that a conjoyned or impacted matter of any note is(at the least alwaise)caufed in the parts first affected because they are observed to be more withered, feeble, and extreamly extenuated, and feeing this affect is very different from Cachexia and the Virgins difease; in the which for the most part, it is not the want of Spirits, but the conjoyned matter that cherischeth the cold diftemper : wherefore we may rightly infer that the pertinacity of this evil doth chiefly depend upon the defect of the natural Spirits. Secondly, The fame is proved after the fame manner by the fecond argument before alledged for the cold diftemper, namely, from floth and averfnefs to exercife. For activity hath not only a dependance upon the temper, but chiefly upon the fulnefs of the Spirits ; as may be seen in strong and healthful men, who in winter time, and hardeft frost, are more prompt, and inclinable to violent exercifes then in fummer, when the inherent Spirits are wont to be fomewhat diffolved. Thirdly, Feavers, and long extenuating Difeafes, as they often introduce a cold diftemper, fo they evidently diminish and diffipate the inherent Spirits. To these we add, that argument which is deduced from the conftitution of the Parents, the Parents that are more ftrong and lufty (experience witneffeth it) and

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ind accuftomed to labour, feldom bring forth chillay be Iren obnoxious to this Difease : on the contrary, Winter uch as are weak, fickly, idle, tender, delicate, very Inow; prone to immoderare, premature, or decrepite Veney, fuch as are troubled with a Gonorrhea, Sc. for the nost part beget children subject to this affect : oer with Namely, because the Seminary principles are furnihed only with a deficiency of Spirits. We should indeed low proceed to the fourth affertion, but must first emove a Remora that cometh in the way.

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Object. For fome may object, That the natural old distemper is subordinated to the want of Spirits, and ot contra-distinguished to it, as is here supposed. For the aucity of the Spirits seemeth to be the very cause of the old diftemper, and the natural heat be it more intense or nore remiss, seemeth respectively to follow the proportion f the natural Spirits, as being radicated in them as their irst subject.

We answer. First, That the inherent heat is indeed iff grounded and fubjected in the inherent Spirits. Moreover, as the inward heat is divided into two arts, namely, the natural and the acquired heat; fo he inward Spirit must be also conceived to be twoold, the primogenial or feminal derived from the 'arents in the feed, and the acquired Spirit contrated from a perfect affimilation of the aliment : the ormer Spirit is the bafis of the engrafted natural eat, the later of the inward acquired heat; we nean, not that these heats and Spirits are in themlves diffinct in the species, but only in their origina nd degree of perfection, which is fufficient to inveft nem with a various appellation. For in nutrition he affimilation of the aliment proceedeth even to a pecifical identity, and not an individual, although metimes, also it attaineth not the degree of orginal nal perfection. For which caufe it feemed fufficient to us to have named the implanted heat, and the implanted Spirit, without any higher diffinction; and therefore we grant, that the implanted heat is first subjected and rooted in the Spirits, and that it is nothing else then a certain modification of the faid Spirits, whereby they being irradiated by the vital heat do delight to endeavor to diffuse themselves, and to enlarge their dominions, by attracting, retaining, affimilating the aliments like unto themfelves, by fevering the excrements; and laftly, by difpofing the things acquired in due places : we fay, likewife that this endeavor (wherein we place the effence of heat) by reason that it is diffusive doth fomewhat diffipate and wast the implanted Spirits, which because of this effect are vulgariy called by the name of radical moisture continually devoured and confumed by the heat. Thus far we grant the argument : But in the fecond place we affirm that the implanted heat doth differ from the hot implanted temperament; for the implanted heat is only a part of the hot implanted temperament, for not only a Spirit, but fulphur alfo and falt, or perhaps choler contribute their heat to the conftitution of the whole hot implanted temperament, whereof the implanted heat is only a part. Wherefore it is falfly fuggested in the propounded argument, that a plenty of Spirits is the fole caufe of a hot diftemper, and a paucity of a cold diftemper : for a pound of the flesh of an infant containeth more implanted Spirit then a pound of a young mans flesh : yet it is mol evident, that the temperament of a young man is fa more hot then that of an infant : a hot temperamen cannot therefore depend upon the fole plenty of the Spirits, nor a cold temperament upon a want o Spirit

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# ftemper with a competent plenty of Spirits, as in

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(43) birits. Moreover in many maladies a hot diffem-er is confiftent with a paucity of Spirits; as in a eflick of the third degree; in like manner of a cold ftemper with a competent plenty of Spirits, as in e Green-Sicknefs, We fay thirdly, That a plenty or paucity of Spi-ts is not perpetually a fufficient caufe to determine to diffic the temperament either hot or cold; as on the con-ary, neither doth a hot nor a cold temperament ertainly and neceffarily demonstrate a plenty or states in the inflance ts is not perpetually a sufficient cause to determine e temperament either hot or cold; as on the conary, neither doth a hot nor a cold temperament creainly and neceffarily demonstrate a plenty or aucity of Spirits, as is manifest from the instance where iven. So that the temperament is no fure fign of where is a fure fign of the Spirits, nor the quantity of the pirits a fure fign of the temperament; and there-emplar ore of purpofe not without just cause, these things ome to be confidered and examined as contradiinct, if we will procure a certain and inconfused nowledge of them:

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Fourthly we answer, That although it were grand, that the implanted heat is subjected in the imlanted Spirits, yet notwithstanding that heat is not t, for a stended nor remitted according to the fole plenty, or pethan r paucity of Spirits : for the Spirits howfoever fuffiently copious, yet if they be too much fixed, torid, and as it were frozen; they exhibit not any nplanted heat worthy of confideration. As for exhatapic mple, the white of an egge fwelleth with copious mpa,2 pirits, yet are they fo benummed, and the inward eat is thereupon fo fmall, that it obtaineth not the pred Spur prmation of a chicken, unless it be first excited by etism acubation, or fome fuch other heat : therefore we gman b hay lawfully conclude, that a confideration from he want of Spirits is sufficiently distinct from the onfideration of a cold implanted temperament, alrough the objected argument doth feem to infus-

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#### T: As ate the contrary. Moreover, from this fourth artiare: cle of our answer, there refulteth a fourth affertion of mmatu the effence propounded, Namely, ung in

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That beside the distemper and want of Spirits, a certain benummedness of them must be added as a diftinct part also of the effence of the disease. This benummedness of the engraffed Spirits appeareth chiefly by the defective nutrition and aversation from exercife, which proceed not primarily (as we have proved above) from any defect of the influx of the It is also manifest from hence, because all brain. those things which drive out that stupefaction of the Spirits, although they do not altogether drive it away, yet they conduce very much to the cure of this difease; as exercises of any kind augmented by degrees, frictions, anointings, &c. and things inwardly taken, of a heating, cutting, purging, and gently opening quality. But that this benummedness is fuffiently diftinct from the want of Spirits (befides that which we have faid in the 3. article of our Anfwer is fufficiently manifest from hence, because an excelfive excitation, contrary to a benummednefs is often Theb conjoyned with a penury of Spirits: as it commonly CEXCIE falleth out in a Hectick feaver, in diffolving fluxes, and the like difeases, in which howfoever there be a want of Spirits, yet no benummedness is consociated; but on the contrary, that vehement excitation and propenfity to motion must be restrained.

AGAN Diff On the contrary, copious Spirits may confift with The a benummedneffe, as in Wheat or Meal. For although it may feem to have but little Spirit, because vecante the Spirits of it do yet lurk in their fixation and benummedness; yet indeed the Spirits do abound it Mereof it, and may be fummoned out by a fimple fermen. whole, tation, and excited to a manifestation of their activit

#### v: As ftrong Beer made thereof doth plainly delare. In like manner juyce newly preffed out of mmature grapes, is very mild and pleafant, contaiing in the mean time plenty of *Spirits*, which aftervards the due fermentation being finished, reveal hemfelves in generous Wine.

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Let us conclude therefore, that the benummedless of the Spirits in this affect deserveth a particular nd distinct confideration.

#### CHAP. VI.

#### Of the Part first affected in this Disease.

E have already propounded the first Essence of this Disease, it remaineth now that we enquire after the first Subject in which that Essence is radi-

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The heart and the brain do here feem rightly to e excluded, for the reafons before alledged, the reetition whereof for brevity fake we fhall omit.

The Liver and the Lungs are not as yet exemped from all fufpition of this fault, we will therefore xamine these bowels apart, and first we demand, Whether the Liver be the fubject of the first effence of his Disease?

The principal Argument is for the Affirmative, ecause this Difease may seem to proceed from a itious sanguification, the Shop and Work-house whereof (at least in probability) the Liver is suppoed to be, but that a vitiated sanguification is the first

first origine of this difeale feems to be made mani- Wegen feft by many figns. First, because this difease for Offici the most part followeth after many other great dif- windin e fes, either acute or chronical, which in great mea- farmi fure have beforehand weakned the fanguifical vertue theb of the Liver. Secondly, Becaufe this dileale doth thele not only depend upon outward, but inward cau- manne fes. namely, the vitious humors. - And feeing the rate vitious humors are generated in and with the mais notbe of blood in the liver, the first effence of this affect the liv feemeth to be referred hither. Thirdly, The Liver though is perpetually observed to be bigger than ordinary folely in this affect; which manifeftly witneffeth the Liver necelfa to be affected. Fourthly, those internal Medicines is gent which have a faculty to purify the blood, are requi- as, the fite to the cure of this difease, and being exhibited, that a are found to be very profitable. Fifthly, The mif-Culari fion of blood from the veins of the ears (which is the car not the meanest help to vanquish this affect ) doth ties in more than sufficiently argue some fault to be in the ceffiny blood, which feemeth to be afcribed to the conftitheir a tution of the Liver, in as much as it doth fanguifieftrait cate. These Arguments have to far prevailed upon thefeb fome very famous Phyfitians, that thereupon they cutre o have attributed the first effence of this difease to the them, Liver alone." 

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But we conceive that these things may be fufficiently answered, if we shall first grant what can be further, or what hath already been rightly faid concerning this matter, and then diffolve those things which are inferred by bad and invalid confequence.

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First, Therefore we grant that the mass of blood is vitiated in this affect, and that from thence is conveied a continual suppeditation to the disease. We

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Want We grant alfo for the prefent, that the Liver is the ale to: Difficine of fanguification : but we deny that every ratell vitiofity of the blood doth depend upon the vitiated anguification, conftitution of the Liver. For first, verue he blood may be corruped by unwholfom aliment, e doth he Liver in the mean time remaining found; in like d can nanner, if the first concoction in the ventricle by any ingin :ause whatsoever be rendred imperfect ; yet it cantemat not be fully corrected by the second concoction in isatif he Liver be that bowel never fo found. Befides, al-Life hough the generation of vitious blood fhould be dinary olely ascribed to the Liver, yet the other parts should eline neceffarily concur to the confervation of that which diand is generated, as the Kidneys, the Spleen, the Paucreerequir as, the Womb, &c. yea, and it feemeth undeniable, hibited that all the parts which the blood washeth in his cirhemil culation, do varioufly alter it, whilft according to hich " the capacity of the fubject they imprint their quali-) dot ties in it : for they are natural agents, and act by nein the ceffiry, and continually without any fulpenfion of contre their actions or intervenient pauses, unless they be anguit estrained by some predominant power : therefore if ed upon these be ill affected, they give a greater or less tinon the cture of pollution to the blood which paffes through them, as may be seen in a contagion, gotten by an fetotil external contract communicated to the inward parts. Moreover, sometimes a great pollution from efuffici the other difeased parts is infinuated into the blood, n be fur the liver in the interim being fafe, as hath been fomaid contimes observed in opened bodies, that have perished le things by a Dropfie, in whom the Liver was found to be equence fufficiently found and whole. Moreover, We grant ofblood that the faults of the Blood do frequently derive hence i their beginning from the deprayedness of their fandilea guifical

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guifical conftitution of the Liver, & that that depraved conftitution is an affect of the Liver. But we deny this to be the fame Difease whereof we now treat, because it differs from it in the whole Species. For that fame depraved conftitution of the Liver is alike common to men of full age, to Boys and Children; but this difeate is folely apropriated to boys and infants. Again, We grant that a vicious conftitution of the Liver may by generating a corrupt blood be a common cause, and foment the augmentation of this affect : but we deny that to be the Difease it felf, whereof we now speak, or any part of the first effence thereof. For it is one thing to produce a common caufe of a difease, and another thing to be of the first essence of a disease. We deny also that to be the continent cause of this disease, or to be a sufficient cause of it self alone, or to be alwaies a cause. For the vitious conftitution of the Liver, of what kind foever you will fuppofe it, doth not produce this affect in those that are come to ripenels of years, nor perhaps always in young boys: and this is our answer in general to the argument : we proceed now in a like method to the confirmation of it.

First therefore, we grant that this affect doth often follow other Difeases, be they either acute or chronical, but not so much because they had hurt the sanguifical constitution of the Liver, as because they had left the outward parts cold and benummed, the ingrafted Spirits exhausted. Although we may easily admit the vitiated liver to be able to foment the evil by reason of the depraved fanguification.

Secondly, We grant that this affect doth not only depend upon outward caufes, but also upon inward, namely the faults of the blood it felf; but that

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treat, Izca. Thirdly, We grant that the mole or fubftane of the Liver is augmented in this affect, but we deny that to be the first essence of the Diseale, for the reasons above chearled, where we reject the organical vices from the rimiary effence of this evil. Yet we admit this and the ike difeases in a lecondary estence of this affect, as we hall see hereafter.

Fourth'y, We grant that internal Medicines can poth alter and purify the blood, but in the prefent Afect they conduce to the cure, in this regard principaly, because they facilitate the distribution of the blood to he outward members, attennuating the thicker, and gtobe utting the viscous parts thereof, and because they also o that o impregnate the blood with a copious and benign Spito bea it, whereupon it happens, that the implanted Spirits ales a f the parts before languithing are cherifhed, augmented nd excited. In the mean time, we acknowledge that th not penels eneral benefit which accrews to the whole body by the idthis urging of the blocd, by fiedge, vomit, urine, or any epro- ther wayes of evacuation. Only this is it which we firm, that the more specifical part of the cure is n of IL. rought by way of alteration with the medicines aforeoth ofhid, as we have intimated already. ate of

Fifthly and laftly, We grant that the opening the eins in the ears doth fomewhat attenuate the blood, and onduce to the renovation of it, as allo to the diffribuon of it to the external parts, and the withdrawing of from the internal parts opprefied with too much plen-, and in that respect very much to advance the cure : it we deny that it can from thence be rightly infarred hat the first Essence of the difease is radicated in the Liver.

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Liver. And thus we suppose we have satisfied the reafonsbrought for the confirmation of this opinion. We will now produce some arguments that seem to perswade the contrary.

The first is this, The first Effence of a Disease doth Specificate the Disease. But the vitisted languifical conflitution (however it be conceived) doth not specificate this Disease. For seeing that this Disease doth appertain to infants onely and children; it behooveth them who adhere to the contrary opinion, to defign some certain way of the depraved languifical Constitution of the Liver, which may be proper to the tender age alone, but no depravation of the fanguifical Constitution of the Liver can be imagined, which is not also common to those of ripe year. If therefore the first Effence of this Disease should constit in that, this Disease would at least fometimes be observed in those of ripe years, which notwithstanding hath never been hitherto observed.

Secondly, The subject of the first effence of a Disease is so long affected with that Effence, as the Disease continueth. For neither can the Disease Exist without its Effence, neither can that Effence wander from one part to another : If therefore the Liver be the subject of the first Effence of this Disease, then should it be affected thorowout the whole progress of the Disease; which newertheless doth not seem credible, seeing that the Livers of those who have died of this Disease, and have been diffected, have excepting the augmented bulk thereof, been seen inculpable in respect of the other conditions.

Thirdly, If the Liver be the subject of the first Efsence of this Disease, necessary it is, that upon the dayly increase of the Disease that should be more grievously and evidently afflicted, and before death certainly it should be marked by some manifest signs. For seeing

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that every Difeafe is contrary to the nature of that pare it befiegeth, and doth daily more and more damnify and empair it : And although the beginnings of Difeafesare many times obscure, yet in process of time (especially if they continue till the laft day of life) they imprine most evident marks in the parts primarily affected ; Io that it can scarce be avoided, but that upon the opening of the body, they will be apparent to the first fight : although allo when an enquiry is appointed into fome Chronical Difeafe, by diffection of the body that perifhed by it, the finding of it out be grown difficult by reason of some other intervenient Diseases, or otherwite complicated : Yet the part first affected is ever observed to be grievoully and manifeftly hurt. Seeing therefore in those whom this Disease hath destroyed, the Liver is oftentimes found, excepting the augmented bulk, or at least not confiderably hurt, it will be to infer, that that bowel is not the subject of the first Effence of this Disease.

Fourthiy, If the liver were the subject of the first efsence of this difease, ir should labour under a cold and moift diftemper, and also under a penury and benummednelle of fpirits, as is fufficiently manifest from what hath already been spoken. But in this present affect the liver doth not always labor under a cold diffemper, nor with a penury and stupifaction of spirits. For in this affect the vital blood being sparingly distributed to the outward members, it must needs be superabundantly powred upon the bowels, especially the brain and the liver; and feeing this blood which is circulated thorow the bowels to near the heart, is made very hot and full of spirit: as even now issuing out of the fountain of the vital spirits, it is impossible that it should permit a cold diftempere F

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distemper, or any defect of spirits to be in those parts, which it watere h with fo copious an afflux. ficult

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Fifthly, In this affect we often behold the face to be wel coloured, & the cheeks rundy, which can learce happen in a cold diffemper of the liver, if it be of any continuance.

Sixthly, From a bad habit of breeding blood in the liver; a fufficient reafon cannot be rendred of the fymptoms proper to this affect, a Catotrophy indeed, of a vitious nourifhment, and an Atrophy, or a defective nourifhment, may many times, and perady nure not unjuftly be aferibed to the fault of the liver : but an Alogotrophy, or a difproportional nourifhment cannot immediately be referred to that bowel. For the liver maketh the blood equally and without difference for all the parts; neither is it liberal to one part in the difpenfation of it, and referved to another. Moreover the debility of all the mufcl\*s, the diflike of exercise, the affectation of reft, feemeth to have no correspondence with the Liver, wherefore neither do we acknowledge the Liver to be the firft feat of this difeafe.

Seventhly, This difeafe in ftrong children is cured fometimes only by exercise, play, ftirring and rubbing of the body; by which means the heat is summoned to the outward parts, new spirits are railed up; the stupifaction of them is chased away, and the aliment is with a more plentiful benignity drawn to the outward members, which benefits without doubt are more properly accommodated to the outward parts then to the Liver.

And this question being thus folved, we proceed to the other; namely,

Whether the Lungs be the subject of the first Essence of this disease.

The symptoms which seem to perswade the affirmative, are the frequent narrownels of the breast, the difficulty

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ficulty of breathing, an afthma, a cough, the inflammation of the Lungs, the hard swellings of the Lungs, the impofthume in the Lungs and the Ptifick. First, The narrownels of the breaft doth not prefently arife from the very beginning of the difeale, & therfore cannot be attefted to be of the first Essence of this discale, in like manner the difficulty of breathing & the aftma do not perpetually accompany this affect, and therefore an indication of the part first affected cannot be borrowed from them. Thirdly, the cough is sometimes present, sometimes absent, and is often times varioufly intended and remitted, till the effence of the dilease perfifteth in the fame ftate ; which alfo happeneth from very many of the aforelaid fymp-Fourthly, An inflammation of the Lungs doth toms. not frequently moleft the patient, and when it invadeth, him, it is an acute and not a chronical difease ; as this whereof we now speak, so that we cannot lawfully conclude any certainty of the first affected part from a lymptome fo unufuall and fo Fugitive. Fifthly, Hard fwellings of the Lungs, little fwellings, imposthumes ; yea, and bunches may precede, aflociate, and follow after this affect, but these diseases are altogether of a different kind from that we now speak of ; yea, and are common as well to men of ripe years as to children and infants : moreover, the Ptyfick doth not usually fupervene unless after a long continuance of this affect, as being far from the first Essence of this Difease; and that it may manifestly appear to be very remote from the first efteem of it, fo that can confer little or nothing to the finding out of the part affected. Moreover, those infeparable and vulgar fymptoms of this Difeafe, as the impotency of the external parts to motion, and the inequality of nutrition, can by no reason be deduced from the affected Lungs : and therefore we cannot admit this bowel F 3

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bowel for the first seat of this Disease. And thus at length we descend to point out the parts first affected. The

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The special marow illuing out of the Skull doth feem to deferve the first place : The second, all the Nerves produced by it; the third, all the membranous and fibrous parts unto which those Nerves are carried along. And in these parts we affirm the first effence of this difease to be rooted, neither do we think it needful to joyn other parts with these. For the foltness, loolnefs, and Atony of the whole Spine without the Skull, of all the Nerves arising from thence, of all the Fibers of the Universal Body, and by that means an inability to motion, a flothfulnels and affectation of reft, which bewray themselves from the very beginning of this affect, do abundantly evince these parts to be effected with coldness, defect and benummedness of Spirits; and from hence it comes to pals that they are extenuated and afflicted with an incompetency of nourichment. For they do somewhat communicate their benummedness to the tops of the Arteries, whereupon the Flux of blood that is distributed unto them, fuffers diminution; and because they are cold, and labor under a defect of Spirits, they impertectly concoct the affuled blood, to that there is a necessary that they must be unduly nourished, and less than the other parcs, and by confequence be extenuated. Therefore we justly and deservedly ascribe the first effence of this Disease to those parts alone.

Yet it may be here doubted whether the bones may not allo be numbred among the parts first affected, seeing that certain tumors of the bones may be observed presently after the first invasion of the Discase in divers places, but especially in the appendancies of the Bones to the Wrists and tops of the Ribs, where they are conjoyned oyned with the griftles of the Stern?

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We answer, That indeed it cannot be denied, but that he faid tumors of the bones, both in respect of the enreafed greatness, and also by reason of the vitiated figure are really and truly Difeafes, and therefore we grant that the bones must be referred to the primary or secondary effence of the Difease : but that they do not pertain to the primary effence of the Difeafe is manifeft from hence, Because the faid tumors of the bones depend upon the first effence of this Disease, and suppose the pre-existence of it. For they spring from the unequal nourishment of the parts which is a Symptome of the first effence of this Disease. But here the inequality of the nourishment can depend upon the first effence of this Disease, shall more fully be declared in its due place ; namely, where the reason of the secondary effence is to be rendred. We will only here thew that those fwellings of the bones are rightly deduced from the improportionate nourishment, to wit, when in respect of the reft it is too much augmented in the fwelling parts. That is proved by this argument, Becaufe the protuberant part of the bones are altogether of the fame Specics with the other parts of the bones ; whereupon it is neceffary, that they come out by the fame way of gene . ration, by which the reft are augmented and encrease. Therefore sceing that the other bones are augmented by nutrition, that is, by the intro-fumed aliment, and the affimilation of it, certainly we must judge that these bones also acquire their augmentation by the like reafon (although without reason, measure and proportion) You will fay, That tumors are usually generated not of an alimentory or good, but a corrupt and vitious juyce. True it is indeed, that this is for the most part true, but as true it is that it is onely for the most part true. For fom : F

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fonte tumors fwell from a legitimate and alimentary juvce, as caruncles or little pieces of flefth, knobbed fwellings, and perhaps fome hard bunches, but even thefe fwellings do alfo differ much from the prefent ftanding out of the bones. For those tumors which we use to call excressences, have fomewhat in them without the habit of the part and in the whole kind belide nature : but these tumors do not grow without the habit of the part, neither do they include or contain any other preternatural thing befide the fole magnitude difproportionately encreased, and by that means the vitiated figure of the parts. For otherwise these fwellings should not be of the sime Species with the reft of the Bone, to which they are continued, but that is repugnant to the experience of the fences.

If therefore it be granted that fome tumors (even among those which are altogether preternatural, and confift without the habit of their body) are generated of alimentary juyces, certainly much lefs hard is it to be underftood that these swellings of the bones are generated and formed of the legitimate matter of the bones, by the inherent nutritive faculty. And this is clearly confirmed by this, becaule the bones according to their fimilary nature are by no means legitimately produced by an illegitimate matter, that is, an indisposed and difagreeable matter to the other fimilary bones. Ex qualibet ligno non fit Mercurius, Every natural agent disposeth the matter before it can introduce the form. It is neceffary also that the matter fo disposed be legitimate. Now the matter of the fwelling bones is manifeftly disposed; for otherwise it could not actually receive the specifical form of a bone. Moreover, that these tumors of the bones are generated by the nutritive faculty is likewife evident, becaufe in all our body there is CSC.

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ot any other offifical vertue, befides that nutritive Failty inherent in the bones themselves, because also ness tumors are generated and augmented by the introimed aliment, and affimilated by the bones themselves: though perhaps in respect of the whole Bone this reeption of the aliment may be unequal, and a sufficient ause of error in the nutritive faculty, whereby one part f those Bones may be too sparingly nourished, and anoher part too plentifully even to a tumor.

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#### CHAP. VII.

#### Of the Secondary Essence of this Disease.

He first and Radical Essence of this Discase, and also the parts first affected being explained, now in the next place the Secondary Effence ; namely, that which immediately followeth his Disease, offereth it self to our examination. And ere we must refresh the memory by an intimation of hat threefold Constitution already afferted, the Naural, the Vital, the Animal, and thorow these particuar Conftitutions, shall our examination proceed. And rft we will confider the Naturall Constitution. This s we have taught above, confifteth in the Temperament, ommon qualities, the plenty and disposition of the Naural Spirits, in the Organization and continuity : now ve have already proved, that the first Effence of this afect is radicated in the Temperament, and in the plenty nd disposition of the Natural Spirits: but the other parts

#### parts of this Conftitution, to wit the common qualities, the Organization and the continuity do yet remain to be examined.

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By Common Qualities we understand in a manner the tal I fame which some others have called the Modos Materia. net tr and others, Qualitates Secundas. Now we call them cation Common, because they are not reftrained to any one Elea leare ment or Form ; but in some fort may expiate and range ne be thorow all the Bodies, and for the most part affect them i keen more or lefs. Of this fort are denfity, rarity, confiftence, 14 60. fluidnels, tenacity, friability, laxity, tension, (or rather e mean tenfity, that the habit may be diftinguished from the ince. action) witheredness, swelling and flifness, foftness, hard- md in nels, Imoothnels, roughnels. But it is not our meaning, 1, 100 exactly to reckon up all and each of the Common Qualities, not to profecute those already rehearled, further then Part, the prefent occasion shall require. the P

The Tone or Harmony of the Parts doth feem to refult in Form fome Common Qualities mutually embraced among similation themfelves, For the Tone of the Parts properly confifted and the eth in a due tenor and mediocrity between certain opportive fite Common Qualites, as between thicknefs and thinnefs, and the Common Qualities, as between thicknefs and thinnefs, and the common Quality to either of the extreams, then there is a new such the fore do here feem to be enquired after concerning the theory fore of the Parts ; the first, whether this Difease of the the total to the extreme do belong to the feed to the faults of the Tone do belong to the feed to the faults of the Tone do belong to the feed to be and the total tot

As concerning the first, It will be unnecessary to run thorow the particular Parts of the Tone leverally, it will be sufficient to examine those that seem guilty of the sufficient crime,

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ins, first, Therefore we meet with an evident loofnels of tinte Tone in this affect : But this looinel's differeth both n the infirm coherence, and likewife from the Parawith cal resolution of the Parts: for the infirm coheunia, ce or weakned stifnels of the part is eafily made an them afion of the loofneis, because in such cases the Part MER fearce be fretched forth , but a part may at the fame image ne be both loofe, and likewife fufficiently fliff, as may them feen in the strings of Instruments, which if you ilter, id down the pins, they become loofe, although in man time they forgo not the tenancy of their fubm the nce. And in diffected bodies we have frequently obshud ved the loofe parts themfelves to be fufficiently stiff; eming), and that fometimes in this affect. Wherefore this and inclusions a diffinet quality from the vitiated flifneis of hether art. Neither doth it less differ from that resolution the Parts which happeneth in the Paralytical Memo the less. For the dead Paliy first confisteth in the depraved anna imal Constitution : But this loofness is rooted in the confit atural Constitution. For here is no Palfy present eather in opportelpect of motion, or in refpect of the sence of the hind rts : Neither is the Brain in this Difease primarily it setted, as we have already demonstrated. Moreover, isan ht there is fuch an exceeding looinels of the Parts first gibs efted in this Difeafe, is a thing fo confpicuous, that ing t : judge it a superfluous employment to offer proof dedt creof. For it is obvious to the very fenfes, and there-Thenes we have lifted it among the figns of the Difcafe. For he for nether it be a Part of the Effence or not a Part, if it be anifestly subjected to the Senses, it acquireth the proiety of a fign in respect of the other Parts of the Ef-IT to the in nce, which are removed from the Senfes. secondly, In this Dilesfe there is not only a loofnels, ily of t t likewife a witheredness and feebleness. Now this

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quality comprehendeth somewhat more then the meer and simple loofness; for it denoteth withall a certain emptiness of the parts, whereby they link down of themfelves. Now such an emptines, and such a falling down of the parts first affected in this Difease are so obvious to the Senses, that there is no need of further proof.

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Thirdly, A foftnefs alfo may be named in the Toze of one to the Parts first affected in this Difeafe. For fometimes it fo falleth out that there is no co-incidence between the mal, foftnefs and the aforefaid qualities ; but that it includacted eth or excludeth fome other thing, as in a fuppurated other Tumor there is foftnefs, but without any laxity of the Tone, any emptinefs or fubfidence. For in this prefent fuppoled cafe, the foftne's chiefly dependeth upon the manner of Termination, and the tenancy of the part being vitiated. But in this affect there is for the moft mentioned : So that it is needlefs to diftinguish it more accurately then by the name only.

Fourthly, There happeneth also another fault in the Tone of the parts first affected in this Difease, and this is an extream inward flipperines. Some perhaps may wonder what the meaning of these words may be, Internal lubricity. We confess indeed that for want of words we have been constrained to joyn this appellation. For when in nature such a quality as hath a true existence hath by the overfight of Philosophers, and also the negleft of Grammarians wanted a name, we have taken fit much liberty to our selvs, as in respect of the great vicinity which it hath with the superficial lubricity of the body to give it the same, with the distinctive Epithet of Internal. In natural bodies therefore we acknowledg a twofold lubricity; one External and Superficial, which indeed confisseth in the superficial and coulity of the

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arts of the Superficies, by reafon whercof the Subject te men centait f it doth eafily flide by other bodies which it lighterly fthem pon without much attrition and refiftance, Now conng down ary to this lubricity, is the Superficial roughnels : but hele two qualities have no reference to this place, be-WICOUS D use they are Organical, neither do they any way beè Tone o ing to the Tune of the Parts. That other lubricity ctimes . hercof we began to make mention, confifts in that inwend ernal, profound and fimilary imoothnels, and equality of inda ae body. By reafon whereof, the whole fubftance of its putte ubject doth eafily flide by the other intro-subient boy of the lies without much attrition and refistance. And to this spreic abricity also there is an Internal roughnels, Now that upon there is fuch an internal fimilary flipperinefs, and fuch a ut pughnels allo opposite unto it may be shewed almost by the minnumerable inftances. For almost all mucilaginous fubhyber tances are flippery, and that not onely in respect of the him utward Superficies, but also inwardly, and in respect of he universal Substance, and every particle thereof; fo uking hat, according to the definition of a fimilary body, and very particle by reason of this quality is made like unup m o the whole, and therefore this quality is internal e, it and fimilary, and diffused through the whole internal ram ubstance of the Subject. In like manner, fuch an inernal roughnels may be observed in unripe fruits, ex-160, È ended thorow their whole substance and Internal flesh. e estitut when they have attained to a just ripenesse then afually, in the room of that roughneffe there fucve taken ravice :eedeth fuch a flipperineffe as we have now deferibed. And here it must be observed, that if these beof the bu re Entry lies internally flippery be befmeared or daubed upon invite the Superficies of bodies otherwife rough, they bequeath id a certain degree of lubricity to them, for the time they idhere ; in like manner being inwardly taken as the flipalityof pery pery juyces, and mucilages of Althea, &. They do alor communicate a certain lubricity to the Internal patlages whether of the Body; yea, and not only to the paffages that re-beyond late to the inward cavities, but alfo more or lefs to very builty Similary fubftance of the parts of the Body, which alfo that the blood wafheth being impregnated with that flippery persufe juyce.

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But this internal lubricity is manifold : oyly or fac, harris watrish, spirituous, faltish, and perhaps earthy. I Inc Creator oyly is chiefly confpicuous in the fat of Creatures, efpe-mourt cially fuch as are young, and in many exprefly Oyls, misen especially the moifter and colder, and also the temperate ; lippery as may be observed in the Oyls of Poppy-Seeds, Pippin- iny and Seeds, the four greater Cold Seeds, Time-Seed, and sis the Oyl of fweet Almonds, and the like. A waterifh minife lubricity is in fome measure found in fimple water it teran felf, although by reason of the fluidnes, it is less fensi- bound ble; also this lubricity may most evidently be taken heben notice of in the mucilages, &c. The Spirituous perhaps forthe doth never happen alone, but it is most frequently mixt with the waterifh, as in the fperm of almost all wome Creatures, and ripe fruits. The Saltish likewife is When o rarely fimple, although there is a man that contendeth, mite it is to be found in falt of Tartar. But the compound month faltish lubricity is frequently obvious, as in Soap and Salt of Tartar diffolved with waterifh and oyly fubitan-The Earthy (even mixt) is icarce worthy of obces. fervation, unless it be in respect that it concurrech to the thickning of fluid bodies, as in white clayish Mud, and Fullers Earth diffolved. But in this place we have City: regard chiefly to that lubricity which is waterifh, as bealm ing that alone which can be guilty of the crime in this in Ma affect we now handle. arts 6

And these things may fuffice in general of the inter-

Ing al or Gmilary lubricity, The next enquiring must be mile thether the first affected parts of this Difeale be affected that eyond a due proportion, with an internal or fimilary lu-"" ricity. And at first indeed it seemeth very probable, ithat nat there is fuch an extream lubricity in the faid parts, lippe scaule moifture doth superabound in them, which ever woureth the faid lubricity, be it conjoyned either with eat or cold. Every one knowing that the Sperm of . I creatures by how much it is moifter than the creatures in the roduced by it, by fo much alfo it is the more flippery : <sup>1</sup> Of a like manner that the young flesh of Creatures is more ippery than that of old. Seeing therefore that humi-Poppinty and lubricity of this kind are fo inwardly converand a d: Seeing allo that in the parts first affected there is with nanifeftly an extream humidity, certainly it may eafly granted that a lubricity likewife doth too much a-Water film pund in the faid parts. And to the production of this be me e benummedness of those parts have no small share. while or the Spirits when they are in their exaltation conequal act a kind of acrimony and tharpness, as may be seen indi y comparing Muft with old Wine, or with Spirit of tenile Vine or with Aqua vite. For the Spirits of Must may uly be faid to be benummed or stupified, if they be ntendet ampan surpared with the Spirits of old Wine; and by how such more they are flupified, fo much more lubricity Soap a (ubitu icy likewife contain, and alfo fo much the lefs of tharpels and acrimony. From whence it is manifeft, that hv of ou hat benummedness and dulness in the Spirits lodging urrech l 1 the first affected parts, doth favor that extream lubriif Ma ity; for that dulnels of the Spirits in the faid parts is e at ha moft of the fame degree with the dulnefs of the Spirits h, 25 th 1 Must. And because the Spirits are defective in the me in th arts first affected, it is evident, that this lubricity is an de inte ver-watrifh lubricity. Moreover, laxity, flaccidity and

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and sofrnels do also seem to conspire. For unripe fruit as they are hard, fo till they wax ripe, they grow fofter and fofter, and withall acquire an internal lubricity; in like manner the parts are loolned by relaxant baths, and together they become more flippery; allo flippery things taken inwardly, as the mucilage of Althea, &c. Do not onely loolen the Parts, but they also make the paflages flippery, for which cale in the pains of the ftone they are drank with good juyces. Again, this lubricity of the first affected parts, seemeth to be much confirmed by this : because in the diffected Bodies a manifest lubricity is observable by the touch ; and if they be squeezed, a mucilaginous kind of blood inwardly befmearing them, is crushed out with the fingers. We say nothing of the skin, which for the most part is flippery in this affect, and is feldom felt to be rough to the touch : but it is worthy to be noted, that extream flippery Medicines either outwardly applyed, or inwardly taken, do usually more hurt then good in this Disease, And thus we absolve the former question, of the manner whereby the Tore of the Parts is vitiated in this Affect. The other now prelents it felf to our confideration.

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Whether the Ione vitiated after that manner as bath been faid, be a Part of the Essence of this Disease?

We suppose here that whatsoever is found to be vitiated in the Body, is either a morbifical cause, or a Symptome, or the Disease it felf; and therefore this Disease either simple or compound, or any part of a compound, and that either primary or secondary.

We fay first, That the vitiated Tone above propounded is not properly a cause of the Discase. And this scarce need any proof. For the faid Tone is a pteternatural Constitution, rooted in the Parts themselves, and by that reason it is most evidently distinguished from a morbin morbifical cause properly so called. For although one Disease may be the cause of another, nevertheless even then it is not properly called a morbifical cause, but a primary Disease, and that other, which it produce h a secondary affect. But every where there is a growing together of them both into one total Disease, the former will be the primary Part of the Essence, and the later the secondary part of the Essence.

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Second'y, We affirm, that the described Tone of the Parts is not a meer Symptome, for it is not under the things fecured and retained, neither can it be comprehended under any depraved action, or any changed quality, not vitiating the action. But that the vitiated Ton: is not comprehended under the things fecured and retained, nor under any depraved action, may by the fame labor be proved by this Reason, because these kind of Symptoms are not indeed Constitutions of the body ; but the faid vitiated Tone without controverly is a preternatural changed constitution, as we have already molt plainly demonstrated. Secondly, That the faid Tone vitiated after that manner, is not contained under any changed quality, nor depraving the action, is fo cleas and evident, that it needs no proof. For laxity and flaccidity hurteth the motion of the Parts, and an extream lubricity is an impediment to the due quickning of the vital Spirits, as shall hereafter be made manifest.

It may be Objected, That some bare changed qualities which are comprehended under the Genus of Symptoms, may also vitiate an action : as the colour changed in the skim yieldeth an unpleasant prospect to the beholders so that it begetteth deformity and defect of due comlines.

We answer, That the changed colour of the Skin in as much as it vitiateth the beauty thereof (which is the proper action of the Skin) doth in rigor (in a large acception) fall under the Notion of a Difeafe. But feeing this action of the Skin is only Objecture and Aa extraand feeing that altered colour doth hurt no Internal action of that individual : Physicians, who in the definition of a Difease, have respect only to the Internal actions of that individual, do utually exclude it from the Claffis of Difeases. Or if the vitiated colour of a part do change in some place to deprave an internal action (which is known onely to happen in the Tunicle of the Eye, called Cornea) the best Physicians do ever reckon it for a Difeale, although perhaps secondarily." But that we may retorn into the way from whence we have a little erred : feeing that the vitiated Tone may hurt, as we have faid, the internal actions, it doth not properly belong to that kind of Symptom, which is wont to be called by the name of a changed quality.

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Thirdly we fay, That this vitiated Tone, feeing it is neither a Morbifical caule, nor a Symptome, and yet is something preternatural, must needs be the Difease it felf. Moreover, the fame is clearly proved by the very definition of a Difeafe. For this vitiated Tone is a preternatural Conftitution, primarily or immediately hurting the internal action ; therefore it is a Disease. For to what the definition is competible, to that also the thing defined is competible. That it is a preternatural Conftitution, is manifest by this, because it is inherent in the folid parts of the body : that it likewife deprayeth the Internal actions, is manifest from hence, because an extream laxity, lubricity and flaccidity of the parts being granted, prefently the agility is weakned, no other caufe approaching, and a certain fluggifhnels deadeth the irritation of the vital Spirits. In agility, the matter is plain, feeing that firm and firetched bodies, other things being answerable are more active, and so on the con-Mary:

#### trary : that the fame thing also happeneth in the dulnels of the irritation shall be shewed in its place, for the prefent we labor to prove no other thing then that the vitiated Tone in this affect is a Difeafe.

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We fay fourthly, That this vitiated Tone in this Difcale is not any fimple affect, having an existence al arc by it felf, but that it is to conjoyned and compounded in those same parts with the primary Effence, that the whole Effence of the Difeate (whereof we dispute) may be faid to confist of many Diseases united together (in themselves indeed fimple, if they be confidered afunder) and therefore that the vitiated Tone is only a part of the whole Difeafe. And this needeth no other proof, then because the first Effence proposed above, and the faid vitiated Tone are both found in those fame parts. For that is properly called a compound Difease, which is produced by many fimple Difeates conjoyned in the fame Part.

Fifthly, We affirm that the vitiated Tone is not only a part of the whole Effence, but fuch a part as hath fome dependance upon the primary Effence, and therefore that it is a secondary part of the Effence.

Before we proceed to the proof of this Proposition, two grants or concessions are to be premised.

We grant first, That the faid Tone may be even immediately vitiated in other caufes perhaps, and likewife by other causes, although that happen not in this prefent Difeafe. For the inherent Tone of the Parts may be primarily loofned in the Animal Confficution, and that fuddenly, as may be observed in the dead Palfy. For the natural tenfity (and not the Animal only) of the Partlytical member is loofned, and indeed fuddenly without any confpicuous intervention of any part of the aforefaid primary Effence. After the fame manner in a Lipothymy 05

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or defection of the mind, loofnels and languishing fuddenly attacheth all the parts. Now we cannot in either of these two causes refer the cause of the loofness to the cold and moift diftemper of the natural Constitution, feeing that cannot be fo fuddenly and fo fenfibly changed. Which let them confider (that we may give warning of it by the way) who will have these common qualities to be always fecond and dependent upon the first alone : yea, on the other fide let them in that cause observe how a cold and moift diffemper doth afterwards by degrees follow that loolnels fuddenly introduced. Again, as for the flaccidity of the parts that may be immediately produced by large evacuations, as a flux of the belly, fweatings, and the like immoderate vents, the temperament being not yet confiderably changed, although we deny not but this may eafily and doth ufually follow. Moreover an internal lubricity may be manifeftly separated from coldneis, though very difficultly from moifture.

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Secondly, We grant that in the prefent Difeafe, the vitiated Tore doth not in any manner depend upon the first admitted Effence, nor that in every respect is subordinate unto it. For first the qualities of the Tone here vitiated, do allo owe fomewhat to common caufes, namely to themfelves, and also to those that are common to the first granted Effence. For extream moistening things by one and the lame operation are apt to produce both too much moisture, and also loosnes. In like manner from violent evacuations, a want of Spirits, and withall a witherednels doth arife. Allo from things too too flippery, either outwardly administred, or inwardly taken, or both, an internall lubricity is augmented, together with a moift diftemper. For there is lo great a connexion of the whole Effence, hitherto propounded WICL

#### with the common causes, that there is scarce any thing which doth augment the first effence of the Disease, but at the same time more or less it hath an influence upon the vitiated Tone.

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These things being granted, We say nowithstanding that in the present affect there is a very great dependance of the vitiated Tone upon the first Effence of this Diferse; for which respect alone we have here re-erred the vitiated Tone to the secondary Effence. If any lift to contend, That the faid Tone in another respect may relate more clearly to the Secondary Effence, because he may imagine that the m primary Effence of every Disease is necessfarily fimilary and perpetually grounded upon the first qualities alone; or because he may conceive that the qualities wherem the Tone consistent a e perpetually secondary, and that they follow the first only (as the shadow doth the Sun) that man may take notice that we purposely decline such questions, least we should straggle into an unwatrantable digression.

It remaineth therefore only that we prove the Dependance of the vitiated Tore upon the first Effence of this Difease to be very great, and that we shall do by parts. We will begin at the laxity. We grant indeed that a laxity may be sometimes suddenly produced, and in that cause a moift diffemper may often follow upon it, Namely, when the laxity primarily dependeth upon the fault either of the Animal or Vital Conflication; but in this Difease, seeing that neither the Animal nor the Vital Constitution are primarily affected, there is a necessity that it must flow from other causes. Moreover, such is the condition of laxity and tensity, that they are obnoxious to sudden alterations. For the strings of a Lute may almost in a moment be stretched and loosned again; the fame thing likewise from some causes befalleth the Fi-

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bers of the Parts. But in this affect the laxity ftealeth on by degrees and flowly ; therefore necessary it is that it mult begin, be ruled and moderated by iome caule leiturely and flowly augmented. Although therefore we granted even now, that the laxity doth own fomewhat to the common caules of the Dileales; yet the augmentation thereof is chiefly reftrained and moderated by the primary Effence of this Difeafe. For moiftning Medicines, although they loofen withall, yet they fcarce loofer more than they moisten, because for the most part they loofen by moiftning. Seeing therefore that the common caules of this D.seafe do flow into the Tone, chiefly by the Mediation of the first Effence of this Difcale : And feeing that neither the Animal nor the Vital Conftitution can here supply the vertue of a caufe, we may lawfu'ly infer that the laxity of the Tone doth chiefly depend upon the first Effence of the Dileafe. This is further confirmed, there is of it felf a certain pronels and tendency of the Body to be through wer, io that the fibers of the parts must needs be loolned by it: Morcover, the defect of the Spirits and the flupifaction of them doth caule a remission of the Tone by diminishing the vigor of the part. Therefore we may conclude that the Difease, laxity principally dependeth upon the primary Effence of the Difease. As for the flaccidity because it comprehendeth the laxity, it springeth from el e same causes as that doth; but in as much as it includeth alfo a subfidence and a certain emptinels, it cvidently dependeth upon the defect and benummednels of the inherent Spirits; the plenty and vigor whereof being augmented, the lank and flagging member is eafily rer dred turgid and iwelling. In the interim, we deny not but that fublidence doth withal depend upon the extenuition and atrophy of the parts, Laftly,

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Lastly, How the flipperincles doth proceed from these causes is sufficiently manifested by what hath been said above.

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That we may at the length put a period to this matter, it may be observed for the higher confirmation of those things already spoken that there is such a strict dependance between the Tone and the first granted Effence, that throughout the whole cure of the Difeafe they are intended and remitted together almost in equal pace. For at first the Children that are afflisted with this affect ; do only go flowly and leifurely whilft the Tone of the parts is yet but a little loofned; but in the progrefs they fearce and with much ado truft to their feet, then they play only fitting, or as they are carried about. Afterwards they can scarce fit upright; and at the laft, when the D.I safe hath attained the higheft exaltation, the feeble neck cannot without much difficulty support the burden of the head ; all which things as they atteft the primary Effenceof the Difease to be gradually augmented, fo also they make it manifest that the vices of the Tone are intended by an equal pace. And so all these things being rightly weighed, we refer the vitiated Tone to the secondary, not the primary Estence of this affect, and by confequence we conclude, indeed the thing that was in question, that that depraved Tone is a secondary part of the effence of this Difeale, The immitted to be the thing the

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### CHAP. VIII.

#### The Secondary Essence of this Disease in the Vital Constitution.

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W E have already propounded that part of the Secondary Effence of this Difeafe which is radicated in the natural conflictation, in as much as it comprehendeth the common qualities; it remaineth now that we examine the organical vices, and the faults of continuity, if any fuch be found out. But feeing that no proper faults of continuity do occur in this affect, and feeing that the organical vices do depend partly upon the Effence above given, and partly upon the vital conflictation being vitiated, it feems neceffary in the next place to fearch into those faults of the vital conflictation.

The vital conftitution is aptly diftinguished into the original, or that which maketh an influx, and the participative or that which is produced by that influx.

The fubject of the original vital conflicution are the Spirits themfelves excited in the blood of the Arterics; You will fay, The heart rather feemeth to b the fubject of this conflication. But is as not fo, for the heart it felt through the coronary Arteries received the vital Spirits brought down with the Arterious blood from its left Ventricle. But it is abfurd to fuppole the walls of the Heart to be the first fubject of the vital heat, and in the mean time for those to receive that heat from the Arteries. We must fay therefore, that the folid fubftance

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the heart is indeed the first and principal subject of his atural and inherent constitution ; but feeing that reciveth the Vital Spirits (as hath been faid) it cannot e accounted the first subject of the Vital Constitution, which is imprinted in it by those Spirits, and continuth no longer than the substance of the Heart is shedded nd besprinkled with the Vital Spirits. For neither can inthe ife fublist in any place without the Vital Spirit, Whereore the substance of the Heart doth so far participate of he Vital conftitution, as it is wash'd and bedew'd with the Vital Spirits, and by Confequence that Contitution in the substance of the heart is not original or offuent, but participative or produced by that influx. Ch s is also contirmed in that, because the vital heat of he blood in the hollow Parts, or Ventricles of the Heart which heat is at least a part of the Vital Constitution) ing that s far greater and more intensive than that which is oft, and within the walls of the Heart, as any man may observe ipon the by the opening of the Bodies of living Creatures, the onfras-Ventricle of the Heart being wounded, and the Finger rt place prefently thrust in. For he shall feel a far more augmented heat in the blood, than in the very fubstance into the of the Vestricle, however it be handled. Moreover the particit vital Constitution is a thing transient and confisteth (as the Philosophers Phrase is) in moru do fieri ; therearethe fore it is rooted. In the moveable and decaying Spirits riteries ; (fuch as the Vitals which are contained in the Arterine fabricit ous Blood) for some Member being cut off, the Life heart it vanisheth almost in a moment, and by Confequence the the vith vital conflicution : but the natural (as we have already from in i finuated) continueth (though not in fuch an exaltawalls d rion as when the Vital remaineth) for a while after i, and i death. And indeed the Life and the Vital conftitution from the is faddenly taken away in the cafe aforefaid not by any (ubftance politive

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polite contrary Caule, But by a meer privation of the Confervant and Continent CAUSE; This is moft evidently confirmed, because the Vital constitution is fuddenly intended, remitted and altered in all the parts in respect of the model or measure of the Vital Constitution, excited in the Ventricles of the Heart; fo in a Lipothymy, the heart fainting, the life of the parts prefently vanisheth, at least languisheth; but affoon as the Ventricles of the heart are refreshed with Spirits by some proper cordial applications, straight way we behold the vital Constitution to be suddenly in some measure repaired in all the Parts. In the suppression of the breath fudden death followeth, the torrent of the vital Blood from the right to the left Ventricle being intercepted. In the opening of a Vein, or in any other immoderate profusion of Blood, there happeneth a fwooning by the fole defect of the Vital Spirits. Therefore feeing the Vital conftitution is transient and fugitive in any of the folid parts, and feeing it dependeth upon the proportion of the vital spirits flowing into them from the Ventricle of the heart, we may rightly infer , that in the folid parts it is not originall but participative. But in the Vital Spirits themselves, by whole function the Vital constitution is diffused and transmitted into all the Parts, it must necessarily be original. For there is no other original subject of it to be found in the Body. 11612 35 1 11 500

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Yet we grant, that the folid fubftance of the heart by his Natural Conftitution (efpecially being watred by the Vital) is the affiftant caule of the excitation of the Vital Spirits in the blood included in their Ventricles, although it cannot be the first fubject of that fame Vital Conflitution, as we have even now abundantly proved. And these things for the present may suffice in general con-

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terning each vital conftitution, the original and the icipative, and to prove that that must properly be ibed to the Vital Spirits, this to the folid Parts, as immediate Subjects of the inherence. Three kinds of is belonging to this Conftitution do ftill await our mination: The two former whereof relate to the ginal: And the third pertaineth to the participative inftitution. The first vice concerneth the Generation the Vital Spirits. The fecond hath reference to the ribution of them: And the third appertaineth to participation of the Vital Conftitution. Of these fhall make enquiry in their order.

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#### CHAP. IX.

be vitiated Generation of the Vital Spirits in this Affect, and whether that fault le a Part of that Secondary Essence ?

He Vital Spirits are first excited or generated within the Ventricles of the Heart; namely, in the very mass of the Blood, and properly they discrinate the Blood in the Arteries from that in the Veins, er that they are generated they are cherisched and conved within the cavities of the Arteries, untill they are stributed into the habit of the Parts. Yea, they are tonly cherisched in the Arteries, but in them also rightdisposed, perhaps some new ones are excited, though ith less efficacy then in the heatt.

This being Pre-admonished. We say first, That in the very Substance of the heart there there doth not occur any fault repugnant to the Gene mean ration of the Vital Spirits, which properly can be in it part even of the secondary Essence of this Disease. Fo this the heart it felf, for his part doth rightly perform his his function in this Difease : and if any impersection happen min in the Generation of the Vital Spiits, it cannot be pro indu perly ascribed to the heart, but to the ineptitude of thushing matter, to receive the form of the Vital Spirits. As the datpat ingested aliment if it be extreamly crude, it may fru ding frate the perfection of a laudable concoction, the Steat He mach being 'otherwife found and faultlefs : So the un mainit apt and unprofitable blood exported to the ventricles outfan the Heart, may render the action thereof imperfect, indine respect of the operation and defect, how sound soever i whit may be in it felf: In which cafe the afcription of third car fault is usually and truly attributed to the indifpole pint, matter, and not to the Heart. You will reply, a Feave main is fometimes complicated with this affect, and at fucliation time the heart doth unapily Generate the Vital Spirits plating But that Feaver is a Difease of a different kind, and by n' Motto means either the whole or any Part of the Ellence of this mine affeft.

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Secondly, We affirm that the lesser Arteries infertee with into the first affected Parts, are in some degree really cooled and benummed by them, through their adjacen with cy and contact, and for that cause they do unaptly conferve the Vital Spirits contained in them, whereupon the Vital Constitution of them is rendred somewhat imperfect before they can be effused into the Parts themselves And this fault of the little Arteries feemeth by very good right to be afcribed to the Generation of the vita Spirits. For although it be not the function of the Arteries to propagate the Vital Spirits according to the first fignification of the word; yet for this very reason that

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t they are obliged to conferve them when they are " Gruppagated, namely, by fuch a conversation as in a manunder includeth a certain continuate Generation of them, alt. It is faults are rightly to be referred to the Generations torm is the Vital's Spirits. For the Vital Confficucion is a many rain transient action ( as we have shewed before) when ich while it lafteth, is in a continual flux and motion, de a su which like a flame, when the continual fomentation . Ast d'reparation of it is suspended & suppressed, is suddenmy in extinguished. Therefore are the Arteries as a contithe Sira e Heart to all the parts of the body, unto which they othem nimit and pour out their contained Spirits; and mides at faults foever of the Spirits happen before the effusiwrith, of them into the habit of the Parts, feeing that they form ceffarily belong to the Original Vital Constitution, on of trid cannot otherwise be ascribed to the distribution of the indipativities, they must be referred to the very Generation of na fem im ; namely, a continuate Generation in the Arteries, da a hereby they are continually preferved from a fudden al Suma inction.

andby Moreover, This fault of the Vital Spirits is the deexcedit avation of the Vital and Original Conftitution, and ing that it is fomewhat preternatural, first hurting the is den tion, from whence the participative conftitution floweth greened. like manner depraved, and feeing that it meerly deindesh upon the primary Effence aforefaid, and is comupply co icated in the fame parts, it will be a part of the fecone reupont ry Effence of this Difeafe.

Thirdly, We fay that the matter of the Vital Spirits. hat impli wit the Blood of the Veins impregnated with his hemieln the atural spirits returning in his circulation from the ft affected parts towards the Heart, is somewhat difad hat ad by them to admit the form of the Vital Spirit. ling to t s it is necessary that the Blood, whild it passeth through

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through the parts affected with a cold diftemper, wa and benummednels of inherent Spirits, must also ther upon be affected with some kind of frigidity, benummer nels, and perhaps with a thicknels and viscous qualit beyond the ulual degree of Nature. For as the bloo doth give a tincture of his qualities to the parts the row which it glideth; So on the contrary, the part themselves bequeath also as much as they can of the qualities to the flowing blood. But here likewife must grant withall that this indisposition in the part first affected (especially when it is light and small) the return to the inward parts, is very mach correcte by their heat, before it arifeth at the Ventricles of th heart, nay that it is sometimes subdued, or if any suc contracted fault remain, it is commonly totally aboli thed by the length of the journey, before the return the Blood to the left Ventricle of the heart, whilft Howeth down by the right, and the fubitance of th Lungs : the fame thing also may be thus confirmed, be cause if that indisposition should continue till the return of the blood to the left Ventricle of the Heart, the whole CIC 18 mais of blood in the Arteries would become crude and imperfect; and feeing that this blood thus abounding with imperfect Vital Spirits should be transmitted from the A rta to all the Parts, it would more or less affect them all ; which very rarely is observed in this Disease. For the head and many bowels, however fome of them are found to be greater then ordinary, yet they feem to be watered with a perfect Vital Spirit. But although, as we have faid the flight indisposition of the Blood may be corrected, before its return to the right ventricle, yet when the contracted fault is great and more confiderable, it cannot be altogether overcome, whereupon the Lungs in this Difsafe are commonly afflicted with the most grievou EYI

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vil. For, when the lefs Spirituous, and therefore the lefs fable Blood is continually transmitted thorow the ings cold, thick, or viscous, in process of time ic must eds more or lefs infect and obstruct the weaker parts of e Lungs; from whence proceed difficulty of drawing cath, a flubborn cough, hard tumors, inflammations, posthumes, and the Ptyfick. Feavers allo, both Ertick and Hectick, may from hence derive their Origine. it feeing that fault may be fuddenly introduced from e first affected parts, it is credible (although we have d the Lungs are often infected by it) that it is for the oft part overcome before the Blood can come to the t Ventricle. And this may be the reason why the ad and the adjacent parts do look fo well and flouriing, namely, because neither the Natural nor the tal Conftitution is hurt in them, feeing that the per-A Vital Spirits generated in the left Ventricle, and diibuted from thence, do excite that fresh colour in the e; when on the contrary the Lungs do oftentimes lar under the faults aforefaid, the vitieuInels of the oud not being corrected before it enter the right Vencle and the Arterious yein.

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Moreover, This imperfect production of Vital Spis in the right Ventricle of the Heart, by realon of the idenefs of the affluent Blood flowing in the Veins, toly appettaineth to the fecondary Effence of this Dife, and must be accounted a part of it: for the Vital onftitution is vitiated, whereupon the actions in the ings are depraved, and it dependeth wholly and in everefpect upon the primary granted effence, neither in e mean time doth it refide in the folid Substance of a Heart, that it fhould therefore deferve the name of a w difeafe.

Here we note by the way, That Phyficians in the curs

of this affect do ever intermingle fuch things with their remedies as have respect to the benefit of the Lungs; and not without reason, seeing that it is apparent by what hath been said, to how much danger that Bowel is continually subject. And this may suffice concerning the faults in the Generation of the Vital Spirits: Now follow the faults of the distribution of those Spirits.

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#### CHAP. X.

The vitiated Distribution of the Vital Spirits in on bo this Affect, and whether it be a Part of the should Secondary Esfence thereof?

"His vitiated diftribution feemeth to confift in three the things: Namely, in the Diminution, Slownels, and the Inequality of it. The defective, and also the flow distribution of the Blood and Spirits, may be feen hich in fome one Part, and perhaps in all those that are first affected : But the inequality cannot be observed in any one, feeing that it refulteth from a collation of a various fwiftnels and flownels, greatnels and imalinels of the tor- mag rent of the Blood in respect of the other parts. The de- air, feet and flowness of the distribution, seeing that they stated depend almost upon the same causes in the present affect, they may be handled together, and feeing those differ the rences are more fimple then the inequality, the handling lober of them scemeth deservedly and justly to be premised. Int w Bur fir & we must grant, that the passages and circula-1108 S in

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ion of the Blood, thorow the first affected parts is not ery difficult in this affect. For although a cold diftemer, a want and benunimedness of Spirits, do seem very ifficultly to admit a transition of the Blood thorow the arts affected, with these qualities; yet indeed other conoyned qualities; as moysture, loosness, laxity, flaccidiy, foftness, and internal lubricity, can at the least conribute as much power to facilitate the paffage of it, as ne qualities aforefaid can oppole to the interruption of . Yea, if you value them by a just estimation, perhaps ney can do more, but we will not in this place affert it, nly we flatly deny the difficulty of the circulation to be reater. For, if we may compare hard bedies with foft, w bodies with straight, moift with dry, flippery with high, we shall easily perceive that the circulation of the lood is much more quick and expedite in those, then in rele. And this is manifest in young Creatures in whom rofe qualities abound, in such as are new born, although te Heart be very tender, the Arteries less firm, the pulicative vertue, yet feeble and weak, yet the passing too nd fro of the blood are readily and eafily exerciled ; hich in those that are older is not accomplished withat a stronger pulle, and an indeavour or a kind of labor the Heart and Arteries. Again, according to the onion of Gilen and Hypocrates, the Bodies of children e most passible ; namely, by reason of their humidity, xity, and softness. Belides, if we observe the formation the chicken in the egg, the matter will be yet more ain. Within few dayes after the incubation the heart the chicken is ferfibly and evidently feen to beat, and begin the circulation of the Blood : but if at the same me we confider the frailty of the Heart it felf, and how eak a coherence there is between the parts of it, till in e interim it finisheth the circulation of the blood acн cording

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cording to the manner of it, fuch as it is : we must neceffarily grant that in that shapeles lump, moisture, and internal lubricity do expedite and facilitate that motion. Some perhaps may object that in these cited cafes the liberty and readiness of the circulation of the blood, depends not fo much upon the moifture, fortnels and flipperinefs, as upon the plenty of the inherent Natural Spirits. For in the Cachexia, Green fickness, and the dropfie, the flesh is very foft, moift, and perhaps flippery, when in the mean time the transition of the Blood is very difficult. We answer, those Bodies that wax tender and foft by a paucity of inherent Spirits, are lefs indifpoled, and more apt to admit the circulation of the Blood then the other parts. But it is not fimply true that fuch bodies which most abound with Spirits do perpetually obtain the most expedite and unrestrained circulation of the Blood : for the Blood is more eafily circulated in Fifh, then in Creatures of the Land, as is manifest by the tender and frail Constitution of their Heart, and Arteries ; yet they enjoy a lefs quantity of Inherent Spirits. But becaufe they live perpetually in the waters, therefore is their flefh more moift and flippery. Whence it most evidently appeareth how effectual the inward lubricity and moifture are to facilitate the paffage of the As for those that are invaded with the Green Blood. fickness or afflicted with a Cachexia, we grant indeed that the circulation of the Blood is difficult in them, yet not only through a defect of inherent Spirits, but by reafon of flubborn obstructions lodging in the whole body. Wherefore it must be granted, notwithstanding the cold diftemper, the penury, and flupifaction of the Spirits, which procure a difficulty to the circulation, that fuch a Mediocrity is imposed upon it, by the moisture, leftnels, and internal flipperinels, that the paffage of the blood

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[83] lood may be reduced to a just, if not an extream faci-But if the moifture, softnels, and inward fl.ppety. ine's be lo confiderable to effectuate an easie circulaon of the Blood, Truly, the diffribution of it through ne parts first affected seemeth to be expected more vife and not more flow. We answer that the facility the transition of the Blood is opposed to the flowness the motion, or to the imallness of the paffage. For a vift motion may be flow, and in a fmall Channel. But efacility is here opposed to difficulty, ftriving, and bor, which in this cafe, if the circulation were diffiilt, fliould happen to the Artery in the passage of the lood. But that the Arteries do undergo some labour in pediting the circulation of the Blood into the first fected parts, shall anon be demonstrated; we only firm in this place that the facility, of the paffage of re Blood doth not fufficiently argue either the fwiftels of the motion, nor the widenels of the paffage. For, wo caufes do chiefly confpire to haften the course of he Blood through the habit of the parts. One is the ptitude of the part recipient, or that through which he blood ought to flow; and this cause is meerly palve and flothful : the other is the impulsion of the leart and Artery, and also of the Arterious Blood coninding to ftretch and dilate it felf. This cause is aive and full of vivacity. For upon the ceffation of is impulsion, the distribution of the Blood will prcntly after totally cease, however the passage may be therwise supposed to be most case, manifest therefore it that this impulsion is the principal and active cause of he fwiftnels and flownels, and alfo of the quantity of the istribution of the Blood. Wherefore those causes hich do any way advance or hinder this impulsion, do ow come to undergo a more accurate examination. FOR H

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Thefe caufes do chiefly concur to excite that impulfion. First, the plenty and activity of the Vital spirits contained in the Blood. Secondly, the perfect foundness of the Heart. Thirdly, The firmitude, heat, and just magnitude of the Arterics. Fourthly, An irritation both of the Heart and Arteries, whether extriniccally or intriniecally cauled. These we will run over in their order, that it may appear in what condition they are in th's prefent Difeafe. First, As for the plenty and activity of the Vital Spirits, we have already shewed that in this affect the imperfect Vital Spirits are frequently excited in the right Ventricle of the Seeing therefore that the Blood tainted with Heart. these imperfect Spirits, must be driven into the Lungs, there is a necefficy the distribution must there become more sparing and flow by reason of the defect of the Again, feeing that the vital blood, as we have Spirits. alfo fhewed above, is fomewhat cooled in the Arteries, which are rerminated in the first affected parts, it is neceffary likewise that the paffage of it through the faid parts must be diminished and more dull,

Secondly, The vertue of the Heart, unless peradventure by accident through the complication of some other Difease, is feldom seen to be vitiated in this affect.

Thirdly, For fo much as concerneth the Arteries, we cannot accufe their condition of any notable detect in reference to their firength. But there is a manifest fault both in their heat and magnitude. First, in their heat, the Arteries inferted into the first affected parts, must necessfarily by their cold diftemper be formwhat affected with the like distemper. For feeing that a diftem-

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per of the parts first affected is active and permanent, it s unavoidable but they must more or less introduce a like quality into the parts fo nearly bordering to one another, For natural agents are bufily industrious to affimilate all Bodies placed within the Sphear of their Activity, but especially such as are circum-ambient and neerly adjacent. But if any man doubt whether that coldness of the Arteries can retard and lessen the curent of the Blood through the first affected parts, let him confider that frigidity is of it lelf an enemy to any kind of motion. For it is the quality of cold by its own-Nature to arreft Violences, and impetuous oppolitions, to condenfate, to induce floth, to superinduce Somnolency, flupifaction, and immobility, and when it. attaineth a more intenfive degree, to congeal and mortifie the parts. Therefore it must needs caft a Remora to the torrent of the Blood waving through the parts affected with that quality. Befides, in the opening of a Vein we have often observed upon the cooling of the member that the Blood hath flowed more flowly and paringly, and if the member be warmed again, or the pulse be excited by rubbing or any other motion or means, that then the Blood floweth again with a more plentiful and liberal current. Moreover, the application of cold things is fentibly effectual to ftop Blood preterniturally burfting out of any part, as on the contrary, hot things do provoke the chullition of it.

It may be objected, That the Pu'se is many times a-Etuated and intended by the cold outwardly opposed; as by the handling and playing with sow, we see that not only the Pulse but the heat also is augmented in the bands of those that sport the mselves with it.

We answer, Cold things of themselves do alwayes moye the passage of the Blood through the habit of the

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parts ; but that by accident they may intend the circulation of the Blood, if at length they provoke the pulles of the Arteries (as in the faid cafe of the fnow it happeneth) to beat ftronger marches. 'But this never comes to pals in this prefent affect. For (as we have already fhewed) the circulation of the Bloud in this Difeate, however it may fuffer Imminution or Retardation, yet it continueth fufficien ly easie and expedite, neither doth any irritation of the pulle arife from thence, as anon we shall perceive more plainly. For feeing it is manifest by what hath been faid, that the Arteries reaching to the first affected parts, become more cold then ordinary, or is mact, we may eafily beleive that they become likewife more flender; fo in any cooled member we fee the Veins and the Arteries become more flender then they were wont to be; and it cannot be denyed, but that actual cold doth ftraig' ten the Veffels. But it is more then probable that a Potential coldness ( such as perhaps that may be faid to be which is of an inward diftemper ) doth likewife make the Veins and Arteries more flender. So we lee cold Complexions, and also cold and moift, to have lefs Veins and Arteries then the hot. Corpulent bodies, wemen, children, have narrower Veffels, then lean men. or youths. Belides, the very heat it felf is an expansive quality, that it may enlarge the Veffels, and cold a contractive quality, that it may reftrain and firaiten the Veffels. Finally, one of us observed that upon the diffection of the Bodies perifhing by this affect : He hath iometimes found the Veins, and the Arteries, tending towards the first affected parts to be of an undue flendernels : but that hole Arteries called Carotid's, and the Jugulary Veins were dilproportionately ampl fied ; and it is credible that this might have been perpetually obferved, had they that opened the bodies minded it with an atten-

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tentive contemplation. But this we peremptorily afm not, but leave it to future inquiry : in the interim eing that it sufficiently appeareth by what hath been id that the circulation of the Blood, in the first affected irts is diminished, it is likewise agreeable to reason, that te Veffels also of those parts are straitned. End leeing hat the left Ventricle of the Heart, doth pour so great quantity into the Aorta as may suffice all the parts, and sing that fo many parts primarily affected do sparingly p that blood, it is very probable that it is distributed ith an unufual liberality thorow the other parts, and amely thorow the Head and Liver, and therefore the effels of these parts are somwhat dilated and amplified. Concerning the leined circulation of the Blood in this fect: We add this exper ment only, a ligature being ound about the arm or thighs of a young boy grievcully prmented with this Discase, the Veins did not so eafily ple that wel beyond the ligature, neither did the habit of the art full of Blood appear in that place fo fwell'd and coistwith oured as it usually doth in those that are found. From We its thence apparent it is, that the transition of the Blood nave kl norow those parts is more dull and less plentiful, then it ties, wo inght to be, as a riverstopped by a dam or wall doth fooin mit. er or later overflow the Banks, according to the various CADADOR wiftnels and magnitude of the Torrent : So likewife dacon t happeneth here, the retiring 'of the Blood thorow the aiten the Vein to the inward parts, is intercepted by the force of th: diffe he ligature, which it it were violent, would in a fhort He had ime fill the Veins, and the habit of the parts beyond the nding to igature ; as we see it to happen otherwise in sound Pe -Bender ons; but because in this Disease it fil eth them flowly . and the and very dully, we must conclude that the circulation of i; andi he Blood in those parts is extreamly leffened and flow, ly obler ind that the Arteries inferted into those parts are more with cold H4 stit

cold and flender then they ought to be, as we have most abundantly proved, that the Arteries of the first affected parts are vitiated by a defect of just magnitude.

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Fourthly, As for the irritation of the Heart and Arteries (which perhaps is the principle cause of many differences in the pulses) it is manifeftly found to be weak and ineffectual in the Arteries of the first affected. parts. We purpose not at this time to discourse of the nature, causes, differences and effects of irritation in the pulles; only we observe in general that it may be either natural or violent; and that each of them may be universal or particular, and withal may arise either from within or from without. And laftly, that it may be exceffive or defective : In the handling of the present Discale it will suffice to touch upon the particular Irritation of the Arteries, and afterwards to accommodate our Discales to the present businels. 1. Therefore, we aifirm that the Arteries impel the Blood into the substance or habit of the parts, by a certain labour and contention; and that the parts which receive that Blood do make some refistance and opposition : that by reason of this conflict the Arteries are Irritated to make ftronger refistances or pulfes ; and that that Skirmishing is of fo great moment to fortifie the pulle and render it more vigorous, that when it is weak, the Pulle can fcarce be ftrong: but where the contention is somewhat more increased, yet so, that it doth not overcome the opposition of the Arteries, the pulle. becomes more ftrong and lively, provided that no impediment from some other cause doth intervene. This we might illustrate by divers instances, but we will exemplifie it only in a few : in the winter the pulles are more full, hard, firong and constant, then in the fummer ; but it is certain that at that time the outward parts of the body being bound up with cold, are more firm and lefs

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that the defect of a due irritation, proceeding from the weak refistance of the parts which receive the Blood from the Arteries, doth diminish the vigor of the pulfes.

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Secondly, The fame is yet more evidently feen when the Pulle is augmented by the motion of the Body; for in any violent motion almost all the Muscles are stretched, by rea on whereof they fomewhat more refilt the passage of the Blood; hereupon the Arteries are provoked to contention, their heat is encreased, and therefore more nimble, ftrong and full Pulfes are emitted.

Thirdly, As the inflamation of a part doth fentibly ir-ICT Cal ritate the Arteries thereof, fo it exciteth a more vehement aps in Pulle and caufeth a more liberal Flux of the Blood. The med fame may be laid of pain.

Fourthly, Hither also must be referred the bruising of any part. For a bruifed part doth difficultily receive the Blood flowing to it : hereupon the Arteries provoked, they beat more ftrongly, and fwell the bruifed part refifting them into a tumor. This might be demonstrated by many more examples, but we conceive thefe to be very furficient and latisfactory.

Moreover, It must be noted that the parts caused by the reception of the Blood in the Arteries, may be yery great, and yet not sufficient effectual y to irritate the Arteries ; in which cale it rather remittech and d.fturbeth, then er crealeth or facilitateth the force of the torrent of the Blood. For thit oppolition of it felf interrupteth the channel of the Blood thorow the fubstance of the parts ; but becaufe it doth withal irritate the Ar eries to emit more lively firekes, it quickreth the totrent of i by accident. Wherefore we are here compelled into ano her involuntary digreffion, by diffinguilling

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in the hishing between the reliftance of the part that irritates 32 at which doth not, or doth very little irritate the inances already alledged will fuffice for the former, and to plain the later we will add a tew.

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First, Therefore there is a relistance that totally This pprefieth the torrent of the Blood. Such a one is caufter d by a ftrong ligature, which doth altogether interalts pt the pulse in those parts beyond it, neither yet doth irritate the Arteries on this fide of it, becaufe it o-DCOTON! there promethall the force of the Artery beyond the Ligare and doth wholly break off the action the eof. The me is seen in the parts mortified with cold, or by oer causes corrupted with an inflammation ; and perbiv it hence ups in fome hard fwellings, contractures and fome con-The med wounds.

Secondly, There is a refistance preffing down the ing rteries even by the compression of the Arteries, and in the is happeneth in a ligature indifferently bound. Alin the compression of an Artery by some tumor in re, they tities he adjacent parts as in a raw fwelling; alto in a comreflion from any outward caufe, many things which ficter elong to the lying down, on the right fide especially, nd the left are referred hither; fo in tumors on the ght fide, the lying on the left fide is many times endud with the least patience by the compression of the und parts by those that are swelled, &c. and this comreffion however it refifteth the circulation of the lood, yet it doth not feem much to irritate the Artees, because it doth no les intercept the very pulfificave force, then it Liminischeth the action thereof. Alhough perhaps it may fometimes irritate in the Lungs y reason of their vehement heat, just as it useth to do in sing and inflamed parts.

Thirdly, There is a refiftance in part repressing the circulation circulation of the Blood, but without compression of the Arteries, nor yet totally suppressing them, nor very much irritating the Artery. Such an one occurreth is obstructions caused by cold, flow, thick, and moist humors, which although they may somewhat retard the free passage of the Blood, yet they provoke the Artery very little, because at the same time they superinduce a certain benummedness in them, at least a cold diffemper, as also in the Blood which they contain. The same almost may be said of paralytical members, but that in these a benummedness is more evidently introduced in their Arteries, and the channel of the Blood is less retarded in them.

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Moreover, We affirm fecondly that the parts first affected in this Difease do not sufficiently irritate the Arteries, by which the Blood is diffributed through them. For although in these parts, both by reason their folidity, and also in respect of their coldness we grant some kind of refistance, yet it is extream feeble and flow, and very little provoking. First, because in those parts a moift is conjoyned with the cold diffentper, which of it felf temperath and qualifieth all manner of provocations. Secondly, because there is a penury of inherent Spirits, which otherwile, where they abound, are wont to cherish the vigor of the Arteries, and the blood contained in them. Thirdly, Because those parts are loose, weak, and lost, and therefore more prone to receive with facility that which the Arteries fend in, than to exafperate them by reliftance. Fnd that the Arteries do not convey the Blood by any vigorous and confiderable force into these parts, is manifest by this fign, becaule after the influx of the Spirits, and the Blood, they still continue loofe, foft and feeble, when on the contrary ftrong Pulfes are wont to render

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parts otherwife weak, full, fwoln, and ftiff, on a fud-1. Fifthly, because the first affected parts have in them imilary lubricity. For as the fuperficiary or external pricity suffereth any thing to pass by, without attrin: fo alfo the Internal or fimilary lubricity facilitates duth ; circulation of the Blood, fo that the paffage is acany remplished with very smal opposition. We conclude " a consectore that the pro-irritation of the Arteries is in this ftemper fease deficient; and therefore that the Arteries are very dly and ineffectually excited to ftrengthen the pulle. that Having at the length weighed all things which we pounded concerning the caufes which actuate and ance the Blood in his circulation, it fufficiently apireth, that the circulation of the Blood in this affect eafie and expedit enough, but that it is leffened and leth dully thorow the parts first affected, both by reaof the fluggifhnels of the Arterious Blood containin the Artery of the faid parts, and allo because of the ective heat, and flendernels of those Arteries; and fily, in regard of their ineffectual irritation. And let fe things suffice concerning the two former faults onging to the distribution of the Blood in this affect, mely, the diminution and flownels thereof. It teniainin the next place to examine the inequality of that tribution. The contract of a section of the section of the

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#### CHAP. XI.

#### The Inequality of the Distribution of the Blood will in this Affect.

T His inequality is to be effimated by a comparifon of the greatnels and fwiftnels of the current of the blood, made in divers parts. For if the circulation of the blood according to a Geometrical proportion be either equally small and flow, or equally great and swift, that must be judged equal by the scope of the present enquiries : on the contrary, if in some parts it be little and flow, and in others great and swift, that must be reputed unequal and disproportionate. And this is the State of the present disquisition.

It is manifest by what hath been faid, That the distribution of the blood thorow the parts first affected, is extreamly sparing and flow: It remaines therefore only that we consider whether it be transmitted thorow the other parts with a quicker and more plentiful motion.

We have already affirmed that the root of this evil is not fixed in the Heart it felf, and that this Bowel of it felf is not primarily ill affected in respect of the left Ventricle thereof. It is credible therefore, that the Heart (unless perhaps some other Disease be conjoyned or supervene) doth rightly execute his function, and expel a sufficient quantity of Blood, for our turn by every stroke into the Agria. Seeing therefore (as hath been already

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dy proved) that the blood is niggardly dispensed from : Aorta into the first affected parts, a superfluous porn of it must needs be distributed into other parts nor affected : for otherwise the Aorta should not sufficily discharge it felf, nor disburthen the Blood received m the Heart, but it would be obstructed and oppreswith the plenty thereof ; and this repletion upon e-Blany flight occasion would fly back, even to the left Vencle of the Heart, and there kindle a Feaver. And we int indeed, for this very caule, among others, that in s Disease a Feaver is easily and frequently produced. t feeing that the Feaver is another Difease conjoyned, I separable and different from this, and seeing that this fease very often happenith without a Feaver; it must ds be granted, that by how much more sparingly the od is distributed to the first affected parts, by fo much more is it plentifully conveyed to the other parts, eaft in the absence of the Feaver. For seeing that quanof Blood, as we faid even now, is extruded into the rta, as may fuffice the whole Body, and feeing all of it ift be distributed into several parts, it most plainly folis, that the lefs is transmitted into one part, the more illpenled into another. And thus it may be perceived tthe inequality of the distribution of the Blood is erred from the fole diminution thereof, in the first :cted parts above afferted, (at least probably) namely, m the fmall and flow current of the Blood thorow the its first affected, there may be rightly collected a more ick and plentiful ftream of it, into the inward parts not affected. Now let us fee whether the other appearances ating hither are correspondent to this Discourse. First, It feemeth manifest by what hath been alledg-

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that the Head, the Brain, the Liver, and the other wels, are not afflicted with that cold diffemper, nor that

that stupifaction and penury of inherent Spirits, wherewith the parts primarily affected are oppreft. For the bowels and the faid parts do not receive their Nerves from the Spinal Marrow, without the Skul, but they are involved in the fame condition with the other parts, Moreover, those parts, as far as we can judg by the touch are (at leaft outwardly) moderately hot, and as far as we can guels by the fight they retain their native and florifhing colour, befides they are more full and flefhy, then the first affected parts.

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Moreover, Children afflicted with this Difeafe have an late oc indifferently good appetite, they do not ill concost the intro-fumed aliment; and about the Head they retain their fenfes very acute : they fee, they hear, they taft, IN WEA atil a ti they finel as fubrily as others, and as for their wir, they Thir many times furpals those of equal years with them ; unless an impediment from some other cause. All which ALL SULL things put together do abundantly witnels, that a cold ALCE C. 間位的 diftemper, nor a benummednels or penury of Inherent Spirits, hath none, or at leaft a very fmall predominancy Com in those parts. These things being granted, we must likewile needs grant that a more liberal distribution of **山** []] the Blood is dilpenied to the faid parts. For as for the hear, we have already shewed that that doth both am-Bill 107 plify and ftir up the Arteries to lend torth a ftronger pulfation; and we have also noted above that the plenty of the Spirits, doth not only cherith the pulfificative force of the Arteries, and conferve the vigor of the Blood contained in them, but that it doth fomewhat enliven and excitate both of them, and that by fo much the more eftectually, by how much the lefs the inherent Spirits are 4; 001 affected with a ftupifaction. # Ch:

Secondly, unless those parts were w: tered with a more liberal circulation of the Blood, they would become more iotr.

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foft, loofe and feeble, then they are even as the parts inft affected are observed to be: For upon the defect or languithing of the Pulle in any part, the part prefently becomes loofe and weak, as it happeneth to all the Parts in a Lipothymy. On the contrary, when the Pulle beats trongly, the Part whereunto it belongeth, is seen to be omwhat rigid and swelled. For a full Pulle doth prefently ill up those parts which were before funk down by mptines; as the Lypothymy being driven away, and he Pulse being reftored, the Parts of the Body, which vere before loose and languid, are not only well coloured, ut full of vivacity and turgid : seing therefore that note Parts are not affected with that softnes; loosness and weakness, we must conclude that they are actuated ith a full Pulse.

Thirdly, The very argumented magnitude of these arts, in comparison of the parts primarily affected in this isease, doth witness, that they are more liberally fed ith their aliment, namely, the Blood (which is reputed e common and last aliment of the Parts) for otherfe fearce any fufficient reason can be imagined, why, nen the first affected Parts are so extenuated, they build be (especially the Brain and Liver) in so good a ndition, so full and so plump. The same thing is conmed by the lively colour of the same parts. For if the life languith in any part, somewhat of the fresh and iable colour presently retireth from that Part.

Fourthly, The Arteries called *Carotides*, and the Juary Vein, which belong to the Brain, and the parts out the Head are observed to be very broad in this af-; but the Veffels tending to the first affected parts to anduly flender; from whence we may clearly infer, at the dispensation of the Blood to those Parts is unal. And here we intreat and besech those who have an opportunity to open inch Bodies as this affect hath deftroyed, that they would accurately contemplate whether the fwelling Arteries inferted into the fwelling parts of the Bones do more liberally, and more commodioufly transmit the Blood into those, than into the other lefs nourifhed parts of the Bones, and whether the Arteries of those parts are more broad than of these. Although indeed we contess that this enquiry is most difficult, both because of the flenderness of those Arteries, and in regard of the obscurity of their infertion, and also in respect of the hardness of the Bones.

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Fifthly, Hither also belong things hurtful and helpful, for children afflicted with this Difease are manifeftly benefitted by rubbings, motion, and various agitation of the Body, by exercises, ftrengthning Oyntments, and the like means which raife the heat in the Members on the right fide, and the other parts primarily affected, and irritate the Pulles, and augment them after any fort, whereby the diffribution of the Blood may be more nearly reduced to some equility; with the contrary things they are damnified. In like manner such Medicines which promove the difpenfation of the Blood to the first affected parts (as those which are moderately hot, benign and familiar to Nature, and so attenuant, incident, and de-obstruent that at the fame time they do not in the least degree waft, but cherifh and augment the Spirits) help very much towards the cure of this Difcafe; the contraries do either produce or foment it b"ing produced. All these things being confidered, we must conclude that the distribution of the Blood in this affect is irregular and unequal. And thus at length we have finished the disquisition of the faults in the deftribution of the Vital Blood ; we now proceed to the examination

examination of the faults, if any such there be, of the Vital participative Constitution in this Discase.

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## CHAP. XII.

The faults of the Vital participative Constitution in this Affect.

WE have already faid that the Origine of the Vital Conftitution is grounded in the Arterious Blood, and especially in the spirituous part thereof : but because the solid parts also do somewhat truly participate the nature of Life, we justly ascribe unto hem the Vital participative Constitution.

Now this Conftitution confifteth in Three Things

First, In a certain union of the Arterious Blood with the substance of the solid parts through which it affeth.

Secondly, In the Vitall heat excited in those arts.

Thirdly, In the enlivening and exaltation of the Naural Constitution, and of all the Natural faculties of hole parts.

First, As for that union of the Arterious Blood, it suft be justly reputed the first part of the participative life. For the folid parts are therefore faid to particiate of the Nature of Life, or the Vital Constitution, cause the Vital Spirits are contained in them. For

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Life cannot confift without a Vitil Spirit. Therefore when the Vital Spirit is distributed in and with the Arterious Blood to the solid parts through the Arteries, and these parts do suck in that Blood into their substance, it comes to pass, that the said parts are co-united with the Vital Spirits, and so they participate of the Nature of Life.

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Moreover, Seeing this union is not permanent but transient, and consisteth in motion, it seemeth to confist in the confluence and mutual embracement of the inherent natural and influent Vital Spirit: but the conditions which are requisite to make this a natural concourse, are,

First, That it be in all respects moderate, and not impetuous.

Secondly, That it be in all respects ftrong, and not feeble and flupified.

Thirdly, That it be friendly and peaceable, not hoftile and Turbulent; that it be gentle, not tumultuous; that it be neither too flippery and fmooth, nor too rough.

Fourthly, That it end not in any kind of diffipation of the Spirits, but rather in the appealing and apt difpolition of them for their return into the Veins. More fuch conditions might perhaps be added; but becaufe they very little belong to this Difeale, we thall here fupercede any further examination of them. We onely note, that the nutual concourfe and union of the Vital and natural Conffitution by their Spirits, doth not occur in this affect, with that activity, vigor and complacency, as it ufually doth in found Bodies. And this fearce needeth any proof, feeing that it is manifeft by what hath been faid above, that not only the natural conflitution of the first affected Parts doth labor under a cold

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the wold and moist distemper, a defect and benummedness its in of Spirits, but that the Vital Blood it felf is also someblunce what damped and stupified in the tops or ends of the adwir Arteries, before it can be conveighed into the first af-Naur fected parts, so that that union must needs be perforned without either a sufficient vivacity or pleasure. Ent be For when the vigorous Vital Spirits do meet together with the Natural Spirits no lefs vigorous, they are heine united with a kind of curteous ftrife and delightful concondition tention. Whether, that we may illustrate this matter by oncouris n example, the natural Spirits as a Bride do here alure, and in a manner repel the Vital Spirits who as it vere act the part of a Bridegroom : But the Vital Spiits provoked with their heat, and driven on by the viand m gor of the Pulses do more confidently invade the Naural Spirits, and penetrate into their confines and regions, whilft the Natural Spirits in the mean time not ha however as it were with modelt reliftances repulling nituous: not the affault) receive them at length not without a cerain pleasure. For the very corporal pleasure is estailipute plished upon, and encreased by a kind of amorous strife, ind the principal part of Life it felf confifteth in fuch a d apt dia Ma contention about the Recipocal union of the Spirits; t beau or to that end the Vital Spirits are both generated and there listributed, that at length they may pals through the olid Natural Constitution of the Parts, and may pro-We onti oundly imbue them with their vital power and verthe VIII in not ce ue; but seeing this peneration cannot be effected withbut endeavor and refiftance, it must needs be, that the vigor of that contention and refistance, be either more or lefs according to their copiousness, vivacity and heat of those Spirits that maintain the conflict. Therefore beaule in this affect, both the Naturall and the Vitall Spirits are more cold, fewer, and lefs active; their con-

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concourie and union must needs be dull and undelightful. Moreover, it must be noted in this affect (which alfo we have shewed above) that the permeation of the Blood thorow the first affected parts is so easie and slippery, whereupon even for this reason, that concourse and union of the Spirits in those parts is rendred more flothful, and less pleasant. Besides hot exhalations, although for the most part they are sparingly raised in this affect, yet being raised, by reason of the settines, loosness, and internal lubricity of the first affected parts, they evaporate sooner then is meet, whereupon they leave those parts cold and settie.

Secondly, As for the Vital hear communicated to the folid parts (which is the fecond part of the Vital participative Constitution) that partly depends upon the aforclaid union, or the Incorporation of the Arterious Blood, with the folid parts ; but partly it confifteth in a certain expansive motion or endeavor (like to that expanfive endeavor of the Arterious Blood) excited in the very folid parts. The first is very perspicuous, for the Arterious Blood through the impregnation of the Vital hear, when it is received into the folid parts, must needs with their fubstance communicate their heat allo unto them. The fecond is likewife proved without difficulty, For if the Vital heat radicated in the Arterious Blood confifteth in a certain motion or endeavor of that Blood uniformly diffused, and withal at the same time somewhat restrained, it must unavoidably excite the same motion in the folid parts thorow which it paffeth, feeing that natural causes do alwayes act to the extremity of their power, and as much as is possible by way of affimilation. If any man doubt whether the Effence of the Vital heat confift in fuch an uniform diffusive motion, moderately reftrained and intrinfecally advancing: let him know, that the

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the Effence of heat doth in general confift in motion, or rarifactive endeavor somewhat interrupted, as Sir Tbomas Bacon doth most clearly demonstrate in his Novum Organum. But this I fay, the Vital heat, feeing that it containeth in it felf the true nature of heat, it will be also neceffarily fuch a rarifactive endeavor fomewhat reftrained. But that this heat may be restrained to the Vital; more conditions must be added, which nevertheleis we cannot in this place either reckon up, or accurately fearch into, leaft we fhould run into an unreasonable digreffion : In the interim, that we may have the matter and the manner of enquiring, whether or no in this affect the Vital heat be moderately according to nature, it feemed good unto us to propound these subsequent conditions.

First, That the Vital heat may be called Natural, or according to Nature, it is requifite, that the Origine thereof be Internal; Namely, in the Arterious Blood, and that it be derived to the folid parts, as hath been faid, by the implantation and union thereof; for that any thing may be called Natural, it must needs flow from an Internal Principle, although it be likewife true what things foever do moderately cherifh, augment and excite that Internal Principle, may in that respect deserve this appellation.

Secondly, It is required, that that heat be moderate, not unequally remifs or intenfive, but communicated to the parts in an even degice.

Thirdly, It is required, that it be in some measure unife n, and like it felf in those parts, that rejovce in the same similary constitution, provided that they be equidiftant from the fountain of hear, and after the fame manner affected by some other concurrent and adjacent causes. But in the parts further distant from the foun-14

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rain of heat; yet otherwise, as hath been said, after the lame manner affected, that it may be uniformly diminifhed : And in like manner in the colder parts in respect of the inherent conftitution, that it may be allo proportionably more remis. Laftly, In the parts diversly affected by other caufes, so that one may be much more intenfively hot then another : it is requifite, that between the hotter and the colder part there be found a heat gradually, and as it were uniformly more remifs (if you proceed gently from the hotter towards the colder part.) And even a certain uniformity may be observed in this deformity or disparity of heat, so long as it continueth within the bounds of Nature. For the parts immediarely and intermutually touching one another, are in a preternatural capacity or condition; If one of them be extreamly hot in comparison of the other. For seeing that this Vital heat confisteth in a rarifactive endeavor somewhat restrained, if it be very unequal and disproportionate in theParts bordering upon one another, it will happen, that that part which endeavoreth with yehemence, doth withal endeavor to separate it felf from that which useth no fuch vehemency, and fo that will become a preternatural endeavor, caufing pain: for pain confisteth in the folution of continuity, not yet made, but to be made.

Fourthly, That this heat may not actuate or affift the action of any other hurtful conjoyned quality whatloever. For although in this cale the conjoyned hurtful quality is chiefly peccant, and meriteth the greater part of blame, yet cannot the heat be altogether excufed. For an acrimonious and malignant heat, denoteth other qualities to be conjoyned befides the bare heat, yet the Vital heat it felf, in as much as it exalperateth and provoketh the activity of those conjoyned qualities to a more potent

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whethent deprayation and annoyance, it must be judged rtly culpable of their vitious actions.

Fifthly, On the part of the refistance, moderation is o required, both in respect of the appealing of the irily a rated Vital Spirit, and also in regard of the passage of e Arterious Blood, and finally in respect of the transpipetner 1 ion of the unappealed exhalations.

Sixthly, A certain proportion must be observed be-(if yn leen the expansive endeavor of the Vital heat, and the liftance that reftrains it, an excels therefore in either them in it self is not a fault, but if one be dilpropornate to another, in that regard it must be reputed lty.

Seventhly, A certain harmony and order is obfervaboth in the endeavor, and in the refiftance. For ey do not alwayes proceed in one form and continuati-, but as it were fighting, they are fometimes intended, netimes remitted. And indeed they are chiefly increain the Diastole of the Arteries, where the blood not ing contained in his narrow Veffels, ftrugleth for pre room, and so ftretcheth the Arteries, till a comtent potion of it falleth down into the habit of the rts, and is there digefted ; for then the place doth not mpel the Blood into such straights, but after a short he it defifteth from that impetuolity, and among the iles of the pulfation this motion of the Blood is not : least confiderable. Now that we may apply these ings to the prefent bufinels, amongst all the conions now proposed, the second alone seemeth manitly to be defired in this affect. For the Vital heat is t here moderate, but defective, and more remils than : just and Natural Degree. For feeing that the first efted parts are befieged with a cold and moift diffemper

per, and with a penury and benummednels of Spirits, milithey must neceffarily (as we have already demonstrated) men fomewhat rebate the heat of the Arterious Blood before end it is transmitted into the substance of them; where men upon those parts participate a more remiss degree of Vital heat than is due unto them. And this shall suffice men concerning the communication of the Vital heat to the salar Parts.

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Thirdly, As for the laft part of the participativ my Life, which indeed dependeth upon the two former min and which is the first in the intention, though the lafeting in the execution of Nature; we lay, that it is in fom which fort the end both of the Original Vital Constitution safet and also of the distribution thereof, and finally of the Fifth aforefaid union and heat communicated to the parts pier For the Vital Spirits are not excited in the Arteriot and Blood for their own fakes alone, neither are they diftri grow buted into the parts, and united to them only for their are own advantage; but chiefly, that they may enlive and dignific the inherent constitution of the foli Parts, and fo actuate and promote their faculties. FC as the heat of it felf is only porentially visible, unlefs be irradiated with light, fo those inherent faculties attracting, retaining, concocting, fecreving and for ming, are dead as it were, and meerly potential, whe they are deprived of the vivification and erogation the Vital afflux, This is most clearly confpicuous in Lipothymy; for upon the defect of the Vital influx, a those faculties suddenly fail, decay, languish. But fe ing all the faculties are established upon some constitu tion, which is both the cause and subject of them, might be demanded in which Conftitution of the par Dine it is grounded ? We answer, in respect of the potent And al Nature they are radicated in the Natural Conflic

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when the set of the Actuated and Elivened Effence, that they eable pend likewife upon the Vital influx. And we declare is when general, that the participative Vital Conftitution, ich we have already afferted to confift in Three hall of ngs, conjoyned with the Natural Conftitution, is the nature al and adequate, both caufe and subject of all those fa-

inter the solution of the faculties aforefaid which occur in minutes affect.

ally di First, The fashioning vertue here erreth by an unequal the pereging out of the Vital Blood in divers parts, as we return we discoursed above. Hereupon the Head and the Lithey discoursed above. Hereupon the Head and the Lithey discourse of an unmeasurable bigness; the first affected ly for the ts are extenuated, the ends of the Bones stick our, and any enhance intermets the Bones themselves, which are otherwise is the braight, wax crooked.

chies. Secondly, The Concoctive faculty is weak in this e, unle leafe, and in the first affected part by reason of the infacults rent cold diftemper, the penury and benummedness of ag and : Spirits, the brittle and flippery union of the Vital ential, a rits with the Natural Constitution, and by reason of trought : feeble imprinted Vital heat.

Thirdly, The Attractive, Retentive and Expulsive culties, seem not to recede much from their Natural and builtion; yet the Attractive is somewhat more flow en ought to be; the Retentive, by reason of the innal lubricity is somewhat weaker, and the Expulsive of the more vehement for the same Cause,

And thus at length we have difpatched the faithful imination of the faults of the Vital Conftitution in this

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this affect. The Animal Conftitution should now undergo the next disquisition, but that some faults of the Natural Conftitution; namely, the Organical faults thereof, which have some dependance upon some of the recited faults of the Vital Conftitution, do challenge this place, as most proper themselves.

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#### CHAP. XIII.

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#### Of Organisal Faults of the Natural Constitution and in this Affect.

S Eeing that the Organical Faults in this Difeafe be long to the Inherent Conftitution of the parts thole indeed by the Law of juft Method fhould be immediately after the fimilary vices of the fame Conftitution; but as we have noted above, the Reafon and Caufe of them muft be derived from the faults of the Vital Conftitution lately mentioned, and therefore we day are conftrained to premife the examination of thefe, and to referve the confideration of the other for another place.

The Organical faults in this affect are fitly reduced u these Heads.

First, To the extenuation and leannels of cettain parts, namely, the parts first affected.

Second!y, To the unreasonably augmented magnitude of some parts, as the Brain, the whole Head and the Liver.

Thirdly, To the tumors or lanching out of certain boncs

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mes, as of the Bones to the Wrifts, to the Ancles, and e ends of the ribs.

Fourthly, To the bowing of certain Bones, as it freently happneth to the Bones of the Cubit, and the in Bone, sometimes to the Bone of the Thigh and oulder.

Fifthly, To the pointed figure and narrownels of the ht.

And these faults are reckoned beneath among the mptoms and figns of the Difeafe, not because they are eed meer Symptoms, but because they are obvious to M : Senfes, and fo do fitly supply the place of signs, both respect of the parts of the Effence of the Discale more ply retired, and also in respect of the hidden causes reof. For whatfoever is perceived by the fenfe, and beis it felf representeth fomewhat else to the understang that is obscure, hath the formality of a fign. For ind these faults are parts of the secondary Essence of the feafe, feeing that they are the vitious Confficutions of Organs depraving the action, and have a dependance on the other parts of the Effence of the Difease. The common cause almost of all these recited affects ms to be an uneven or disproportionate nourishment Alogotrophy of the parts. Now this dependeth chiefly on two causes in this affect. The first is, the unequal

erent Constitution of the parts irregularly nourish-The disparity between the inherent Constitutions the first affected parts, and the Head and Bowels canbe fo well collected by what hath been already faid, : that it may deferve a further inculcation. The laft ile, which is indeed of equal moment, is the very unal distribution of the Arterious Blood into the parts venly nourished. That the Blood is unequally dibuted in this affect we have already shewed, here we only

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only infer that that must needs produce an unequal nutration trition of the parts. All Creatures the more liberally real they feed, the more fat and flesh y they are unless fome. The other impediment doth intervene; but if the due quantum at tity of aliment be substracted, they grow lean, and are which daily more and more extenuated. Why should we not seen suppose that the same thing happeneth in the Parts of state (reatures? the Blood, or at least four what contained the in the Blood, is acknowledged for the last aliment of all the the parts, where therefore that is liberally dispensed to be one part, and sparingly to another; certainly, it is no should wonder if one part be excessively augmented, and another extreamly extenuated. But these things may suffice are for in general. In particular,

First, We affert, that the first affected parts in this doe Discase do daily wax lean, and fall away. Proof of this ched affertion cannot be reasonably expected, seeing that daily m, to experience yieldeth an ocular demonstration of it. But aygin why those parts are so extenuated, that may require some reasons, and we offer these.

The first is deduced from the primary effence of the late B Difease; namely, from a cold diffemper, a penury, and a Sing in-activity of the inherent Spirits in the parts aforesaid, at the For by this means the attractive, retentive and conco- that the faculty, do execute their functions in those parts hards unduly and ineffectually.

The fecond is brought from the loofnels, foftnels, and t, or a internal flipperinels of the fame parts; for hereupon the expulsive faculty is too much irritated, the breathing is too cafie and diffipative, the circulation of the Blood is too flippery, the retentive faculty through the weaknels o it, parteth with the aliment too foon, and with too much facility : and this very thing almost hapneth here in thefe parts, which befallerh the Guts in a Lyentery. How

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owfoever it be, the expenses exceed the incomes, and confequent those parts are extenuated.

The third Reafon arifeth from the unequal diffribuon, and indeed defective in the first affected parts, of hich we have already superabundantly discoursed. Secondly, We affirm, that in this affect the greatness the Head, and especially of the Liver, as also of the contain is unreatonably increased. Sometimes the Palfie the Head is conjoyned, which neverthelefs we fuppofe be of a different Species, and no part of this Difease : though we grant, that this affect may fometimes give rafion to the supervening Hydrocephalus. Moreover, we m/ ve fometimes feen the Confumption being fuper-indu-I upon this affect, and long continuing alfo, the Face. d the parts about the Head to be somewhat extenuate fore death. But this was produced by the Confumpn, not by this Difeafe we now treat of. But that we thit iy give a reason of that greatness unmeasurably increain the Parts aforesaid. We note, notrogoro y requ

First, That the parts belonging to the Head and almost the Bowels, do receive the Nerves from that part of e Spinal Marrow, which is included within the Skull, d therefore that these parts are not necessarily subject that unhappy condition of the first affected parts. herefore no reason doth compel us to affirm, that these gmented parts are either affected with a cold diftem-, or a penury and dulnels of Spirits, or that the at-Aive, recentive or concoctive faculties are thereupon iared, and by confequence that those parts are totally empted from the first cause of that extenuation which falleth the parts first affected. A na to daphini orol

Secondly, we observe, that neither loofnels, nor flacity, nor softness, nor internal flipperiness are predonant in those immeasurably augmented parts, and that

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that these qualities (as it happneth to the first affecte parts) do not yield a more irritated expulsion then is re quifite, so that the exportation should be feared to ex ceed the importation, which we have shewed to befa the extenuated parts.

Thirdly, We observe, that the Blood in his circulation, by how much the more sparingly it is distributed to the first affected parts, the more liberally it doth wate and nourish these parts. This we have already proved and it is needless to infert more arguments to that purpose. These things therefore being observed the Reason is plain, why the parts aforesaid are unmeasurably and irregularly augmented. For if the attractive, retentive and concocctive faculties be not weakned in them, according to our first annotation, and the expulsive be not immoderately irritated according to the second, and in the interim, if sufficient aliment be dispensed to them according to the third, the bulk of them must needs increase beyond proportion.

Thirdly, We affirm that the protuberancies or fwellings of the Bones in the Wrifts, Ankles, and the ends of the Ribs do vitiate the Organ in a twofold respect; namely, in respect of the greatness, and also of the figure. The parts vitiated in both respects are obvious to the Eyes, and therefore we shall superiede all further proof.

But why are the Bones stretched out after that manner is those places ?

Truly it is very hard to render a Reason thereof, neither perhaps dare we engage our selves by promise to give satisfaction in all respects herein to the curious. Therefore instead of an Answer we dedicate to the Reader these subsequent Observations as not altogether unprofitable.

First, The Bones in many do agree with the fubftance

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of the Bowels. For first they confist of a certain fimilary matter fevered from the preter-fluent Blood, no: needing any laborious affimilation, and feem to admit a most easie nutrition till they arrive at the exaltation and highest pitch of their encrease; Moreover, they feem to be nourished until by age they are brought to an extream drinels, and they feem not to be obnoxious to any confiderable extenuation; fo the fubftances of the Bowels are finilary being joyned together by the feparation almost of the Blood alone, and they likewife eafily encrease, and are difficultly and rarely extenuated. Secondiy, The Bones are nourished almost after the fame manner, as the Parenchymata or substances of the Bowels : Through the Arteries they receive the blood's through the Veins they amandate and convey away the superfluous portion of it, and instead of Vessels of he third kind whereby the excrements are expelled, hey are furnished with Cels and Cavities. Some perhaps may doubt of the Arteries of the Bones, because fo lard and rigid a part may feem unapt to admit any ulfation of the Arteries within it : we grant indeed hat the Bones-in regard of their hardne's and ftifnels re less apt for the pulfation of the Arteries, and there= ore we acknowledge that they admit not within them ny notable ramification or branching of Arteries; but any man will from thence infer that no Arteries are imitted into them, truly herein he must expect our plolute denial, for they are living Parts, they are nouthed, they grow, and they exercise the Attractive, Rentive, Concoctive and Expulsive faculties. Again , tey receive the B'ood, which they cannot do but by e conduit Pipes of the A teries, and this is manifest r the bloodinels of them, when the Bones of Living reatures are either broken, or any other way divided.

In

In young Creatures the spongy substance of the Bones, and the very Marrow is fenfibly perfuled with Blood, and the greatest part of their Cavities is filled more with Blood than Marrow. In elder and greater Crea+ tures you may observe both Veins and Arteries through the Membranes, enwrapping the Marrow; all whichthings do fufficiently prove that the Blood is diffributed into the very Bones. But wife Nature (who in the conformation of all the parts, doth most exquisitely and aptly proportion all things) forefeeing here that the Veins and Arteries could not conveniently be extended by a longer carnification through the substance of the Bones, by reafon of their hardness, the cafteth that vaft number of them, fome being as fmall as hairs, into almost inconspicuous little holes in the Bones. But if you foundly boyl the Bones of greater Creatures thefe Orifices of the infertion of the Veffels, may very eafily be perceived in the outward superficies, if you remove the Skin enwrapping the Bones. But let this suffice concerning the Veins and Arteries of the Bones, feeing that this matter is fomewhat incoherent with our scope. As for the Veffels of the third kind, seeing that the excrements of the Bones were not about to prove altogether unprofitable, nor could commodioufly be expelled out of the Body; Nature, instead of a Vessel of the third kind, hath made certain Receptacles (namely Cavities and Cels) into which the would exnocrate and caft alide the excrements namely that fat part which is altogether unprofitable to furnish the Bones with nourishment. There are some who suppose the Marrow to be the principal nourifhment of the Bones, but very inconfiderately, feeing that the Marrow, as we have faid, is altogether unapt for the generation and nourifiment of the Bones, for the bones are not only most hard

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hard and folid, and naturally of a white colour, but they config of a certain earthy and clammy fubstances which conditions differ very much from Marrow. Again, Marrow cannot by any art be fublimated to the firmnels of a Bone. Moreover, Marrow melterh, and is diffolved with a moderate heat of the fire; but the Bones endure the most ardent flames of fire without any melting. Besides, Boil the Bones as long as you please, they refolve into a gelly, not into the substance of, or like Marrow. Again, Bones may be worn to powder, fo cannot Marrow. Certain therefore it is, that the marrow is not the Aliment of the Bones, but a kind of excrement: or rather secrement of them, profitable indeed, and therefore to be preferved in those receptacles. For the Bones being otherwife dry, cold and rough, would be unapt for motion, were they not moifined and made flippery by the exundations and exhalations of the Marrow, and cherifhed by their gentle hear. All these things are confirmed by this single experiment. In young Creatures the greatnels of the Bones being confidered, there is lets Marrow in the Bones, and more Blood than in greater Creatures. In the Embrionsthere are scarce observed any figns or appearances of Marrow diftinct from the Blood. But after the birth, the medullary substance is daily augmented, and it is visibly perceived to be leffe and leffe intermingled with the Blood; again, in the maturity of years, the Bones are filled almost with pure and fincere Marrow, without any confiderable commixture of Blood ; but in the approaches of old age, it is credible, that the Bones are lefs and lefs watered with the circulation of the Blood and perhaps the Marrow it felf upon the fuspension and ceflation of the nourifhment is rather augmented than diminished; in which respect the propounded experi-K DICELE

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ment must be peradventure limited. Thirdly, the Bones (the Teeth perhaps excepted) cannot want their Nerves, at least very little, neither are they supposed to be otherwise sensible, then by reason of the *Periostium*, or the Fibers thereof fastned into the Orifices of the Bones. In like manner the substances of the Bowels seem to obtain that dull sense which they posses, rather by the Membranes and vessels, then from their own substance.

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From hence we collect, that the Bones in this affect are not much otherwife affected, than the substance of the Bowels in respect of nourishment. We have already flewed, that the Bones are not to be reckoned among the first affected parts, as likewise neither the Parenchymata: onely we here further affirm, that all the Bones univerfally confidered, are not perhaps lefs sparingly nourifhed in this Difease, than they usually are in found Bodies; tor if they be nourished by way of coaugmentation, or joyning together, as the Parenchymatt are, and with fuch facility allo, if they poffels Arteries and Veins delated unto them, and Cels and Cavities to receive the Blood, if they be not in the number and condition of the first affected parts, and if they receive not Nerves from the spinal Marrow; it is very credible that they do duly receive, laudably retain, and perfectly concoct their Aliment. Moreover, If you will confult experience, Children afflicted with this Difease, a regard being had to their age, and the magnitude of their parts, weigh heavier than others for the most part, as we have fometimes observed, which very thing feemeth partly to be afcribed to the greatness of the Bones. Although in this cafe we with more frequent, certain and accurate observations, which others who are befriended with opportunity may oblige the world withall : in the mean time we suppose in general that

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that the Bones are not illiberally nourifhed in this Difeafe.

Some may replys That what bath bitherto been foken doth concern the nouri (bment of the Bones in general, but that they yield not a reason of the protuberances in them.

We deny it nor, but seeing that these faults of the Bones depend upon their unequal nourifhment, as we have already proved, we supposed it would not be unprofitable to propole some reason of their nourishment in general : now we draw nearer to the aforefaid fwellings of the Bones. And we observe, Secondly, That those tumors of the Bones are not of a different kind in respect of the other parts of the same Bone, but that they are parts altogether fimilary, and of the like kind with the reft, and that they are not faulty in refpect of the fimilary Constitution, but in respect only of their greatness and figure.

From hence it followeth thirdly, that these fwellings are not produced by any illegitimate matter of the Bones, or by any other vertue than the fame by which and from which the other are generated.

Fourthly, That the faid fwellings are produced by an unequal nourishment of the Bones, as by a more liberal nourishment of the swelling parts, and a sparing nourishment of the other parts of the same Bone. And these Three last Observations we have already abundantly proved where we treated of the affected parts.

Fifthly, We observe the Epipbyses of the Bones in the Wrifts and Ankles, and perhaps in some other places, to be more foft and fpongy than in the other parts of the fame Bones. And peradventure they receive into themselves greater Arteries and Veins, although indeed we are not yet fully affured of this. The tops

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tops of the Ribs are also much more for and fpongy than the other parts of them. From whence we infer that those more fost and spongy parts of the Bones may more cafily and freely admit the circulation of the Blood, and therefore be more plentifully nourifhed than the reft of the parts of them. You will fay, That fostnefs and sponginess of those parts is observed to be as well in healthful Children as in those affected with this Discale. We grant it, but yet it must needs be, that thole parts which are of a more compacted lubitance, and with dificulty admit the circulation of the Blood, must be affected and obstructed upon lighter causes then those parts that are more open, and more eafily receive it. But the Blood in this affect is transmitted to the external parts fomewhat more cold, vifcous and thick then it ought to be; therefore those parts which are unapt to admit the circulation of it, those are more apt to be somewhat obstructed, and less liberally nourished.

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But, why also are not those soft and spongy parts more liberally nourished in sound Bodies, seeing that they (as hath been said) do more plentifully receive the Blood?

We answer, Because as in health those parts do in a larger measure receive the Blood thorow the Arteries, fo they remit the same more plentifully thorow the veins which certainly doth preferve them from that excessive augmentation unto which otherwise they would grow. But in this affect the same parts by reason of the coldnels, thickness and viscosity of the Blood, do perhaps more sparingly and more flowly remit it, then it is poured into them, and therefore from that abundance and excess of the Blood, those parts do somewhat increase; whils the other parts of the Bones by reason of the narrowness of the cavity of the Artery, are not perhaps sufficiently nourished with Blood, whereby to obtain an equal

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equal nutrition and increase. And from hence (at least probably) we deduce the inequality of the nutrition of the Bones in this affect. But the condition of the Blood whereby in this Difeafe it is apt to obstruct any parts thorow which it floweth, feems to have a peculiar respect to the quality of the Bones. For in the Bowels, the Lungs excepted, the Blood doth seldome Generate obstructions, as alio neither in the first affected Parts : However it be the Bony fubstance, either because it is incapable of the internal flipperinels, or because the nutritive juyce in the mais of Blood is peculiarly apt to congeal in the parts fo vehemently fixed : or laftly, because it hath in its own nature some affinity with the Bones : we fay, the Bony substance is eafily infested with obstructions in this Difeafe, and thereupon it happeneth to be unequally nourifhed.

The faults of breeding Teeth are likewife to be referred hither, seeing that they also seem to depend upon this unequal nutrition of the Bones. For if the Teeth fhould be equally nourished, they would be of a uniform substance, and would not fall out by pieces, as it here frequently happneth. For the fimilary parts, when they are equally nourished, acquire not such an interrupted and unequal confistence, as to be eafily broken in pieces. Wherefore feeing the Teeth are parts naturally delighting in a fimilary substance, were they equally nourished, they should enjoy an equal and uniform confiftence, and would either continue firm in their gums, or would fall out whole: And there can fcarce any other reafon be given, why they should be broken, and fall our more on one fide, or in one part then another. We grant indeed, that their aptnels to break, may hitherto conduce very much: but we conceive, that even that aptnels to break doth in great part depend upon the unequal nutrition aforelaid. For otherwife the K 4

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the Teeth do usually obtain a very firm, folid and coherent substance; and the truth is, they seem to confist especially in this viscous affect of a very matter. For the Blood for the most part is observed to be more viscous and thick then ordinary, so that this aptness to break off the Teeth, cannot be so easily ascribed to a defect of viscofity in the matter, as it may much more probably to the inequality of the nutrition. We conclude therefore, that the standing out of the Bones, and likewise the faults of the Teeth, do proceed from the unequal nutrition of these parts, arising from a peculiar obstructive disposition of the Blood, having reference especially to the Bones. Now we proceed to the crookedness of the Bones in this affect.

Fourthly, In this affect the Bones are frequently fomewhat crooked, especially the Shin-Bones, and the leffer Bones of the Legs; also the Bones of the Cubit, the leffer of the two long Bones of the Cubits, and the bigger Shink-Bone, fometimes the Bones of the Shoulder and Thigh : fome Joynts also become crooked, fometimes inward, fometimes outwards : the whole Spine is likewife many times bended, fometimes it is wreathed like the letter S; namely, partly forwards, partly backwards, and fometimes partly to the right Hand, partly to the left.

Some afcribe this crookeduefs of the Bones to the bending faculty of them; for fay they, in the tender age of Children, the Bones themfelves are not fo ftiff; ftubborn and inflexible, as in their riper years; and therefore upon the invalion of this Difeafe, they are rendred in fome degree eafily flexible. Therefore they rebuke the Nurles, which too foon commit the children to their Feet, fuppoling, that the Bones are made crooked by the fultained burthen of their Bodies. Others alfo tax the Nurles of imprudence in fwadling them. 副

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the But we cannot yield our full affent in all respects to ic Reasons. And first we flatly deny, that the Bones who Children afflicted with this Disease are more flexible, itomo els ftiff and friable then the Bones of others. For we and a lready proved, that the Bones in this affect do not mon er in respect of their fimilary substance from the tothe es of found perfons. Belides, no man hitherto worthat of credit hath attefted that he hath feen the Bones use lible in this Difeafe. Moreover, if we thould grant finite in this tendernels of years the Bones might perhaps ion of omewhat bended, yet they would not continue fo bent Bonts I lead or wax, but being left to their liberty, they induw ld return again to the proper polition and figure of parts. For they confift not of any ductile matter, and fome force by being thus bent, they would either be broken eleft lie doubtleis, they would endeavour to re-obtain their i, the oner fituation. As for the ignorance or negligence of the fics, although we do not altogether excuse it, yet culde not we justly impute this crookedness of the Bones to etimes a carelesnels. We see the Children of Poor Pcople kenik wordered and handled with lefs care, and fooner comhether :ed to their feet then the Children of the rich, yet Children of Poor People are more rarely afflicted dsand this infirmity, then the Children of the rich. Beleft. , we have known Nurses use all manner of diligence ending vadling them, and every other way laboring to pre-Chilthis incurvation, yet all their pains, otherwife praisern and hy, hath in this respect been successes. Therefore on the nust endeavour to find out some other cause of this degree which kednefs.

le compare the Bone therefore, in which this crookis useth to happen to a Pillar, and not unaptly, seehat when they are crected, they refemble a Pillar; rom thence we deduce a demonstration that illuftrates

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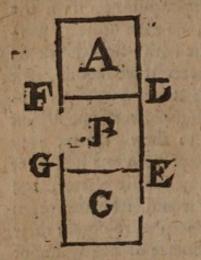
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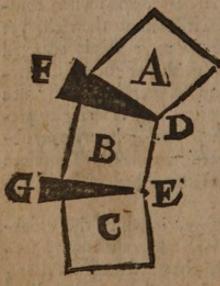
#### ftrates and makes the matter very plain. Let the PA therefore confift of three stones A B C placed over e another. We suppose it such an one as is perpendic larly erected on every fide, and of the same height: therefore you shall fasten in a wedge on the right fide l

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tween the ftones A B throu the line F D, the Head of Pillar; Namely, the ftone will of neceffity be bended wards D, and will make an A gle in D, and the height of Pillar on the right fide will higher than on the left. Inl manner, if you drive in anot wedge thorow G E into ftones B C the gillar will be more bowed, and the angle w be made in E. Now there is the left hand after this ma

the Pillar standsbent to the left hand after this maner.



ABCFGDE, but if y build the Pillar of me ftones, and betwixt eve two, as hath been faid, wedge be interposed one fide, it will not refer ble the figure of a Pill but the proportion of Bow, as by this followin may be perceived.

ow that we may accommodate these things to the ent businels, if the Bones aforesaid be more plentie trea when nourished on one fide, and therefore do grow our this on that then the opposite fide, there is a necessity, that muft grow crooked : For here the overplentibut in nutrition of that fide hath the fame power after the and ale manner to bow the Bones, as the interpoled wedge wint to bow the Pillar, fave that the wedge is fastned onfome places of the fide of the Pillar, and the over-11 13:50 tiful nutrition of the fide of the Bone, is commonly lly made, according to the whole length thereof. For not ra fall liment received into the Bone, in what part it more ally admitteth it, that part it obstructeth: and like OCTION . wedge thrust into the Pillar it extendeth it into an isfall nented length, whereupon the Bones must needs be ed towards that fide which is not lengthened in an I degree with the other. Moreover, if the productifone fide of the Pillar happen only in one or two is thereof, and not in many, as in the third figure, then fo

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to much the nearer the inflexion of it approacheth tot figure of a part of a Circle, or a Bow. But if the faid I dont according to the total longitude thereof, should be equ ly lengthened beyond the opposite fide, doubtlefs it won be bended towards the opposite fide, and would exact the refemble a piece of a Circle or Bow without any Angl just after the fame manner arifeth the bending of the Bones in this affect : namely, from the greater length ing of the fide most nourished; for seeing that that lengthening happeneth by the received aliment, according to all the parts of that fide, an Angular figure cannot and expected, or one compounded of many straight ones sais gularly connexed, but a crooked one like a Bow, wher shee the convex part is conftituted by the fide, plentifully ne water rithed, and the concave or hollow part by the fide, which in d sparingly nourished. But when it happeneth that for , wh part of the convex fide of a crooked Bone is dilproport mine nately nourifhed, in respect of the opposite fide, with this all doubt the convex Bone will flick out more on the part then in the reft : and fo from the inequality of them nutrition, we have given a reason of the crookednels the Bones in this aftest. We will add for a higher cont alor mation of this matter, An observation raised from t ash cure of this crookedness of the Bones. The Quacks of c lut Country are wont to rub daily the hollow, not the co vex fides of the Bones, and that rubbing, fay they, do the very much conduce to the cure, but this doth rather hi der it. But it is certain, that rubbing doth powerful fummon the nutritive juyce out of the Bloody mais in the part fo rubbed, therefore if at any time you rub th hollow part which is infufficiently nourished, it is wonder if it do good, seeing that thereby the aliment more plentifully allured, and the heat of the part is al excited and augmented ; neither on the one fide is t Gi

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#### (125)

bous part of the Bone being hurt by rubbing, to be when dred at, because by that means the aliment is attrato that part which was before superabundantly nouiber ed : belides the Oyntments, which may cherish the in n rent heat, and fit engthen the nutritive faculties afline he rubbing, do most good when they are applyed to ny Ar hollow part of the Bone; but to the convex part a frait ing rure which may reftrain the rifing up of the Bones is rland lly fitted with defired fuccess : chiefly indeed for this mit on, becaufe the capillary Arteries which convey the name od, or nutritive juyce to that fide of the Bone, are caughd up by fuch a ligature, and thereupon the nutrinon tis leffened. And these things shall suffice concerthe crookedness of the Bone in this affect. Wy Wa

foreover, To this Article we oppottunely add the inion of fome of the Joynts, as of the Knees and Anthat which happneth very frequently in this Difeafe, etimes being made inwardly, fometimes outwardly. this bending also feemeth to be not unfitly referred 的前 ie inequality of nutrition. For if it happen by un-I nutrition, that one fide of the Shank-bone be fo thned more then the other : suppose outwardly, that th somewhat lift up the outward part of the Epiphysis he Shank-Bone above the inward part, the joynt in Knee must needs stand outwardly bent; and on the rary, if the inward part be lifted up, and the outward effed, the fame Joynt must needs stand inwardly

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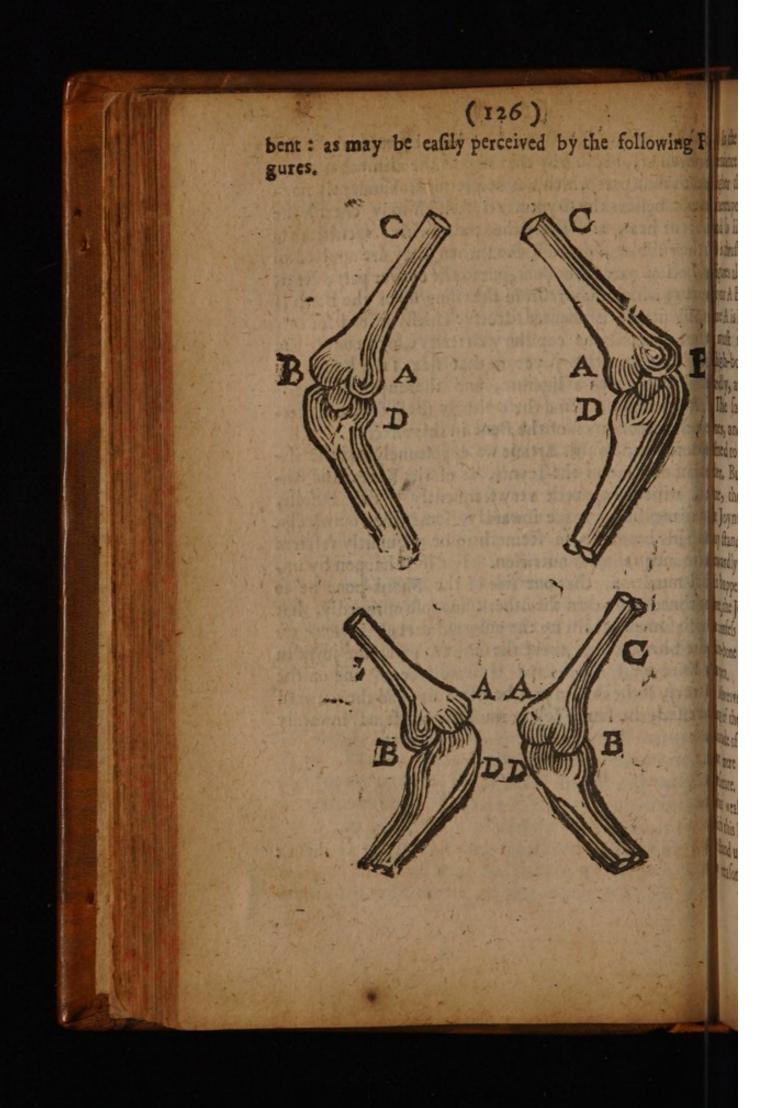
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n the Joynt of the Kace, A B, that part of the apdance of the Shank-bone B in the two first Figures, is her than the other part of the fame appendance; recupon the Bone of the Thigh (is inwardly bowed, fo likewife is the Shin-bone D; but the Joynt A s thrust formewhat outwardly. But in the two last ures all the contrary things may be observed. The int A B is inwardly, because that part of the Shinie A is higher than the other part of it B. Whereupon must needs lift up the inner and lower top of the igh-bone, so that the Thigh-bone will be bent outvely, and the Joynt inwardly.

The fame thing likewife may happen in the Ankleses, and the turning Joynts of the Back, if the Bones ned to the Joynt be higher on one fide than on the er. But in the Ankles, becaufe there, befides the Shinie, the leffer Bone of the Leg is also failtned through Joynt, it may fo fall out, that the leffer Bone below y ftand out further than the Shin-bone, and fo bend wardly the Joynt of the Ankle; and on the contrary, happen that the Shin-bone be longer then the leffer e, the Joynt must needs be inwardly bent. Although confels that fuch an inequality of length between the n-bone and the leffer bone in the Leg doth not fo often open.

Moreover, We suppose that the preternatural beng of the Spine doth rarely happen from the unequal tude of the sides of the turning Joynts of the Bones, more often from another cause which we will now fecute. We have already said, that the Spine is someat weak in this affect, and that Children afflicted h this Discase are unapt not only to motion, but also hand upon their feet, yea, and to raise their backs reason of the weakness of the Spine. Therefore when-

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whenfoever their Bodies are raifed, they feek fomewhe min to reft upon, and they fuffer their Spine to be bower Now iomerimes forwards, fomerimes backwards, fometime mit to the right hand, and fometimes to the left ; whereb the burden of their Body may be refted upon fomethin wh that stands near them. Hereupon it many times hap pens, that the Ligaments of the turning Joynts of th Spine in that part which is most commonly bendin out are loofned and lengthned, and on the opposite fid they are contracted ; fo that in tract of time the Spin cannot be crected according to the ftraight and natura Figure. And truly in this cafe we cannot excuse in mond Nurfes indiligence or negligence, becaufe they do no metere observe with a sufficient attentiveness, to which part this Children which they fuckle are most prone to bene ander their Bodies, that by that means they may endeavor the most bend them to the opposite part : In like manner all noute when Nurses without due regard and care do too fool tider. commit weak Children to the use of their feet, it may attn br happen, that when the regular motion of the Muscle (Detwo) is too weak to bear the body, Children may fuffe either their Knee or Ankle to be bowed to one fide whereupon the Ligaments of the Joynt are extended en ther on the inner or the outward fide, and by confe quence the Ligaments on the contrary fide are contracted, whereupon the joynt must needs be bended er ther inwardly or outwardly, therefore although we have denied above, that the crookednels of the bones dependeth hereupon, yet we grant, that the bending of the Joynts may happen in weak Children by the negligence of the Nurfes. We grant moreover, that the bone which would otherwise have been ftraight, may be crooked by an unskilful fwadling; yet that this caufe dot happen exceeding rarely in this affect, we are fomewhat con

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confident, as we have shewed already more at large. Now we proceed to the pointedness and narrowness of the orest in this affect.

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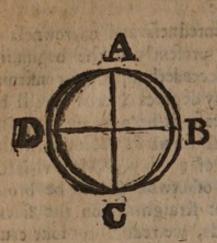
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We observe that this pointedness and narrowness of the breft doth not appear prefently at the beginning of this affect, but that it succeedeth upon the confirmaion of the Difeafe, and is by degrees intended, till by he perfeverance of the Difease it becomes evident and onspicuous, when the brest forwards resembleth the reft of a Hen, or the Keel of a Ship. This vitiated igure of the breaft which otherwife flould be broad ccording to Nature, and not straightned on the fides, nd even not pointed forwards, we reduce to four caus. The three former whereof we confels do contribute ttle efficacy to this matter, but the tourth alone doth most all the work. Yet because the three former do conibute fomething, we will likewife recite them here in der. Be this the first, In this affect the bone of the tern by reason of the augmented bulk of the Liver is mewhat elevated or thruft forward, whereupon there appeneth some part of the faid viciated Figure; and orcover from the same elevation of the bone of the ern there happeneth a certain contraction of the ibs towards the Spine, and this causeth the other part

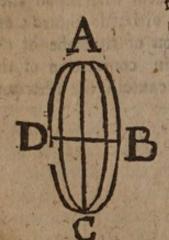
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of the vitiated Figure. This contraction of the Ribs we



thus demonstrate. Let the circle be A B C D, this must be supposed to be made of a flexible matter, but not equally extensible, as for example, of the bone of a Whate. Therefore when the sides A C are both stretched from one another, so that line of distance is produced into length between A C, then the sides of that

circle D B are neceffarily contracted almost in equal degree, and by the same means the line of lateral distance from D to B is abreviated; for the Circle be comes an Oval Figure, as any man shall find who will take the pains to reduce it to experiment, For the Figure will be changed into this form which the Figure



following doth expresses in which the line of distance between A an C is represented longwise, an withall the line D B appears to be abreviated, and the Circle be comes Oval; neither is ther need of more words to prove thi matter.

Now it must be known that th opposite couples of the Ribs d expresse a certain rude kind circular Figure, especially th

uppermost which chiefly fashion the Brest by the mediation of the Spine on the hinder part, and the Stern o the forepart. Nor should it trouble any man, becauthe

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they will not make an exact and perfect Circle, seeing that our demonstration is as effectual in a circular Figure how imperfect server, as in the most exquisite and perfect; provided that there be a coherence among all the parts, that they be not difforted, that they be flexible, but not easily extensible; which conditions are sufficiently confpicuous in the Figure of the Ribs even now proposed to view. Therefore if in this affect the bone of the Stern be somewhat elevated forwards, that it may yield room to the augmented bulk of the Liver, the ribs towards the Spine must needs be drawn in nearer to one another, whereupon the breft must unavoidably be laterally ftraightned, the latitude of it being lefened.

Some may lay, If the rifing of the Bone of the Stern. lid conduce any thing to the pointed Figure of the Breft, it would chiefly effect that about the inferior Ribs, seeing that bis elevation of the Stern doth begin at the lower part; but it is manifestly known to fall out otherwise: for the arrowness of the Brest happeneth chiefly about the Armpits, and asterwards beneath the Channel Bones: but the lower Ribs seem to be enlarged about the stather than traightned.

We answer, That the five lower ribs are not artiulated with the Stern, neither do they make a perfect Circle; and therefore in no wife do they relate to he propounded demonstration; but the stretching of hem dependeth upon another cause, namely, the fulels of the Hypochondriacal parts. Let it likewise be oted, that we assign not this for the chief cause of the itiated Figure, yea, we suppose that it conferreth very ttle towardsit. And so we proceed to the second cause fthis vitiated Figure, which we also conceive to be a ery flight one,

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In this affect the Hypochondriacal parts are almost perperually observed to be full and ftretched, namely, both in respect of the greatness of the Liver, and also because all the other bowels almost which are contained in the bottom of the belly are fufficiently large ; feeing that as hath been faid, the first effence of this Disease is not rooted in them. And laftly, becaufe the Guts and the Ventricle are usually more or less diftended with wind. But now from that fulnels and extension of the Hypochondriacal parts we may justly collect that in this affect the Ribs are drawn downwards a little more then is expedient. For the greatest extension is here observed in the oblike Muscles that are extended beneath the Hypochondriacal parts ; Now the Muscle obliquely descending hath toothed heads faftned to the fixth, feventh, eighth and ninth Ribs, and the part of the broad tendon also oblikely alcending is adjoyning to the griftles of the ninth, tenth and eleventh Ribs. Wherefore feeing that the faid Muscles are almost perpetually too much extended in this affect, they must needs in some manner draw the faid Ribs downwards, and feeing all the Ribs are firmly faftned together by the intercostal Muscles, it happeneth that in this affect all the Ribs are fomewhat drawn down-

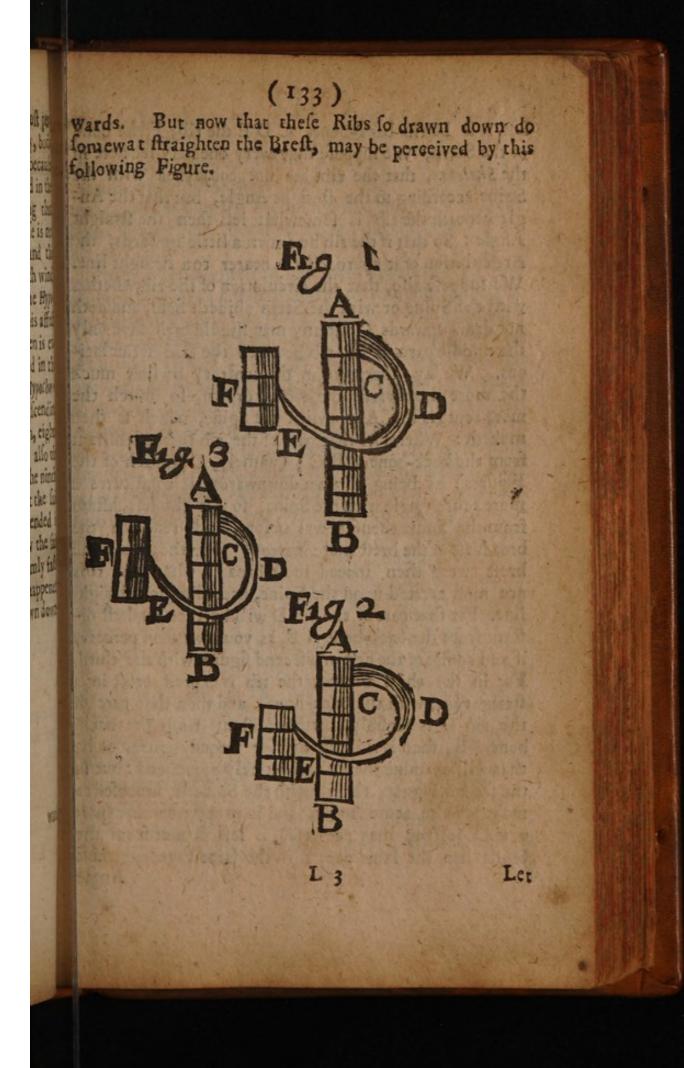
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Let AB be the back-bone, CDE the rib, F the bone of the Stern, We suppose that every one may see here in the Skeleton, that the ribs are not conjoyned with the Spine according to the ftraight Angle, but that the Angle beneath the rib is fomewhat lefs then the ftraight Angle : So that if the rib be drawn a little upwards, the Articulation of it approacheth nearer to a straight line. We suppose also, that the circulation of the rib, whether with the Spine or with the Stern abideth firm, and doth not draw upwards (least any man should err) fave only the middle parts of the rib between the faid Articulati-We fay, therefore on the contrary by how much ons. the more downwards the rib is drawn, fo much the more acute is the Angle with the Spine, which it then maketh : Wherefore that part of the rib furtheft diftant from the back-bone A B C; (namely, D in each of the Figures) as being thrown downwards, it constitutes a more acute Angle with the Spine, so is it also less distant from the Spine then it was before, and rendreth the broadnels of the breft more narrow. For the fides of the breft were then indeed most broad, when the ribs are most crected upon the Spine, according to a straight line. For that part of the rib D will be then furthest diftant from the back-bone A B, as you may foon perceive if you compare the first and second figure with the third ... For in the third Figure, the rib is exprest erect in a ftraight line with the back-bone, and then that part of the rib D is sensibly further distant from the backbone AB, then it is in the first or second figure, as he that will examine them, shall quickly apprehend : but in the second Figure, the rib with the Spine is supposed to make a more acute Angle, and in proportion that part of it D (as you may perceive) is less distant from the, Spine than the same part D in the same Figure, whole Angle 20 2.3

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Angle is supposed to be less acute; and yet that is muchless diftant from the Spine, then in the third Figure, whose Articulation is crected to a straight Angle. We infer therefore, that the ribs when they are drawn upwards, do amplify the breft sidewise, but when they are drawn downwards, then they straighten the breft on the fides.

This is further confirmed in that, because at fuch time when the breaft is dilated; namely, when the breathing is rightly performed, the ribs are drawn a little upwards by the ftrength and force of the Intercostal Muscles; and when the expiration is performed; namely, when the breft is contracted, the same ribs are drawn back again downwards by the help of the oblique Muscles of the Abdomen. Any man may observe this in himself or in any other man, especially in great inspirations and expirations. For in a vehement infpiration he shall plainly perceive the ribs at the fame time to be lifted upwards, & withall to enlarge the breadth of the breft; but in a vehement expiration he shall feel the ribs as it were bowed downwards, and at the fame time contracted inwards. Neither of these things could happen, unless the position of the ribs were fuch, as that those beneath in respect of the Spine, should make an acute Angle, and being more depressed, should make it fo much the more acute, and by confequence the breft fhould be then most fraightned; and on the contrary, being lifted upwards, they should approach nearer to a straight Angle, with the Spine, and so extend the fides of the breft. We conclude therefore, that the ribs in this affect are drawn somewhat downwards, and that the breft is contracted on the fides by reason of the plenitude and tensity of Hypochondriacal parts ; although we grant as we have intimated above, that this cause is not so confiderable, that WS

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we should attribute any great part of this Difease unto it. Be this therefore the third, The Caufe of this vitiated Figure of the Breft, Is a lateral growing of the Lungs in the Pleura, in this Difease especially, being confirmed, it is most frequently observed to happen. Doubtles fuch an adnalcency doth reftrain and interrupt the motion of the Ribs outwardly, whereby the Breft is laterally dilated. For if the rib under which this adhafcency lieth, fhould endeavor forcibly to remove it felf from the center of the Breft, there would be danger of pulling the Lungs that grow to it, or the Pleura it felf from the ribs with intollerable pain. For although the Lungs upon the ingress of the ayr admit an easy extension, according to all the parts thereof, yet when they fall down, or are fuffed with thick humors (which most frequently happeneth in this cafe) they scarce admit any notable diftention, without diffolving the unity either of fome Veffel, Mentbrane, or the substance of the Bowel's themselves. Moreover, whilft we confider that in found bodies the Lungs are very rarely laterally divided from the Pleura ; and but in those parts only of the cheft, which were to be exposed to motion at a confiderable diftance ; namely, the Back, the Stern, the Mediastinum (that is the Membranes that divide the middle of the Belly) and perhaps the middle parts of the Diaphragma, &c. We conceive that wife nature did this deliberately, and with delign; namely, leaft their connexions should either offend the dilatations of the Breft, or render the Lungs themselves obnovious to those kind of calamities. However it be, it is fcarce conceivable, but that preternatural growing together of the Lungs with the Pleura, more or lefs must hinder and retard the free spreading of the ribs towards the fides, and therefore it conduceth a little at least to occasion the narrowness of the Breft. Be

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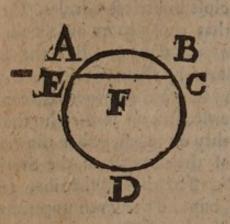
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Be this the fourth, The cause of the vitiated Figure relaid, is an unequal nutrition of certain parts of the s in respect of others. And this cause we affirm to much more effectual then the reft, to procure this mptom. Which that we may demonstrate, we affert t, that the feven uppermost ribs do chiefly, if not ely constitute this Figure of the Brest : for the five vermost, as they are not immediately conjoyned with Stern; So neither can they in any manner point or vare the Stern. Add alfo, that feeing (as we have aldy shewed) they do not close in perfect Circles, their sure is eafily moveable, that it may more ordels yield he fulnels of the Hypochonariacal parts .- But the feupper ribs are Articulated by their Grifties, with bones of the Stern: from whence it may perhaps come pais, that they do somewhat lift up fore-right these hes of the Stern which they do touch, when the five er ribs being deprived of the contract of the Stern, mot effect it. Secondly, We affert, that all the ribs, and only the five lowermoft, but alfo the feven uppermoft admit an equal nutrition in this affect, and that they more nourished in one part then in another, and theree that they are more extended in length by that then the other, which is more sparingly nourifhed : and ind that they grow more on that fide in which they are joyned with the Griftles of the Stern, and that they are and more flowly lengthened on the other part, namethe Head or top, whereby they are fastned to the Rens of the back. The reason is, because the forepart any rib is more foft and fpongy then the hinder part t, as any man may make tryal in any Creature. Setherefore (as it is clear by what hath been faid) that : softer parts of the bones do in this affect more easily eive their aliment and augmentation, then the har-

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der and more folid, it followeth that the foremost pare from of the ribs which are most fost, are more lengthened which than the undermost. Thirdly, We affert, that in a be dy of a Circular or Annulary Figure, if one part of the ring be more lengthened than another, the other pare must needs give place to this increase, or else that pan so unequally lengthened, will either outwardly hang out or be inwardly knotted either upwards or downwards and be bent either one, or many of these wayes. This

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we thus demonstrate. Le the Circle or Ring be f B. Let the former pan of it be supposed to b lengthened from A to B But the other parts of it namely, C D E to remain in their position, and no at all to yield to the faid lengthning. These thing being supposed, the leng thened portion of the cir

cle, namely, A B must needs be either lifted up outwards, or depressed inwards, either bent upwards of downwards or variously: For otherwise the distance be tween the limits of the string F would not suffice to contain that portion of the Circle now lengthned, th figure of the Bow being changed. For those limits di only suffice before; therefore the Bow being lengthned and not the string, or the tops and limits of the string it cannot be, that the Bow should be to the string as be fore. It must be changed therefore, the bending beins made either outwards or inwards, or upwards or down wards, or many of these wayes, as may be perceived b the Figures following. The first Figure represents Bon voutwardly prominent : The fecond, Inwardly, and third varioufly bent and intorted. And indeed the doth very fitly fet out the Figure of the Breft viti-

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ated in this affect. For we have noted above, that the ribs articulated with the Stern and Spine do make a kind of imperfect ring, and that they are in this affect sooner nourished, and lengthned in the foremost then in the hindermost part, therefore in respect of the cause this Symptome fully and fitly agreeth with that Figure first described. Befides, we have supposed that the parts of the Circle do remain firme : that allo in this affect may be accommodated to the lateral and hindermost parts of the ribs. For feeing thefe grow much lefs then the forcmoft, certainly they may well be supposed to be stable, unleis perhaps some

y fay, that either the fides and hinder parts of the s, by dilating themfelves or their Joynts, with which y are fastned with the turning Joynts of the back, by tering the ribs to be bended backwards, do yield fome-

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fomewhat to that exceeding augmentation." But neith of these can be rightly faid. For first, the later and hind parts of any rib as they are more hard and folid, fo a they likewise more fliff and ftrong then the foremost; no it is ablurd to imagine that the weaker parts of the fan rib can bend the ftronger, or that the lefs flexible par will yield to those parts which are eafily flexible. When fore the lateral and hinder parts of the ribs cannot be inte th IR ha bent, as that they fhould yield to the foremost lengthe ed parts thereof. As for the Joynts of the ribs, doub less that Joynt wherewith the rib is conjoyned with t turning Joynt of the breft, can by no means fuffer t ID CO rib to be bent fo much backward, as that it should yie plat to the lengthning thereof; and that not only because while is double, namely, in the hollownels of the turnin obtain Joynt, and in the transversal process thereof : and ther Bi pie bg forc very unapt to permit a backward motion. chiefly, because it is even ten times ftronger than d Where foremost Joyne, wherewith the same rib is fastened intoson the bone of the Stern. Now a Joynt ten times ftronge state and withall double, and in fuch a manner formed double tomat that it is altogether unapt to endure any retrograde mile.) tion, cannot by any means be imagined to yield back with wards, leaft the Joynt ten times weaker should be ber fomewhat forwards. We must conclude therefore, the the lateral and hinder parts of the ribs do not yield I that unequal production of them which happneth for wards, and by confequence, that in this refpect they are I be accounted firm; and therefore that unequal lengthnin must needs change the figure of them on the forepart and that by bending them there either upwards or down wards, or inwards or outwards, or diverle ways.

This bending of the ribs here cannot be made eithe upwards or downwards, because the ribs in regard (

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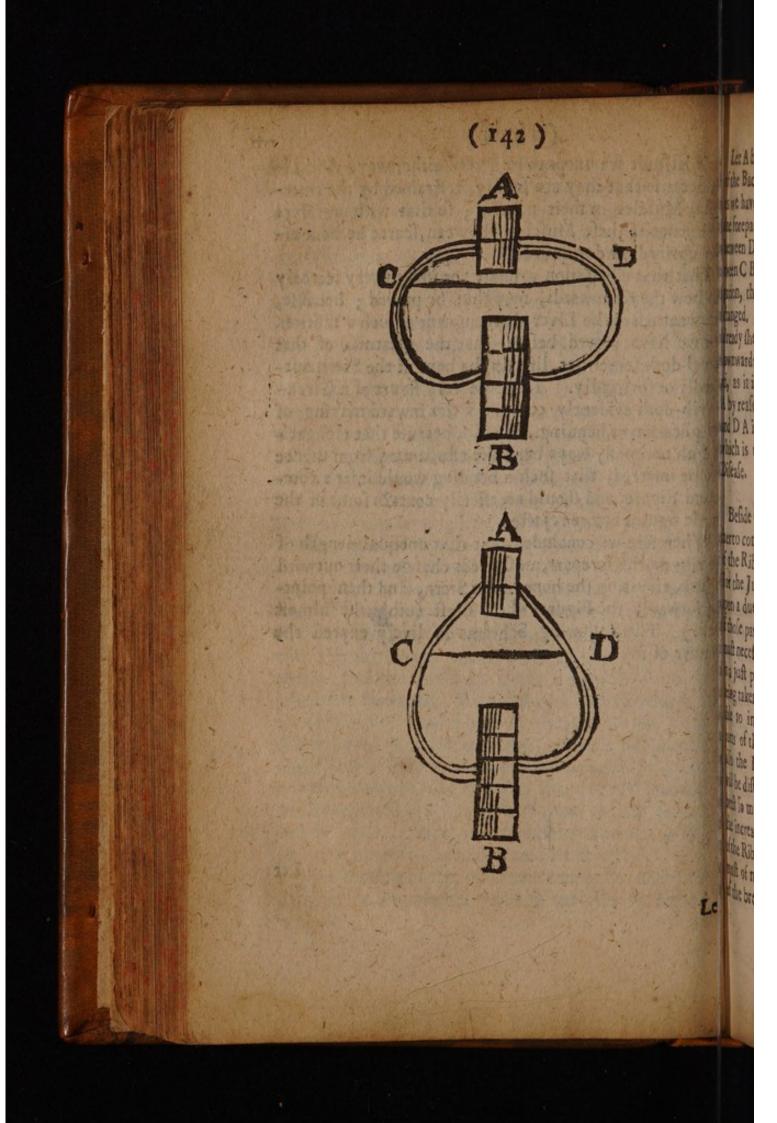
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r latitude are unapt to be bowed either way. Add albecause that they are firmly restrained by the Interc al Muscles in their position; so that without offers c iolence to these Muscles, they can scarce be bent eiupwards er downwards.

hat that elongation cannot, or indeed very scarcely bow the rib inwards, may thus be proved; because, greatness of the Liver is repugnant to such a motion. we have proved before, that the greatness of that el doth somewhat list up the bone of the Stern outdly or forwardly. Then the very figure of a Circurib doth evidently contradict the inward making of plication or bending. Lastly, because that elongatiloth not many ways bend the ribs, it may from thence be inferred, that such a bending would infer a comnd Figure, and should necessarily contain some of the sle figures before rejected.

Wherefore we conclude, that that unequal length of ribs on the forepart, must needs change their outward ure, elevating the bone of the Stern, and then pointforwards the Figures of the Brest (otherwise almost n.) The following Scheams do lively express the nner of it.

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Let A be the Bone of the Stern, B the turning Joynts the Back, C and D the two opposite Ribs, which we have faid do make a kind of Ring. Therefore if forepart of the Ribs; namely, between C and A, and tween D and A be lengthned, and yet the parts beeen C B and D B are no way answerable to this elontion, the figure of the Ring must needs be outwardly anged. Therefore seeing that the Rib is (as we have eady shewed) unapt to be bent either upwards or wnwards, or inwards, it must needs be outwardly bow-, as it is express in the second Figure, where the stern by reason of the elongation of the part of the Rib C A d D A is represented, as if it were outwardly pointed, nich is the very vitiated Figure of the bress in this ifease.

Beside the causes of the narrowness of the breft hierto commemorated, we can here add the small increase the Ribs between C and B, and also between B and D. or the Just Latitude of the breft doth chiefly depend on a due augmentation of those parts of the Ribs. For those parts of the Ribs do grow to a just length, they uft neceffarily dilate the breft unto the ribs almost a just proportion, that little of the narrownels only ing taken away, which the former causes alone were le to introduce. For by how much the more those rts of the ribs are lengthened, by fo much the more to the Lateral part of the rib D and the part C Il be distant from the back bone B, and will make the eft fo much the broader. On the contrary, when upon e increase of the other parts of the body, those parts the Ribs are but little, or not at all augmented, they uft of neceffity be laterally less distant from the center the breft then is meet, and therefore the breft muft

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be straightned towards the sides. For the sides of the r C and D are so much the less distant from the Back Bone, and the center of the Bress, as the parts of the Ril between C B and D B are less lengthned. And let the things suffice to have been spoken concerning the narrow ness and acumination of the Bress in this affect, Wit which we put at last an end to this disquisition of the Organical vices occuring in this Discase.

# CHAP. XIV.

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#### The Secondary Essence of this Disease in th Animal Constitution.

Aving put an end to the examination of the Natural and Vital Conftitution, vitiated in this affect; it now remaineth that we make enquiry into the Animal Conftitution. An

we have already affirmed, that no primary fault dot here occur, and that it is a part of the primary Effence of this Difeafe. But whether there lurk in it any secondar vice, that we shall now examine.

But seeing that neither the Ancients nor the Møder Writers, who have written of the Animal Faculty, hav made any mention of the Animal Constitution, nor in deed so much as once attempted a description of it: 1 may very justly be expected from us, who acknowledg such a Constitution. And seeing seme wise men do dil sent from that description, which may be deduced from the second second

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the opinion of Antiquity, and the common opinion concerning the Animal faculty, and otherwife expounding the matter, do substitute a somewhat different descriptim, we thought good to offer both to the Readers confideation.

According to the former and vulgarly received opition and deteription of the Animal faculty, the animal conftitution is that affection of the Body which confiftth in the generation and due motion of the Animal pirits. Now by the due motion of the Animal Spiits, they understand the excursion of them from the train thorow the Nerves like lightning, and again their course back to the Brain, whereby they declare unto what is perceived by the Organs of the outward Sens.

Others (as we have faid) do otherwife explicate this atter. They grant indeed that the Animal confficuti-1 doth include the generation and diffribution of the nimal Spirits, but they Say, that that fwift motion of e Flux and Reflux of the Animal Spirits like lightng, is inconceivable in the Nerves, and if it be not profitable, yet certainly it is very little neceffary to ablith the animal faculty. But inflead of this they offitute in time of waking a certain contractive men, of a moving endeavor of the very substance of Brain, of the Spinal Mitrow, of the Nerves arig from thence, and of the parts into which they distributed. And this motion or endeavor proceth (say they) a certain Tensity in the aforefaid rts, by whole force all the alterations imprinted in le parts by any objects, are communicated to the ain. For as in a Harp when the ftrings are fretch d 1 just pitch, if they be ftricken in the most gen le. nner at either end, that motion in a moment, er leaft

least a Physical one runneth to the other end; fo they likewise affirm, that any Nerve being moved which is duly ftretched without the Skull, that motion is extended to the Brain it felf, by reason of the continuity and Tenfity of the laid parts, and there fixeth a certain impreffion conformable to the caufe thereof. But in time of fleep they suppose the Brain, the Spinal marrow, and fome of the Nerves to be fomewhat loofned. And indeed they fay perpetually and fimply, that the foremost connexions of the Spinal Marrow with the Brain remain loofe continually during fleep; but they grant, that the hindermost connexions with the Cerebethi are fomewhat extended, as in Night-walkers, and fo by that means they do in some fort difeern outward objects, but they judge not of them by common tenfe, but as it were reflected from the memory to the Fantasie, Neither do they suppose it necessary, that all the inferior parts of the Spinal Marrow, and therefore the Nerves from thence proceeding should be perpetually loofned during fleep : feeing that most Birds fleep standing upon their feet ; feeing that respiration in time of fleep doth prefuppole the Tenfity of fome Nerves ; and laftly, feeing where fleep first steals in, the uppermost Nerves are wholly loofned before the neathermost. As for Dreams they conceive, that they proceed from a various and chanceable agitation and commixture of divers impref. fions treasured up in the memory, which are now again freshly perceived, by reason of a retained Tensity in some parts of the Brain. But when in deep and profound fleeps no dreams are represented, then they fay, that the whole Brain is loofned.

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Now whether the former opinion or this later be most agreeable to truth, for the present we do not much care s Neither do we here undertake to determine thi Contro

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Controverfie, feeing that the Animal faculty doth exercife his function both waies from the fame caufes, and that the fecondary vice doth happen by this affect in the Animal Conftitution almost after the fame manner. For first, as for the generation of the Animal Spirits, whether the former or the later opinion be true, it will be all one ; because we find no fault in the Brain (unless perhaps fome other Difease be conjoyned) wherein each opinion supposeth the Animal Spirits to be generated. For we have shewed above, that the Head ought not to be numbred among the first affected Parts, and that the internal and proper actions thereof are not vitiated in this Difease. Then fecondly, As for the distribution of the Animal Spirits, whether it be perfected backwards and forwards by that rapid and fudden motion like lightning; or by a motion only made forwards, and that too gentle and flow, commonly the fame fault occurreth in this Dileale.

For first, Seeing that that supposed rapid motion of the Animal Spirits is cauled by their paffage into the first affected Parts, namely, through the Spinal Marrow without the Skull, through the Nerves from thence proceeding, and through the parts into which those Nerves are distributed ; and seeing that all these parts in this affect do labor with a cold diftemper, with a paucity and dulnels of inherent Spirits, the due lwiftnels of that motion must needs be somewhat retarded. For a cold diftemper, as alfo a benummednefs and penury of Spirite are repugnant to any motion, excepting a confrictive ; fome may fay, that the opinion propounded in the first place doth suppose a wonderful activity and subtility of the Animal Spirits, whereby they can eafily overcome this repugnance. But, however it may be, feeing that the parts re-act through which the Spirits have their paffage, and M 2

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and labor to communicate their coldness and dulness to them, they must needs in some degree retard that activity of the Spirits leffen their fubtilty, and fomewhat intercept that expedite transition. .Wherefore this opinion being supposed as true, the Animal Constitution will be vitiated in this affect, in regard of the retundation of that motion of the Spirits. And that lecondarily, feeing that this motion is not interrupted by the primary fault of the Animal Spirits, but by the fault of the first affe-Ated Parts, as hath been faid in like manner in the Opinion last propoled, wherein the motion of the Spirits is supposed to be peaceable and gentle, they must needs whilft they are fomewhat flowly transmitted through the first affected parts, contract some vitiofity from the depraved inherent Confficution of those parts, for the fame Reafons which we alledged in the Question immediately preceding. It will be therefore according to this Opinion allo, a Secondary vice in the distribution of the Animal Spirits.

Again, As for the Tenfity of the very fubitance of the Brain, of the Spinal Marrow, of the Nerves and the Nervous parts in time of waking, which is supposed in the later Opinion before propounded, there must needs be some defect of a due Tensity in the Spinal Marrow without the Skuli, in the Nerves arising from thence, and in the parts unto which they are distribured. For first; A cold and moift distemper is repugnant and adverse to that due Tensity, so also is that dulness and penary of inherent Spirits ; wherewith the Parts are without controversie rendred flothful, and less ant to perform the Animal Actions; the contrary whereof happeneth, when the aforesaid parts obtain their due Tenfiry., Secondly, It is manifest by what hath been faid, that the Tone of these parts is somewhat vitiated in this affect,

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fect, by reason of their exceeding loosness, flipperinels, oftnefs, weaknels and internallubricity, which qualities o most evidently enfeeble the just Tensity of the faid Although therefore that the Brain in this affect arts. o for his part yield a due and just influx, yet it is fcarce offible, nay it is altogether impoffible that it should ommunicate that Tenfity in a sufficient degree to he Spinal Marrow without the Skull, to the Nerves rom thence proceeding, &c. because of the diftemper, enummedness and penury of the inherent Spirits. Chirdly, The Symptoms in this Difease that relate to the Inimal faculty do most clearly contirm the fame thing. for Children afflicted with this Difease do from the ery beginning thereof (if they be compared with others of the fame age) move and exercise themselves very veakly, and are lefs delighted in manly fports : but upon the progress of the affect, they are averse from any rehement motion, as they stand upon their feet, they eel, wave and stagger, seeking after somewhat to support them, and can scarce go upright; neither take they pleafure in any play, unless fitting or lying along, or when they are carried in their Nurles Arms : Finally, the weak Spine is scarce strong enough to bear the burden of the Head, the Body being to extreamly extenuated and pined away. All which things do abundantly demonstrate that the Tenfity of the parts subservient to motion is less rigid in this affect than is justly requise in time of waking. If therefore that due Tenfity in time of waking be a part of the Animal Constitution, which we here suppose, that being vitiated must without all doubt neceffarily constitute a Discale in the Animal Constitution; and seeing that this fault hath no primary dependance upon the Brain it felf, but upon the inherent Constitution of the first affected parts, it M 3 pught

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ought in all Reason to be reputed a Secondary fault in respect of the Animal Constitution.

Yet here we meet with a scruple. Some may demand, Why the sense as well as the faculty of motion is not vitiated in this offect ? The reason is plain, a far greater tenfity, ftrength and vigor of the Nerves is required to exercife the motive then the fenfitive faculty. For almost the gentleft motion of the Nerves is sufficient for senie; but not for motion. So you may observe in the motion of any Joynt, that the Muscles which move it are very hard and stiff, but that hardness being remitted, yet the sensation is eafily performed. Nor doth that any way hinder, becaufe that sometimes in the Palfy the sense is fomewhat flupified, and the motion remaineth : for the Pally is an affect very different from this ; for in that the primary fault relides in the very Animal Constitution, therefore it may fo fall out, that both the fenfe and the motion may be equally affected. Befides, when perhaps one Nerve doth want the due influx of the Brain and another which is extended to the mu'cles of that part doth enjoy it, it may be, that for this caule also the fenfe may be abolifhed, and yet the motion may continue ; although this cafe is not fo frequent, and that the motion is more usually taken away, the fense remaining. But we have faid enough concerning this matter. And thus at length we have produced those things which we have meditated of the integral Effence, both primary and fecondary of this Difease ; and that with as much perspicuity as a matter fo difficult and unfearcht into would bear : In the next place we shall address our felves to the examination of the caufes of this Difeafe.

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CHAP. XV. The Canfe of the Rachites. And first those things which concern the Parents.

W E have largely explained above both the Primary and Secondary Effence of this Difeafe. And indeed we have fufficiently demonstrated in the fame place, the dependance of the fecondary upon the Primary Effence. It may not therefore be here expected, that we should again purposely and in particular difcuts the causes of the fecondary Effence, which we have handled before. It may suffice, that we have found out the causes of the secondary Effence. Yet if any cause do occur which at once hath an influx as well into the primary or secondary Effence of the Difease, we shall not refuse to take notice of it by the way as we proceed.

But omitting all diligent fearch into the feveral kinds of caufes, we purpofe to contract this our difcourfe chiefly to two heads. The former containeth the Infirmities and the difeafed difpositions of the Parents, which perhaps have so great an influence upon the Children, that they suppeditate at least a pronels to this affect, and infer an aptitude to fall into it, if they have not actually fallen into it from their very birth. The later comprehendeth the accelfary caufes of this Difeafe; namely, those which happen to children after their birth.

Concerning the caules of the first kind we meet with a Question at the first entrance: How and whether this Difease may be faid to be bereditary? That we may the more successfully proceed in the determination of M 4 this

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this queftion, an hereditary Difeafe must be diftinguished into that properly, and that improperly to called. And indeed an hereditary Difease properly to called, is ever supposed to be pre-existent in both or one of the Parents, and from thence to be derived to the Progeny. But an hereditary D.stafe, improperly to called, is not supposed to be pre-existent in the fame kind, either in both or one of the Parents; yet the fame fault must always necessarily precede (pe haps altogether of a different kind) at least in one of th m, by vertue whereof a certain disposedness is imprinted in the children, whereby they are made obnoxious to fall into this improperly hereditary Difeafe,

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Moreover, An hereditary Difease properly so called, is twofold; eicher in the conformation, as when a lame Person begets a lame; a deaf Father, a deaf Son, or a blind a blind ; or in the fimilary Constitution : as when B Gowry Father begets a Gowry Child. It is to be noted, that in the fi ft kind there is an hereditary fault inherent in the first affected parts of the Conformation. Bur in the later, there is no neceffity that a Difease of the fame kind with the Difeafe of the Parents, flould be actually inherent in the Embryon, from the first formation. But such a disposition imprinted by one or both o' the Parents is sufficient, which as the life is lengthened may be actua ed into the same, by the concourse of o her intervening caules. Again, an hereditary Dif.ale improperly fo called, may be likewife twofold ; namely, e ther in the Conformation, or in the fimilary Conftirution. In the formation, as when neither of the Parents is blind, pore-blind, lame, &c. yet have begotten a Son bl nd, pore-blind or lame, by the very fault of the For in these cases, that very fault which t mat on. is sensible and conspicaous in the Islae, flowed from some fault in the Parents, although perhaps of a different kind

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d, and fo it may be called, though improperly, an helitary Difeafe. In like manner in the fimilary Contution of the lifue, there may refide an hereditary Difle, improperly fo called, as when a Melancholy, fedeny, or an intemperate Parent begetteth a Child fubject the gowt or the *Caebexia*, although perhaps the Pait was never troubled either with the one or the her.

21 10 These things being thus premised, we approach nearto the relolving of the Question. And first, we affirm 10.00 it this Difease is not comprehended under the former madem y Dile cies of an hereditary Difeafe, properly lo called. For it confifteth in the formation : but this Difease accorcallico, ig to its primary Effence, is a fimilary Difease, as we 20 1 41 re before demonstrated, and very rarely bewrayeth it Son, a f from the very Birth, much lefs from the very con-: as with ption and formation. And for the lame Realons, we to be a o affirm this Difease belongeth not to the former kind v fault it hereditary Difeases Improperly to called. Which after ormation Dileak the manner confift in the formation of the paris, and Aculd begun prefently after the first to mation.

Secondly, We fay, that fo it may come to pais, that this feafe may fall under the fecond ipecies propounded, of hereditary Difeafe properly fo called ; namely, that ich confifteth in the fimilary Conftitution. Yet we not affirm this as certain and undubitable, becaufe the uldren which we have hitherto known to be afflicted th this Difeafe, have not lived to fuch maturity of ars as to beget Children : and therefore we cannot nerwife fuppofe, then by probable conjecture, whether no their progeny fhould be infected with this affect, as were by r ght of inheritance.

Thirdly, We fay, that in many Children this Difease h directly fall under the second species of an hereditg-

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ry Difeafe, improperly fo called. For according to the the primary Effence of it, it is a fimilary Difeafe, and althougher it hath not yet been to long and fufficiently difcovere guin unto us, that we can determine the effects of it, how the bede will operate in the Progeny, yet frequently in the prefe pier progeny we have observed certain Rudiments of this a meter fect to have been derived to many from one or both the Parents. So that although neither of the Parer were in their infancy or child-hood afflicted with theman Difeafe, yet some pronenels and disposednels to this D with cale hath prefently appeared in their little Infants, elper telin, ally in those whose Parents before coition were pre-dift when fed by some vitiofity of body, or error of life, to transr fette this pollution to their Iffue; but those defilements of Ingis Parents which dispose them to propagate Children detrant noxious to this affect, we shall by and by reckon up inter cheir order; from whence allo a higher confirmation into this affertion may be deduced.

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Fourthly, We fay, although the affects of the Pare name do frequently imprint a certain propersion in the Isluster fall into this Difease, so that this Disease may be the fore reputed in the second acception of an hereditary ease, improperly so called ; yet it very rarely happnent that this Difease doth actually break out before the b as to h of the child. One amongst us attesteth, that once, only but once, he faw a Child new born invaded 1 this Difeafe. And in this Child the Back-bone and neck were fo weak, that they could not fuftain the wei and greatness of the Head, within three moneths after was born, the Child dyed. Whereby it is apparent, he was grievoully affected. It seemeth conspicuous what hath been faid, that Infants, however they may quently borrow from their Parents a disposednel this affect, are most rarely and feldom troubled wit be

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inglice they are born, but if at any time they are fo prealing urely afflicted, that then the affect is most vehement ditten grievous. Now a reason of the event of both these how to be demanded. To the former therefore we fay, that menth Difease doth partly confist in a cold distemper of the d the raffected parts, and indeed an unequal one, as namely, at balle g very cold in the faid part, respect being had to in Par emper of the Head and the Bowels : and that herewith what unequal coldness of those parts is of great mototals t in this Diseale, and that also in respect of the very antistic uality. For this contributeth much to that unequal entred deficient distribution of the Vital Blood to the parts total affected. Seeing therefore at fuch time when the mession ryon is carried in the womb, this inequality of the Childres perament of the first affected parts may be much cortime ed and averted by an equal heat, whereby the womb minute, on every fide embrace and cherifh the body of the nyon; it followeth, that the gestation doth very much fuelage away this Disease, at least retard the invasion of it. nut the body of the Womb being all about equal y waris bed I with an even hear, and equally embracing and cheertditing ing all the parts of the Embryon, doth not eafily perlyhipping one part to wax colder then the reft, and by that forethe ans to be cherisched with a defective and sparing afflux hatenet, he Vital Blood. Wherefore feeing that that very inimite sality of heat and comfort are Essential pars of this bone and ease, and without which this Disease cannot confift, it in the wonder that the womb ftrongly refifting these parts meins the Disease, and the invasion thereof, doth for the apputter of part protract it, at leaft during the impregnation. sfor the later part of the question propounded, namewhy Infants, who before their birth were infested with her mil interest i Diferje, are more grievously and dingerously afflibland? We fay, according to that Aphoisism of Hyprcratee

crates, that a Discase which holdeth the least congruity with the condition of the Difeafed, is more dangerous then the contrary ; as a Feaver threatneth more danger the to an old man than to a young, and in the winter ther winder the fummer. For a Dilease that hath some correspondence une and conformity with the condition of the Difeated, requiring reth a flighter caufe for its introduction: but that which i meny contrary thereunto, argueth the magnitude of the caule is, which notwithstanding relistance and oppolition, wil with produce his effects. In the present Diseale, therefore if the the m equal and impartial heat of the womb cannot reftrain refult the propensity of the Embryon to this affect, but it will fally un into it, lome vehement caufe must needs be imprinted bildeti the Parents, and the feminal Principals extreamly weak take Therefore there is little hope when the Embryo much nee. laboring with this Difease is born, neither will a pruden ud be Phyfitian attempt the cure without fome Prognoffick of wood imminent danger. Moreover, inftead of a Co. ollary, w Guit fubstitute another Rule, having fome affinity with many former, although perhaps it be not yet certain and ap taken proved ; namely, that Children by how much the foose after their birth they are invaded with this Difeafe, I 1, 2 much the more difficultly (cateris paribus) are they de livered from it. And let these things suffice concernin S ann the Question propounded.

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We will now apply our felves to the division and reckening up of those causes which on the Parents parts maproduce this Disease. Some of these faults in the Parent relate to the Generation of the seed, whereof the Embry on confistent, others have reference to the Embryon nu conceived, and yet born about in the Womb. The fault of the Generation of the seed proceed either from the man or the woman or from the whole Body or from those parts onely which are dedicated be nature.

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une to Generation. The faults of the Parents andernding upon the whole Body have the ftrongeft influintencinto the Child, because it transmitteth such matter attom: Generation of the Seed, as is unapt for chose parts intercolated to that office. We purpole not here to parmich rize the leveral faults of the matter of the Seed. maure instance in those alone, which conspire to entitle. and rogeny to this Difeafe. These we reduce to four thto-Liss,

e first Classis containeth a cold and moist distem-TELCE) the matter, whereof the Seed is Generated. efore This m may relulteth from a cold and moift diftemper of the innar ts, unto which we also refer a predominancy of ill especially that which is Phlegmatick and waterish, oriente M ing Cachexia and Dropfy, and perhaps the Green-Sickhe East which fome call the white Feaver, not fufficiently ed before conception ; all which affects manifeftly a mit Q to conflitute a waterish matter, both cold and moist on the Genital Parts, which is not onely in general lefs a callan r the Generation of the Seed, but it particularly T HIS DE eth to a condition of this Disease ; a part of whose ry Effence confifteth in that very cold and moift per, as we have already proved. Moreover, we Dilet perhaps hither reduce the Scurvy, the French Pox a le Jaundice, in which affects the Blood alfo is polluth filthy excrementitious humors, and corrupt extions, which cannot eafily be changed into laudable uitful Seed.

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e second Classis containeth the penury of Natural s, whereby the good Seed should be Generated. Spirituous Seed cannot flow from fuch a kind atter. The causes which suppeditate that imnatter to the Parts of Generation are the dried extenuated Bodies of the Parents, wasted either by long

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long abstinence, or by some vehement evacuation, as Vomits, Lasks, Lienteries, Dyfenteries, Hepatical Fli es of long continuance ; by an excellive Hemorrhage fr any part, by violent sweatings, or any Chronical Dif fes which wasteth the strength, and is not repaired bef Coition : especially a Confumption, a Hectick Feaver indigeftion from any kind of Caule. Laftly, from a fective and imperfect Concoction of the last aliment, the fault of any part. For in fuch cafes the matter wh is separated to the parts subservient to Generation, is stitute of a competent plenty of Natural Spirits, whe upon the Parts preparing and concocting the Seed, ca not perfectly correct this defect, and ejaculate fuch S as is fufficiently abounding with Spirits. Seeing theref that a confiderable part of this Difeale confifteth in paucity of Natural Spirits, it cannot otherwife be, that the iffue propagated by fuch a crude and alm Spiritless Seed should be tainted with a certain Naru Propension to this affect, even in their first rudimer which afterwards upon the concurrence of other caufes eafily deduced into Act.

The third Claffis containeth the benummednefs flupour of the matter transmitted to the Generat Parts, whereof the Seed is produced. For not only folid parts, but also the whole Mass of Blood, and the mors therein contained are obnoxious to that fame fl pour. And from hence it is, that Physitians being to n der the causes of Diseases, do use to say, that the hum and also the Blood are too fluid and moveable, and u duly vehement; sometimes on the contrary, that they unapt for motion, less fluxible, and unactive beneath Mediocrity, & in respect of this thing also a certain Me is most wholsome: but more things relating hither, n be seen above. We will here only prosecute those fau

#### (159)

the Parents from whence this defect of vigor and pain a vity in the matter of the Seed doth arife. These trefore are first the loft, loofe and effeminate Constituand r of either or both the Parents, indiposed to ftrong min a Masculine exercises. Secondly, an overmoist and mite in diet and epicurism, obnoxious to frequent crudities. "htm Tirdly, A delicate kind of life abandoned to cafe and tain reptuoufnefs, flothful, and rarely accuftomed to lamut b, danger and care. Hither you may also refer a tot defect of manly Exercise, immoderate fleep, especially Tation priss in after meate, and any kind of fleepings whatfoea fedentary; speculative life, intent upon foft and ic Sett at and Sciences, as Poetry, Mulick, and the ingthin; to these may be further added, a daily frequenting filter Comedies and other Plays, an affiduous reading of mill aples and Romances, and instead of manly and laudadeand I: Recreations, a loofe expence of time in Carding min al Dicing. Hitherto alfo belong the never failing fruits lafting peace and plenty, fuch as fecurity, indiligence, rft ruit C the like. All these enumerated faults do manifestly cher al utribute a share to introduce a laziness and Effemicenefs in the parts. Seeing therefore that the Blood. in meth gether with the humors contained in it, doth in its e Gen culation wash all those stupified parts, it cannot oor not of d, and rwife be, but that as it glideth along, it must particie fome fuch alteration; and feeing that fome porthat an sbeing in of the transient Blood affected with this stupifactihar the , is transmitted to the Generative Parts, with the vematter whereof the Seed is Generated, it is easie to inabk, # that that Child which fpringeth from fuch princi-Fither es must inwardly contract at least some propension tive bes nformable to the fluggishness and stupour of its Na-3 Certil ing hids e matter, and that that propension after Birth, when e prefervation is taken away by the equal cherifhings

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of the Womb, is by divers caufes without difficulty de duced into a it, wherefore feeing that fuch a dulnels is part of the Primary Effence of this Difeafe, it follower that in fuch vitiated principles there lurketh a propenta to this affect, derived from one o: both of the Pa rents.

The fourth Classis containeth the vitious Disposit ons (if any fuch occur) of the Parents, who in the Childhood were infected with this Difease. For the would transmit into the Children a continuation an hereditary Difease properly fo called. Bat becaufe, we have faid, it is not yet manifest whether the Paren afflicted with this Difease in their infancy shall beg Children therewith affected ; besides, because the faule Di of the Parents may be conveniently referred to any ent of these Classes aforesaid, or to many, or indeed to a of them, it will be fruitless to infift longer upon them. Therefore having reckoned up the faults of the Parents which depend upon the whole Body, in the next place we proceed to their faults which peculiarly refide in the Genital Parts.

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These fults are sometimes a cold distemper, sometimes a moift, when by reason of too much humidity they 10500 are loofned or weakned, whereupon they ejaculate either an unfruitful Seed or fuch as is propente to this D feate, fometimes those parts are infested with a virulent, vitious or waterish Gonorrhea, and they excern a Seed not sufficiently elaborated; the same must be said of the white and red Fluxes of Women. Again, fome things outwardly applied to those parts have reference hither; as Oyntments of Hemlock and other Narcotical things, especially if they be often anointed with them, in like manner, Oyntments that are incorporated with white or red Lead, Chalk of Lead, Litharge, Sugar of Sarurn and

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nd the like, daily and for a long time adhibited to ofe parts. For fuch as thefe blunt the activity of the herent Spirits in those Parts, and introduce a certain lines in them, which being communicated to the red prepared in them, disposeth the progeny to this afft.

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At length we have finished our intended enumeration, not of all, yet at heaft of all the most principal causes uich happen before the Conception about the Genetion of the prolificative Seed, and have any concurnce to produce this Disease, or to dispose to the produon thereof. Now follow the faults and errors of the other in the time she beareth the Embryon in her omb, which also must be reputed among the causes of is Disease before the Birth.

First, there hapneth a cold and meist distemper of Womb it felf, which (as were we filent, is easily maest to every one) may most readily be communicated the Embryon by the perpetual contact of the pmb.

in the Second place, All those things offer themselves ich suppeditate to the Embryon crude and impure vees converted by excrementitious and corrupt humors read of laudable aliment. Hitherto principally begeth the unwhollome and prepofterous diet of Won with Child, especially inclining to moifture, cold-, and the Reaping together of crudities. The fame ngs also happen by the imperfection and defect of first or fecond Concoction, especially when they are excerned by vomit or fome other evacuation of the dities from thence proceeding, but are at length ilmitted with the Mothers Bloed for the aliment of Embryon: Befides, if a moift and cold Difeafe, 25 a ld and moift diftemper with the matter, an ill di-N geition

gestion, a Cachexia or Dropsie, &c. do invide a woman with Child after Conception, it may thereupon eafly happen, that the impure aliment also which nourisheth and cherisheth the Seeds of this Disease, be dispensed to the Embryon.

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In the third place are to be reckoned all those things that defraud the Embryon of due aliment, as any excelfive evacuation, especially a lafting flux of Blood in a ny part ; alfo a rash opening of a Vein, or Philibetony that exceeds in quantity. The fuckling of another child may also divert the efflux of sufficient aliment from the Womb towards the Brefts. Hitherto likewife belonger inordinate fafting, or any indigeftion in the Mother, a ny inappetency after meat, or defect of concoction Moreover, an acute Feaver happing to a woman wit Child, besides other inconveniences, may also defrauc the Child of due aliment ; fo alfo an Hectick Feaver. Al these things do not only infer to the Embryon, a dejection of Vital Spirits, and a defective nourishment, but all they cause a want of natural Spirits. For the Natura Spirits are wasted and diffipated without due nourish ment, and are also destitute and disppointed of necessar reparation. Seeing therefore that a part of the Effere of this Discale confifteth in the desect of Natural Spirits some disposition to this affect must needs be bequeathe to the off-spring from the causes aforelaid.

Fourthly and laftly, exceffive fleepinels of women wit child, flothfulneis, eafe, any vehement labor and exerciafter Conception, do alfo contribute their fhare. For a though violent motions and actions of any kind are for bidden to women in fuch caufes; yet moderate labor watchings and exercifes which offer no violence to the womb, or provoke to abortivenels, do not only conduce the health of the Mother, but in fome degree they dri awu

#### away that dulness from the Emb yon, and augment the heat, vigor and activity of it. And thus we put an end to the first Chapter of the causes of this Disease before the Birth. Those which happen after the birth shall be the subject of our next examination.

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#### CHAP. XVI.

#### The Caufes of this Disease incident to Children after their Birth.

7E have noted in the precedent Chapter, that Infants from their first Origine are seldom afflicted with this Disease, but by reason of the Causes there rehearled, that they are frequently affected with a natural disposedness and propension to the same. We shall now profecute those causes which are apt to actuate that Natural disposition after the birth, or newly and fully to produce this Discase. For it must be known, hat the fame causes which may actuate that pre-difpoedness to this Disease, muy produce this Disease a new. f they be sufficiently intensive in their degree. And herefore we confess, that those children which are prone o this Disease from their Nativity are easily affected ; ut that other which are free from all Natural corruptin fall not into the fame but upon more potent caufes ; nd yet those causes are the same for their kind, nd differ only in the degree. We therefore thought it cedlels to speak of these things diffinctly and apart : it may

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may suffice that we have spoken of them indiferiminately and together.

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At the very entrance, a Queftion there is which importunes a Refolution; namely, Whether Contagion may be numbred among the causes of this Difease, and therefore whether this Dileale in a proper and right understanding be a contagious Disease, indeed he that confidereth this Difeafe unknown to the Ancients, how it first invaded the Western Parts of England, and in few years hath been fince dispersed all England over, will at the first thought eafily judge it to be contagious; and to have been spread so far and wide by the infection of it. But the matter will seem to be otherwise to him that will confider it more intentively. For although this Difease may in some manner endeavor to imprint an affection like unto it self in other Bodies, yet it scarce advanceth fo far, that it can totally produce a Difcale of the same kind. For perhaps it may in one some flight inclination in another Body, yea, sometimes perhaps it may accelerate or haften the invation of an affeft in a Body highly pre-disposed unto it, yet it cannot therefore deserve the Name of a Disease properly contagious: For all Difeafes conspire to change and affimilate those Bodies which are nearest to themselves, vet that is not sufficient to denominate Diseases contagi-For to constitute a contagious Discase properly fo ous. called, it is further required that out of it felf it propagate a certain Seminal fermentation of it seif, which fecretly infinuating it felf into other Bodies, may by degrees introduce into those Bodies 2 Disease of the same Species. But this Disease containeth no fuch fermentation in its effence, neither is it fecretly propagated by a precedent emifion of Seed from it felf which may imprint a Disease of the same Species in the adjacent Bodicsi

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ies. For we have already often faid, That the first efnce of this Dileafe confifteth in a cold and moift diemper, and in a dulnefs and paucity of inherent Spits, which affections if they endeavor to affimilate ay Bodies that are near them, they attempt and underike it by open violence, and not by Inares and frauduince, or a pre-immission of secret little fires. In like ianner, if you reflect upon the Secondary Effence theref, neither the vitiated Tone, nor the deprayed Vital or Animal Function, nor the Organical faults are sund apt and fit in this affect to infinuate themselves to other Bodies, and to propagate their own Species. inally, if we will confult experience, the matter will uickly be vindicated from all doubt. For we frequenty observe Children either of the same age, or very near o the same age, be brought up in the same House, thereof one or other of them is perhaps afflicted with his Difease, whilst a third or many amongst them do scape it. Yea, We have known Children not only eduated under one common Roof, and delighting in the ontinual and mutual fociety of one another, but daily neeting at one Board, and lying together in one Bed; whereof one who hath been ill affected with this Difale, hath not infected any of his companions either by reding or lying together. Which could fearce poffibly appen in a Difease properly contagious. Wherefore Contagion being excluded from the Catalogue of this Difease, we will address our selves to the finding out of uch as are more true and unquestionable. We divide the causes which produce this Disease after Birth into wo Classes. The first containeth the errors which procure it in the use of the fix non-natural things. The ater comprehendech the precedent Difeales of divers sinds, which are wont very often so leave behind N 3 them

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them some Inclination to this affect.

As for the former Claffis concerning the abufe of the fix non-Natural things, fo far as they relate to this Difeafe, feeing that children are feldome difcompoled with any vehement paffions of the mind, and can thereupon wery difficultly fall into this Difeafe. Again, in regard that the ufe of Venery appertaineth not unto them; we will reduce and limit these cates to the five subsequent heads. To the Air, also to what things soever extrinfecally occur, or are applyed to the body, to meat and drink, and such things as are inwardly received, to motion and reft. to the kind and manner of life, to actions and exercise, to fleep and watchings; laftly, those things which are preternaturally retained in, or severed from the body. These several things we shall examine in the propounded order with all convenient brevity.

#### Of the Air, and fuch thi gs as happen outwardly.

A cold and moift Air doth powerfully centribute to this Difeafe. For feeing that it doth more eafily fteal into the external and first affected parts in this Difeafe, then into the hidden and fenced bowels, it directly helpeth to imprint in those parts that unequal; namely, that cold and moift diftemper. The conflicution of this kind of Air, is chiefly predominant about the beginning of the Spring, at which time the Nurses ought to be cautious and circumspect, how they too confidently expose their children which are subject to this affect, to the injuries of the Air; as also when the Air is cloudy, thick, rainy, and full of vaporous exhalations. Hereupon places near the Sea, great Marishes that are obnoxious to much rain and showers, and fed with a great number of Springs, are wont to be (cateris paribus) very fruitful of this affect.

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I like manner houses near the banks of great River's and Ponds or Meers are for this purpole condemnedloreover, trequent bathing and washings with sweet ater, although they be applied actually hot, yet in reard that they are potentially cold and moist, they are so justly culpable; for they do in some fort communite their diffemper unto the parts whereunto they are shibited, and more or less cause a softness and loofness those parts, and make the circulation of the Blood too ppery.

Hither we may also refer cold and moift liniments, a, to fuch as are loofe and flippery, being too often connued in that tender age, especially about the Spine or e Origine of the Nerves : laftly, foft linnen cloths, if ey be not well dried, they cherish the roots of this Diffe. For this cause amongst others, it hapneth, that the hildren of poor people are the lefs obnoxious to this isease, because namely, for the most part they are enrapped in course cloths, and woolly integuments, cach which doth rub and tickle the parts thereby, exciting d augmenting the inward heat, and irritating a more pious afflux of the Vital Blood unto the habit of the ody, and are therefore very effectual to banish this Diffe. But the foftned fine linnen doch neither irritate the at into the external p rts, nor laudably cherish it. For they chance to be for some short space of time removed om the touch of the parts, they prefently loole their armth, and at the next touch they convey a fense of Idness into the parts. , Wherefore such linnen cloths ing in the number of those things which are dedicated ly to extrinfecal application, and feeing that they are urtful by their lole coldness and fortness, we have referred em to this first Classis of causes, & the first part thereof which N A

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which containeth cold and moift things outwardly occurrent.

en mia In the second place, the Air being infected with any particular infection, as noxious Metalline exhalations, which for the most part fight against the inherent Spirits of the parts, by a kind of venemous malignity, and do itt a either extinguish them or drive away and diffipate them; in force withall they diffolye the Bone of the parts, and the md thi pulfificative force, elpecially in the parts external, where lich at they first happen, they at least diminish, if they do not ntronler weaken it, and affect it with a languidness. These things Eller are principally cauled by exhalations from Lead, Anti-Ta Co mony, Quick-filver, and the like. Moreover, Oyntments made of the fame, are almost alike perillous, if the first tating. affected parts be frequently and unfeatonably anointed therewith; although perhaps these things do also belong to the fourth title of this Claffis. Finally, we have obferved fome Children who have been anointed with Mercurial Unctions for the Scabs, to have fallen atterwards into this Diseale.

In the third place, an Air vehemently hot and fubtile, ach are extreamly attenuant and diffolvent, may likewife be Ctra numbred among the caules of this Dileale, becaule it al-12. 2 Jureth forth, diffipateth and confumeth the inherent Spirits. In like manner, hot liniments, and efpecially dil-000.0 cuffive withall, Chymical Oyls diffilled, and not lufhciently corrected by the commisture of things temperate; for these in such a tender constitution of the parts, do eafily melt and refolve the Spirits into a volatile and Airy thinnefs, and by confequence infer a penury of Inherent Spirits. Hither also belong tharp, faltish, hot and dilcuffive Baths, especially if they be unseasonably and unmeasurably used, for these no less then the former do waft and confume the Spirits.

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ourthly and laftly, An Air filled with Narcotical wes or exhalations and baths, fomentations and Linits made of Soporiferous and Narcotical ingredients, as mlock, Henbane, Opium, Nightshade, and the like, externally applied, are very fitly reducible allo to this For they eafily introduce a benummednels into dis. first affected Parts, into which they first convey ir force. Which benummedness is not only it felf a rt of the first Effence of this Disease, but it also eafily lleth and diminisheth the, Vital influx in those parts, d confequently is allo a caufe of that part of the Seconry Effence of this Disease, which confisterh in the tel Conftitution, which thing we have already explaid more at large. And thus much of things outwardly uring.

#### Secondly, Of Meat and Drirk, and things inwardly taken.

To this Title there belong first aliments of any kind hich are too moift and cold, for these things manifestcherish the distemper, wherein a part of the Essence this confifteth. Hither therefore we refer most kind Fifh, and crude Meates which are not well prepared by o-ition; also all those things whatfoever they be hich cause a defect of concoction in the Ventricle. herefore the feeding upon new Meat, before the forner Aliment is concocted, is very hurtful for Children isposed to this affect; and in this respect, a plentiful Diet is altogether to be abandoned, and a thin spare Diet ought to be observed, for too liberal feeding doth verwhelm and choak the heat, and therefore must needs ccumulate many crude and raw humors. And peraps this one may be reputed among the efpecial cauies,

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fes, why this Difeafe doth more frequently invade th Cradles of the rich, then afflict poor mens Children. I like manner cold and moift Medicines taken inwardly and alfo fuch as are laxative, and endued with an inter nal flipperinels, do manifeftly relate hither. For the things do not only infer a like diftemper, but they pro duce a *Relaxation* in the *Tone* of the parts, and affect ther with an internal flipperinels; and in a word, they rende the current of the Blood through the first affected part over-flippery and eafie.

Secondly, Nourishments that are too thick, viscou whith and obstructive belong hither, especially because they in a Monterrupt the equal distribution of the Blood. Hither would refer fleth hardned with smoke, and feasoned with much Salt; in like manner, Salt Fish and Cheese, almost o any kind plentifully fed on. Bread newly taken out o the Oven, and not yet cold; also almost all sweet things adding condited with Sugar, unless they are withall tempered with Wine, or cutting or attenuant. Obstructive Medicines likewise of any kind belong hither, unto which we may further add such as are Partotic 1, and what seven being drank, induce a benummedness into the parts.

Thirdly, Nourishments that are of an extream hot and biting quality, sharp and corrosive, as old and strong Wines, efficially being drink upon an empty Stomach, Meats also that are seasoned with much Pepper and aromatical vawces, must be connumerated among the reputed causes of this affect: For these things in such a tender confistence of the Parts, do easily feed upon, and devour the inherent Spirits. The same thing is also affective by Medicines that are immoderately hot and difcussive, yea, these are far more powerful to hurt, because they more quickly and forcibly spoil the inherent Spirits, than the prementioned Nourishments.

Thirdly,

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### Thirdly, Of Motion, Reft, Excreifes and Actions.

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fotion and Exercises, if they exceed a mean, they, Fach the diplye the Body of a little Child into a profuse Swear, not as withall they fomewhat diffipate the inherent Spirits Millolie Parts, and therefore for that reason they may conatta it : the introducing of this Difeafe : although we conce it falleth out exceeding rarely, that Boys are infe-4 with this Disease, whereof we discourse. But a dethe fe of Motion, and want of Exercise doth most frequenthataly rea and most effectually concur to the production of that affect. For the Spinal Marrow, and the Nerves amour thence arifing, and the other first affected parts enole : chiefly for Motion and Exercifes. A flupidity theremilito and fluggishness of those parts, is a cause that neither tent inherent heat is sufficiently cherished, nor that heat fin en nuated, nor the cold diftemper stealing in banished, manthe excrementitious and superfluous moistures expelwhite by a due transpiration, but it permitteth them to be puts al Red with a certain foftnels, loolnels, and internal lunhability, whereupon the Arterics also distributed unto ad the n are faintly irritated, yield a dull and fl thful Pulle. Somm het do they render the parts somewhat turgid or twelmuile but leave them lank and tubliding. By which means there tirculation of the Blood becomes flow and leffened, ichisa more flippery than is meet, the production also of the wir l heat must thereupon be necessarily feeble and isality k, all which confiderations do fufficiently evince that is an efficacious cause of this Disease. ot site a

Fourthly;

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### Fourthly, Of Sleeping and Watching.

We grant, that Children should sleep oftener and lor ger then Men ; yet if it be exceffive even in Child-hoe the matter is the fame as in defect of exercise and mot on. For fleep is a certain reft and privation of watch ings, or of the exercile of the fenfes. But watchings con fift in the very exercise of the fenses, according to Ar stotle in his Book de Som. & Vigil. Wherefore the evi that we have described to arise from the defect of mot on and exercifes, the fame alfo must needs happen fro immoderate fleep. On the contrary, in that tender ag inordinate watchings are no lefs noxious. For they not only retard the concoction of the aliment, but the 第113 likewife taint the Blood with a kind of acrimony, at confequently diffipate the Principals of the Natural Col ftitution of the first affected parts, and without difficult introduce a defect of inherent Spirits.

#### Fifthly, Of things preternaturally cast out and retained.

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All the internal caufes of Difeafes might be perhapend not incommodioufly reduced to this title. For any this whatfoever contained in the Body, and preternatural altered, as they are preternatural, they indicate their at the lation, and may fo far forth be reputed among things be caft out, which are neverthelefs preternaturally retained ned. But we more rightly grant, that all internal can may be diffinguished into two kinds : one whercof cor taineth those things which are preternaturally retained and caft out : the other, such things as are contained in the Body being preternaturally altered. For these la ter are not only taken away by cafting out, but also b Alter

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leation, they may be reduced to an agreeable proporof Nature. However it be, there is a great affinity en the Humors vitiated by Alteration, and the exintre intitious Humors which are retained. For there many and fuch various wayes of cafting out in the mino, that scarce any humor can be imaginably produdince y Alteration, which doth not properly relate to the him ive and excretive faculty of some Bowel, or some part, and is destinated to be severed and evacuated nge it ; and therefore though the errors of the first contille discion are scarce corrected in the second or third by print ation, yet they may be mended by local motion or interion, made from fome part of the Body, the unproof this e parts being separated and rejected. In like manbut te he mais of blood being any ways preternaturally al-., or infected with some Humor, the peccant matter alcov. Ih cannot be otherwise fubdued by Alteration, is TUTE! ide so kly exterminated perhaps by excretion made from part or Bowel (unlefs withal the fecretive or exve faculty thereof be hindred) therefore it must es be of great moment for a Phylitian to know what Tetal nors are particularly predominant in any Difeafe, and that determinate wayes they may be most properly XX 1 out according to the intent and purpole of Nair any

or there are as many subordinate species of things dout, as there are diffinct substances of the Bowels other parts definated to that office in the Body. For credible, that the Liver doth caft out one thing, the nyes another, the Sweet-Bread another, the Spleen ther, the Stomach and Guts another, the Lungs ther, the Brain another, the Stones, the Matrix, the neys, the Kernel under the Chanel Bone, the glandus parts of the Laynxes, the Throat and Jaws another, the

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the fcarf "Skin and the Skin another. For it feem the fcarce admirable, that Nature should build and prep is, for her felf Organs of different kinds, and yet should and make use of divers of them for the performance of a user and the same action. Therefore when the excretion and any of the said parts hapneth to be restrained, a cert and peculiar filth will flow out from thence into the main Blood, and so there will be so many differences of this preternaturally retained, as there are kinds of parts i when there will be as many kinds of vitious excretion, eith there by excess, defect or depravation, as there are divers we same thorough which the excretion may be made.

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If any man demand, Whether the feveral kinds with things excerned be fufficiently discovered and underthat food by us : We answer, that an exact knowledge The defired of that particular humor which is to be caft o Were thorow the new Veffel of the Sweet-bread, then in the (wh next place, what is caft out by the Kidneys, the Kert Miare under the Chanel Bone, and the glandulous parts of t they Larynx: yea, perhaps it is yet fcarce fufficiently know Tran what is rejected by the Spleen. For this caufe therefo amongst others, it seemed good unto us to superfede this place any high and accurate disquisition of thin ton m secerned and retained, either in relation to the parts at wayes whereunio they belong, or in order to the prele affect, and rather to infift on that fourfold division Humors made by Galen ; namely, into Choler, Phlegn Blood, Melancholly, adding onely undue transpiration and fweating. For although we may doubt, whether th division can deduce the humors to the subordinate Spi cies, (as we have noted above) more then four par diffinct in the species are evidently dedicated to the cafting out of the humors ; yet feeing that this divisit int

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he Humors is not only approved by all Claffical Phi= lans, but that it is likewife profitable in it felf, and at It reduceth the Humors to certain Heads or Kinds, (pwever perhaps every kind may comprehend under reverall species) we are resolved for the present to inrupon it, and so much the rather, because under a ge-I al notion, it very fitly conjoyneth and containeth se th things altered and preternaturally contained within, also things to be fpied out which are not yet excer-, and in that respect it will case our burden and con-If our work. For whilft we make our proceedings in is manner, it will be needlefs to inftitute any other uliar Chapter of the Causes of this Disease, namely, (those altered which are preternaturally contained, feethat they are comprehended, as we have faid, under Is Title.

We reduce therefore the internal Caufes of this Dife (whether they be excrementitious humors retained, vitiated by alteration) either to Choller, or to Mecholy, or to Flegm and a Waterish humor, or an une Transpiration and sweating, for the Blood properto called is in this affect scarce observed to be faul-

You may object, That Practical Phylitians do in this lease commonly prescribe the opening of a Veinin the holp of the Ear, observing that Evacuation to be very profita-, which Reason could hardly admit, unless the Blood were ore degree peccant ?

We answer, That this Remedy is available, not in spect of the universal plenitude of the Blood, but by afon of a peculiar plenitude of the Head it felf. For have already thewed how that the Blood is unequally spensed to the parts of the Body, and indeed illiberalto the first affected parts, but to the Head superabundantly,

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dantly. Therefore although there be not an univeria edundancy of the Blood in this Difease, yet in respect o the particular Plenitude of the Head it felf, fuch a particular emptiness, is perhaps profitably instituted, those outward and small Veins of the Ears being cut. may reply, that we by this Answer do indeed decline th universal Pl thora, but that we grant a particular on of the Head, which ought no less to be esteemed a cause of ficknefs : We answer, That we have at large explained this fault of the Blood, when we discoursed of the unequal distribution of it, unto which place it properly belongeth, feeing that it is a caufe of the Secondary, no of the Primary Effence of this Difease ; and therefore a vain and superfluous repetition thereof ought not in this place to be expected. We will now therefore proceed to our purpoled disquisition of the Humors, and likewist the Transpiration aferefaid.

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First Choller (whether by this word you understand that excrementitious humor in the little Bladder, and the Cholerick pore, or a hot, dry, fharp and bitter par of the Mass of Blood, or that unfavory humor that taffeth like stinking Oyl, begotten and flowing in the Stomach by some corrupt aliment, especially that which is fat, adust or salt; or certain sharp and corrosive Excresicences produced in the Body by corrupt Blood) if is abound and luxuriate in the Body, very probably be a cause of this affect.

For although it may rather feem to impugn that cold and moift diftemper, which is a part of the first Effence of this Difease; yet in regard that it is apt in some for to hinder the nourishment of the Parts, either by a vehement irritation of the expulsive faculty, or by attenuation of the aliment, and to extenuate and wast the very inherent constitution of the Parts, and by confeouenc

(177) tence to confume and diffipate the Natural Spirits, it ay not unjustly be numbred among the caules of this ifeafe. For every one knows, that Perions of a Cholick Constitution are lean, and of an extenuated habecause of the Reasons aforefaid. Secondly, A Me= scholy humor (whether you understand the Earthy tion of the Blood, or that faltich or tartar-like matrexcreted in and with the Urine, and when the Urine oweth cold, incorporating into little Sands; or that vr humor powred into the Ventricle, perhaps by the leen (though not through that fort Veiny Veffel, the Ancients believed) or those terrene Parts of the amed Aliment, which are evacuated by fiege with the her Excrements) understand either or any of them, if s humor aboundeth, and be not purged out after a due inner, may be blamed as a cause of this Disease. For t, that humor which is the more Earthy part of the ped, if it exceed a just proportion in the Mals of ood, it rendreth it unapt to nourish the Parts, especiy those that are first affected; for the first affected rsare of a more noble texture than the substances of Bowels, or the bony parts; and therefore we have eady noted how the Parenchymata of the Bowels and Bones do eafily admit nutrition, and by a way like to digeftion; but those former parts do require a far re exquifite secretion and elaborated affimilation. And sis the Reason that the fleshy parts of the Bowels are atly imputed among the impure and groffer aliments; nely, Because they are nourished with a course Blood, not accurately elaborated before the Union. Sedly, Any great accumulation of Saltish, and Tarlike matter is an Enemy to Nutrition, and is rar diffipative and devouring than favoring augmen-Thirdly, The fowr Humor of the Ventricle is on. totally

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totally ravenous, and as it were hunger-ftarved, and perhaps where it aboundeth it eafily communicateth us the Blood fuch another Depredatory quality : Fourthly and laftly, The Terrene Dregs of the Belly may if they be inordinately retained, taint and infect the Chylus and render it unapt for the nourifhment of the part. Fi nally we grant, that every propounded kind of Melancholy fuperfluoufly co-augmented, or preternaturally retained, doth not primarily, properly and directly concur to the production of this evel ; but neverthelefs w are of opinion that indirectly, and after the manner propounded it may contribute fomething to the generatic. the of it.

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Thirdly, Flegm (whether it be taken for the moi fter and colder part of the Mais of Blood, or for th wheyith part thereof, or for the flow humor of the Sto mach and Guts, or for the Spittle, or for the Snot of the Noftrils or Jaws, or for that peculiar humor, which perhaps the new Veficl of the Sweet-Bread doth ule t evacuate) however you take it, if it be retained, or a bound in the Body, it hath a direct reference to th Difeafe, and properly deferveth to be called the caul thereof. For this humor is cold, moift, flow, thick, be nummed, little spirituous, fort, and affected with an in ternal flipperinefs; all which things do exactly compl with the primary and fecondary Effence of this Difeafe : they have been propounded. Wherefore upon a fuper fuous accumulation of this humor, feeing that there fue ceedeth a conspiracy to the production of this affect, ought justly to be effected a proper caule and a Primar Agent.

Befides these humors, undue Transpiration, as all immoderate or defective sweating may be sometime numbred among the causes of this affect.

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For exceffive Sweating, as allo immoderate Transpis tion, doth diffipate the Spirits, and withall diffolvech parts, especially the external which in this Discase the first affected, and the inherent Spirits being confud, it eafily leaveth a cold diftemper behind it. For a just excitation and confervation of the heat of the ts, there is required a certain due and regular strife of exhalation between breathing, which if it prove cient, the actual heat allo (because it partly confistc in this strife (becomes very feeble and languid, and parts are eafily exposed to a cold diftemper. But we e already spoken of this matter at large. On the Catritrary, Sweat preternaturally restrained, as also a very ill or leffened Transpiration, doth eafily kindle a Feawith hear, and therefore it likewife injureth the Spirits diffolveth the Parts, and rendreth them afterwards e Smally obnoxious to a cold diftemper.

Finally, That we may comprehend all in a word, Any or, 11 and haor exectned above Region or Measure, doth easily the oduce a colliquation of the Parts and a diffipation of n of inherent Spirits, and confequently disposeth the Body in ou his affect. And let this fuffice to have been spoken his on-Natural things, and the causes of this Diseale ithe Lince arising. thy can

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### CHAP. XVII.

Precedent Diseases which may be the Cause this Disease.

Hefe Difeafes, in respect of their proper Effentiought only to be called by the name of Difeafes but in respect of this Difeafe they may right paffe under the notion of causes of Diseafes, becaus they leave it behind them as one of their Effects. Ye although many of them (as they relate to the Parent and so imprint a Natural pollution in the Off-spring are rehearsed above, nevertheles by right they here de serve their confideration, yet in a different respect at order. These Diseafes we reduce to three Kinds or gen rai Heads:

First, To Discales that have some affinity with the affect.

Second y, To Difeafes that extenuate the Body.

Thirdly, To Diseases inducing a stupor and dulne in the first affected parts.

#### Of the first Kind.

Diseases having an Affinity or holding Congrui with this, we call those who at least in part confist in a same with the Essence of this Disease : of this kind a any cold distemper, or any moist distemper, also at cold and moist distemper. For a part of the first Essen of this Disease includeth a cold and moist distemper, a

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those distempers do partly agree with this Affect. Hier also belong a Phlegmatick Cachocymy, a Melancho" and a mixt ; an obstruction proceeding from fuck like mors, a Cachexia and a Dropfie. Yea, we may likele refer hicher in regard of their affinity, those Difeas wherein the inherent Spirits are fomewhat confumed; r a part of the Essence of this Disease consisteth in a ufity of those Spirits, but otherwise they are more tly referred to the fecond kind. In like manner, the isease, wherein the first affected parts are benummed d stupified ; may likewife in respect of their affinity be therto referred, although they belong more properly. the third kind of Diseases. Moreover, those Diseases nercin the Tone of the parts is infechled and loofned, uft here be lifted, for they include a part of this discase: mely, that which confifteth in the loofneffe, litheris, internal flipperineffe and fortneffe of the Tone, as ey are above described. The Philosophers fay, That e Elements which agree in like qualities, are eafily anged one into another; by the fame reason that these leafes which partly agree in the fame Effence, do cafiadmit a reciprocal change from one to the other. Sofee a quotidian Ague, which agreeth with a putrid aver in a préternatural heat, upon every flight Caufe generate into it. Yet it must here be noted, That cat difeafes are not fo cafily changed into imall, as fall ones into great. Besides, not all Diseases which rhaps participate alike of the fame Effence, are with equal facility reciprocally changed. For fome Difeas are more subject to change into others, with whom part they have fome agreement than others : And at for other Reasons beside the faid agreement, howet it be, if a cold and dry distemper should happen to a hild, that would eafily change into a cold and moift ; both

both in respect of the congruity of each Discase to cold and also a peculiar inclination of that tender age t meisture. For by reason of the coldness, the digestie becomes imperfect, and hereupon crudities or crude hu midities are engendred, which a cold diffemper in f tender an age would eafily and immediately follow. More , over, a cold and moift diffemper in regard of the cold neffe would make a flow Pulle, and in regard of the moifture would make it the more flippery, and the leffe vilcous, whereupon the Vital heat being diminished, a benummedness and dulness, by little and little would ftea. It me upon the Vital Spirits. Finally, in respect of that flip. perifh recention arifing from the internal flipperinefie of the the Parts, and by reason of the weak concoction, the inherent Spirits of the first affected Parts would also by de- adia grees be diminished, and so by little and little after this manner the perfect Effence of this Difease will be in-Hes troduced.

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#### Of the second kind.

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Most Diseases making lean, or any wayes extenuating the Body, although perhaps they no way participate of the Effence of this Di ease (like the Diseases of the first kind) yet they do dispose the Body to the invasion of this affect, and may also leave it after them. For all great quotidian diseases in processe of time do extenuate the Body, wast the inherent Spirits, and dissolve the Tone of the parts; and this attrition and attenuation of the parts doth chiefly refer to the kirst affected parts in this difease. For as we have already afferted, the substance of the Bowels are not so easily subjected to dissoiution or diffipation. But in the diffected Carcasses of those who have dyed of Chronical Affects, the Bowels

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e observed to be no less ; yea, many times much bigger hen the external parts (which in this Difease are first fected) are for the most part made lean with the veheency of the affect. And therefore feeing that extenuang Diseases do chiefly communicate their force into e first affected parts, it cafily falleth out that in Chilen they help to introduce this Disease. For the inhent Spirits of the first affected parts being very much afted, a cold diftemper must needs follow, which by alon of the crudity is (as we have laid above) received a moist one and a benummedness; because the heat, tivity, and vigor of the parts do chiefly depend upon e plenty of Spirits. And thus we have exhibited the anner whereby this Difease doth follow, and as it were ead in the footsteps of other foregoing affects of this nd, which we now further fub-diftinguish into three laffes.

The first comprehendeth Difeases extenuaring and nfuming the habit of the body by wayes infenfible ; hier are referred almost all Feavers, especially the Hectick d Confuming, an Ulcer of the Lungs with a putrid Fear. Also any continual Feaver that is violent, as a burng, malignant, pestilential Feaver, a Pleur fie, and an flammation of the Lungs, also the small Pox, and the eazels when they grievoully afflict the Patient. In te manner intermitting Chronical Feavers. Laftly, I Chronical Feavers that torment with vehemence do e same. The second Classis containeth Diseales conming by manifest passages, and evacuating the folid bitance of the parts. Hither you may refer immodete vomiting, a Lycatery, Dy'ente, y, Lask, the Hepatical lux, the Diabetes, any profuse Hemorrhage or Bloody lue, any excellive fweating, any great Ulcer in any rt, eating deep, and daily cafting out much matter. For 04

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For all these Affects do evidently extenuate the habit of the Body, and cause the introduction of this affect.

The third containeth the Difeafes which are faid to extenuate the substance of the parts not directly, but by consequence : as all Diseases interrupting concoction, of the diffribution of the Blood. For these prohibit the reparation of the parts continually fed upon by the Vita heat. Hereupon several diseases of the Ventricle, Guts Mesentery, Sweet-Bread, Spleen, Liver ; Yea, diseafes in the Mouth, Jaws or Throat, which hinder only the afsumption or swallowing of the Meat, may in this respect be numbred among the caufes of this difeate. As a diftemper, a tumor, a nauseating, a feeble appetite of the min ventricle, a distemper, an obstruction and Schirrhus et sub the M fe tery and Sweet-bread, or the Liver Spleen, & the # N like effects of any of the faid parts, which by any means while frustrate the due concoction and distribution of the non-Idrivit rifhment, and thereupon extenuate the parts by defect of 2 Bo nutrition.

#### . Of the third kind.

Discases that induce an aftonishment to the first affefted parts, do also by a peculiar propriety conspire the production of this Affect. For the Natural heat of those parts is fomewhat dulled by them, and is rendred less effectual : whereupon a cold diftemper stealeth in by degrees, which is also (as hath been faid) casily waited on with a most diftemper, a softness and internal flipperiness. Moreover, the Pulse of the Arteries reaching to those parts, is secretly and by little and little weakned, the diftribution of the Blood, and the Vital Heat is diminished, the parts themselves are sparingly nourished, and at length there comes a desect of Natural Spirits. So that from this Root also, for some time perfevering the

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Effence of this Difease may at last bud forth. The oplesy, Palfy, Lethargy, and the like effects do chiefly tit. the ong hither. Yet Children do exceeding rarely fall ba o this affect from these fleepy Causes, and fo rarely, dia, It we have not yet observed this Disease to own its beibit tuning to fuch affects. If any demand a Reafon of this ity; we fay, that the Bodies of Children by reason of the Vi is Guisir permeability and thinnels, are feldom subjected to ofe affects; but if at any time they are invaded by them, Difease doth not first affault the Natural or Vital, but v. the Animal Confficution, and confequently procureth IS ICA the most part a deprivation of the Animal Faculty, Asal ore it interrupteth either the Natural or the Vital. ireof t the benummedneffe whereof we now speak, belongeth WI DE the Natural Constitution, into which it cannot be een, &t fently transferred. Moreover, they are eafily and speeny ma y driven out, by reason of the facility of transpiration the m the Bodies of Children, if peradventure those affects defet gently invade them : but if they rage and tyrannize, y eafily and speedily dispatch and kill, as being in their n Nature most terrible and grievous Diseases; and sooner, because of the weakness of their Constitutifift at over whom they prevail. But which way foever they ipirt pen, they fcarce continue to long, as with furficiefficacy to imprint this benummedness in the Natus rend Constitution of the parts. Yet we grant, that these ethan As may, if perhaps they perfift longer with life, affe.? THE Natural Constitution with that benummednesse, fo rnal A t this Dilease may follow thereupon, although we reach neither justify, nor affert it upon the credit of a fin-RU oblervation. tat B

But the Diseases which do most frequently introduce astonishment in the Natural Constitution of the affected parts, are those very same which kinder Children

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Children ar r way from ordinary actions and due ex cifes, especially from the use of their feet, as the luxation fracture, or some wound of a foot, or thigh, or the leg the Back-bone : also tumors and pains, or the like fects, whether they afflict the parts aforefaid or othe provided that they hinder the Children, so that the cannot walk, or play standing upon their legs, or u any Masculine Exercises. For hereupon by degrees the wigor and heat of the external parts waxeth dull, whi in this evil are the parts first affected, and from the the other parts of the Effence of this affect, follow by uninterrupted and linked succession, as whose over with may see above.

Weh ve now run over the Caufes of this Affect, at t Bu thould in the next place proceed to the differences ther 離し of, but that two difficulties do here interpole themselve A DI which properly refult from a higher confideration of the Caules propounded. For all those Caufes now alledge "big feem as well common to Boys of big growth, as to Chi mile dren, whereupon it may very pertinently be enquire "Ya How it comes to pass, that they which are grown to ma the Estate are sot infested with this evil, as well as Children and Then again, Seeing that the Caules propounded are a of them almost common both to England and many oth ALKO! Countries, and some of them to all Climates of the Earth : It may be demanded in the fecond place, W this D seafe is more frequent and rife in England than a R.C ather Cousties? These Questions we shall examine ALTER . order, and shall freely deliver our Judgment concernin thent.

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### CHAP. XVIII.

### The former Question.

THy they which are elder in years are not equally abnoxious to this Difease as Children ? The terms of the Question feem to infinuate, that this Afmay happen, though very rarely, to those of big But we referve the folution of this doubt till the le of the present determination. Therefore in the an time the Constitutions or dispositions both of ildren that are chiefly obnoxious to this Difeafe, and of bigger Boys which are rarely subject unto it, must ppofed, and every way confidered and thought on : of Youths, Men and Old Men, and that in order to Affect. For the Question is not absolute, but comative, therefore the first and best way of determining ill be by a mutual comparison between the different ofitions of the faid Subjects, how they admit the imlions of the propounded causes either with cafe or dit-Ity. Then certain accidental and peculiar conditions oung Children, under such an age must be likewife idered in respect of which they are under one age red more, under another leffe obnoxious to this ale.

hat we may the more successfally declare the former parison, we will diffinguish the ages of them. Here omprehend Children of fix moneths of ag?, a year two, three, four years old; there we understand is loce thole of five years of age or more, Youths, Men and O Men, and thole we call by the general name of Junior and thele by the name of Seniors, unless perhaps the matter may require a fubdiftinction of the greater for these things being premised, we address our felves to the collation.

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First, The Younger Children are ofa colder temp rament than the Elder. For the heat of the temper ment is augmented from the time of the birth to ma eftate, at which time it standeth at a stay, being far mo intensive than that of Children, but afterwards it d clineth by degrees unto extream old age, and a little b fore that extream age, it falleth into the fame degree it held in the time of Child-hood; but before the at proach of this term of extream old age, the temperame of aged man is more hot than that of Children, for a though young Children may enjoy a greater plenty Natural heat, and abound with Natural Spirits, y there is no necefficy that they therefore must be of a ho ter temperament, for there is required a concurrence many things to constitute a hot temperament, belide th inherent Spirits, and the inherent heat'; as for exam ple, a large portion of Cholerick humors; and witha or chiefly a ftrong endeavor of the Vital faculty, namely in the Pulles, and the Vital Spirits in their circulation Seeing therefore that the younger Children are mor cold, it is no wonder, if they be more subject to col Difeases than others, such as this is. As for old mer elpecially fuch as are inclining to extream old age; w grant, that they also are more cold, and upon every light occation obnoxious to cold Difeales. Wherefore frot hence, namely, from the coldneffe of the temperament, w infer no difference between younger Children and theil

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men, in respect of an aptitude to fall into this affect. Secondly, The younger Children are more moift than elder; for to wax old, if it be taken in a found ce, is to wax dry. For although old men after their nner may be likewise obnoxious to moist affects, as tarchs, Obstructions, a Cachexy, a Dropsie, a Palsie, a thargy, a loofnefs and trembling of the Nerves, and like evils, yet really there is some difference between noift diftemper which happeneth to Boys, and that ich befalleth aged Persons. For in Children an adntitious humidity conflicuting the diftemper; doth not ly penetrate the most retired inbstance of the folid rts, but they are totally incorporated with the fame : it in old Men the folid parts, even then when it is ened with a moift diftemper, doth not feem to part with earthineffe, but to be in some sort compounded of it Earthy Nature, and a certain adventitious, crude d moist Juyce, or else an excrementitious drunk into e pores, or into the substance of the parts, yet it is not ficiently incorporated or united. For as Sand being enched in much water, retaineth all its Earthy fubnce, however it be somewhat moist; So also the Bes of old Men, however they may be moistened with ide and excrementitious humors, yet do they not defite that terrene fubstance, or that part which by the ymicks is defigned by the name of a dead Head, which ey daily accumulate unto themselves from their first ginning. This diffemper therefore of old Persons is urious not genuine, crude and not perfectly digested to the substance of the parts. And therefore although e grant that old men may in their way labor with a wift distemper, yet it is manifest withall by what hath een faid, how great a difference there is between this of zed persons, and that of young children. Moreover, that this

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this moift diftemper of old men is ileffe Homogeneal t the prefent affect, then that of children, appears plain from hence; becaufe it produceth not that foftnefs an tendernefs of parts in old men, as we fee it doth in Chil dren, neither doth it equally difpofe them to a diffipatio or colliquation of the inherent Spirits, or any flipper paffage either of the Blood or Exhalations, which ar fuppofed in this Affect: But on the other fide, it rathe rendreth them obnoxious to obfructions, and the othe cvils recited before, a comparison therefore being mad between the cold and moift diffemper incident to younge Children, and that which is wont to affect old men, ther refulteth a pregnant reason, why aged People are not 1 fubject to this Difease as Children.

Thirdly, Young Children, although they naturall abound with inherent Spirits, yet by reafon of the easies of transpiration of their Bodies, and because of the laxity time tenderness and incoherence of the parts, they are much more prone then Elder perfons to diffipation and colliquation tion of the Inherent Spirits, and by consequence upon lef and and flighter causes they fall into a want of them.

Fourthly, Younger Children by reason of that vei fame weak confistence of the parts, are also rendred mor obnoxious to an aftonishment than the Elder. For to the the vigor and activity of the parts, there is required befides a just plenty of Spirits, a strength of their coherence and confistence.

Fifthly, it is not needful for us to add any thing concerning the Tone of the parts, feeing we have to ofter infinuated the weaknels of it in Younger Children in respect of the Elder, and any man may observe that upor the increase of years the Tone is more and more confirined.

Sixthly, As for the diminute distribution of the blood

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un onhe first affected parts, (which we have already proto be a confiderable part of the secondary Effence of disesse) We say, that the Elder Children do use ison eftrong and frequent exercifes then the younger, therefore that the Pulles of the outward parts are in them, and that a greater : is railed and cherithed in them, and by confequence ma old diftemper is more potentially driven out of s it n 11. the of

eventhly, As for the Organical faults, namely, the mented magnitude of the Liver, Head, and their fels; it is a known thing that the proportion of parts is more stable and confirmed in the bigger Idren; and on the contrary, that in the Younger they eafily moved and altered, but the augmentation cea-, they are not any more afterwards altered, without e unufual and weighty caufes. So that even in this eft the younger Children are most subject to this are m ale.

et us therefore conclude the parts of the Queftion, it young Children in respect of their Natural Conttions and dispositions are more obnoxious to this then those that are Elder : and so much the more younger they are.

ut we must not waive an Objection, that here we t with, which also coth very fitly convey an occafif paffing to the other comparison; namely, of young ldren amongst themselves. For if young Children is manifest by what hath been faid) are more prone his Difease by their Natural Constitution and aispo-", and the younger they are, the more subject they are : comes it to pass, that Children rarely fall into this t, before they are fix moneths old, and somewhat more? according to the Opinion delivered, Children chould

thould seem to be principally subject to this Disease in mediately after their birth, which yet experience difa pointeth ; yea, rather indeed it witneffeth the contrary namely, that Children before they are nine moneths of are seldom or scarce ever afflicted with this Disease. He therefore it will be needful for us to declare that oth comparison of young Children among themselves. it cannot be, that this Affect thould fo constantly fpa Children, chiefly disposed unto it, and frequently in vade those that are less disposed, unlesse some differen did intervene, which did in a diverse manner relate thole ages, and which notwithstanding the propensity Nature doth retard the invation of the Difeale, b.fo the first twelve months were compleately expired, and y afterwards either doth not at all or not fo potently defer Children from this Disease. Here therefore we must fu the very reason of the difference between these ages which that we may the fooner do, it will not perhaps! impertinent to take special notice by the way of the ages, which upon the authority of experience, are oblery to be more frequently affected with this Discase, at likewife those ages which are least afflicted with it.

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We affirm therefore, that this Difeafe doth very ran ly invade Children prefently after their birth, or befor they are fix moneths eld; (yea, perhaps before the nimmoneth) but after that time it beginneth by little at little daily to rage more and more to the period of eighteen moneths, then it attaineth its pitch and exaltation and as it were refteth in it, till the Child be two yea and fix months old: So that the time of the thickeft inve fion is that whole year, which bears date from the eighteenth month, two years and a half being expired, the Difeafe falleth into its declination, and feldom invade the Child, for the reafons already alledged. But the reafo the

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alons Why Lifants accely born are rarely affected; and why om the ninth to the eighteenth moneth they are frequently fected, and why after the first eighteen modeths they are It frequently affected shall now all of them in their orr be produced.

The First Reasons why Children newly born are very feldome invaded with this affect may be these.

The First i, Because the Embryon in the Womb is by equal heat and embracement of the Matrix firongly ified against this Difease, as we have declared above, I by confequence the fame being brought to light doth a time retain fome of that muniment and defence ich it contracted from that equal warmth of the omb, and therefore presently after the Birth it doth fo cafily tall into it.

The Second is, Because the Midwives and Nurses do peta h dle them fo artificially when they are new born, and t their condition is not confiderably different from t which they possessed in the Womb. For they enp the whole Body excepting the Head in one conti-1 Covering; whereupon the exterior and first afed parts of the Body in this Difease are fortified aif the injuries of the outward cold, and the hot exitions breaking out from any part of the Body are and equally retained by reason of that Covering TIDE NO. h is two or three times double, and bound about to exercit Iwathing Bands, and equally communicated to all 12, 080 S parts of the Body, fo that they are cherished with wen heat as it were in a common Hypocaust or hot 這些日 le. Seeing therefore that the first part of the Effence is Difease confisteth in an unequal cold diftemper. NO BARK no wonder if these Defences and Fortifications of the do avert it at leaft for fome fhort time.

EA, The Third Reason may perhaps be the wholesomnes of the Diet, for Breft-Milk is the moft falubrious and agreeable nourifliment of tender age, especially when 1 41 it is sucked from the Brefts : for it is a simple and unit 可称 form Meat, full of nourishment, cafie to concoct, an R friendly & familiar to the constitution of Infants. There **E**RON ar Ma fore fo long as they are conveniently nourifhed with it 爾歐 they incur the fewer errors of diet, and are rendred th itta alla less obnoxious to this Discase. Yet it must be noted Statute. that if the Nurses milk be not laudable and good in i felf, or otherwise disagreeable to the Constitution of th 國品自由 Infant, then this reason is of no force. Therefore if th all com Nurse be big with Child, or immoderately addicted 1 Stale Venery, or any wayes fickly, or given to drunkennefs an little inordinate feeding, it is fafer to haften the weaning of d BR OC C Infant, unleis you are provided of a bette. Nurse. ing that

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The fourth and last reason is the flowness of the me tiltreng tion of this Discale in his first invalions. For it fter Hiter, eth on fo flowly, that it fcarce bewrayeth any preparat ALL DOLL ons to an affault till some moneths are expired, unle 410 m Ming the progress of it be advanced by some extraordinary at most vehement Causes, as by some more violent Affe 6 to d preceding or coming upon it. Seeing therefore that the Bontor. Difease doth so flowly take Root, and seeing that Chi are are dren, as we have formerly thewed, are commonly bo W Mill free from it, it seldome hapneth to break out evident act ( into act till the fixth, yea, indeed till the ninth monet Risof And thus we have given the Reasons, why Infants new at at i born, notwithstanding the weaknesse of their Constit th. tion, are for many moneths priviledged from this D libun tit fo eale. Interin

Secondly, The causes why Children from the ninth the eighteenth Moneth are every day more frequently i f.fted with this affect, are thele, Fi

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First, Because the first Cause even now propounded. riving away this Difease in those that are new born, oth daily remit, and before the ninth Moneth doth tolly vanith. Secondly, In like manner the fecond pro-Ilfive Caufe before alledged till that age doth every y grow more effectual. For the hands of Infants after me Moneths, if not before, are usually fet at liberty om the Prilon of their Blankets, and perhaps their. eet also before they are fix moneths old, although at ght they are fwadled up again. In the day time therere at the least these outward Members are destitute of at common and confortable warmth. The Nurfes rewife do many times erre, when they cloath the weak d feeble Infants too foon. For they idly define the ne of cloathing them by the number of the Moneths, ing that they flould rather give an estimation of it by e ftrength and activity of the motion of their Hands d Feet. For when the motion and exercise of those rts doth avail more to excite and cherish their heat, d to irritate their Pulses, then the warmth of their adling cloaths, without all controversie that is the ne to develt Infants from their Iwadling cloaths: oreover thirdly, After the ninth Moneth Children u-Illy are fed with other aliment befides Breft-Milk or ter Milk, and from that variety in feeding there eafily ulceth some errors in point of Diet. Fourthly, The wnels of the Motion of this Difeale doth not hinder. t that it may break forth into act after the ninth oneth. For the motion, by reason of the unperceivaflownels of it, at the end of certain moneths doth libit some effects and impressions. Lastly, the evils preeding teeth do likewife contribute very much to fame purpose. For the Teeth begin to breed commonabout the feventh Moneth, and come accompanied with Pz

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with divers Symptoms, which eafily dispose tender Bodies to this affect.

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Thirdly, The Caufes why this Difease most frequently rageth when the Child is eighteen Months old, are :

First, Because the Causes before cited hastning this NG 1 Diseafe in the younger Children, are upon the approach 20) 20) of this age taken away, or at leaft they operate with weak le Elle and ineffectual powers.

Secondly, The evils of breeding Teeth, although in ЩШ) respect of the immediate Symptoms which they produce il iki ti perhaps before this time they nourifh ; yet for the most are are part they leave behind them in the first affected parts a Man Man certain disposition, which privity h ding it felt within Eviten. them, after the term of fome moneths produceth this 12, T Difease. But the breaking out of the Dog-teeth chiefly anto or hath reference to this place; seeing that these break our Lity ( a little before the Child is a year and an half old, and mon their coming forth likewife is of all other the most pain-1000 full.

Thirdly, Hitherto belong alfo those accidents which happen by reason of ablactation or weaning of the Child, and at that time a great -alteration befalleth Children in matter of Diet, which they endure not without palpable moleftation. For hereupon they are angry, they cry, the commotions of their minds makes them f rlake the nourishment of their Bodies, they are hard to be pleafed, neither do they fleep quietly. All which thing do eafily imprint in the parts first affected at least a fore going disposition (although perhaps not till a long time after) to this affect.

And fo at length we have allo run through this fecond Comparison, namely, of young Children among them. felves, and we have briefly explained the Caufes why choic

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tofe Children at one age are more, and at another age re lefs exposed to this evil.

The Third part of the Queftion ftill remaineth, which s we have faid, we would referve to be examined at the lofe of this Difputation; namely, Whether those that re of a greater age do sometimes fall (though exceeding arely) into this Difease.

We fay first, For so much as concerneth that part of he Essence of this Difesse, which confisteth in a moist istemper, that some difference must be expected to be etween that diffemper in younger Children, and those hat are bigger, in young Men, Men, and especially in ld Men, for the same difference which we put before etween the moist diffemper of young Children and old den, may according to quantity as more or less, be oberved between the middle Ages, and therefore the hunidity of the younger Children will be better concocted, and more genuine than that of the elder, as it is obviis to collect, mutatis mutatis, from the same reasoing.

Secondly, As for the organical fauits, we affirm, that eceffarily there concurreth a vaft difference between Difeales of this kind incident to Children, and perhaps those of greater age, for the rumors of the Bones in the Wrifts and Ankles, as also that narrownels of the reast, likewise that dispropertionately augmented bigels of the Head and Liver, are either less conspicuous or together undifernable, especially in those that are rown to full age. For as the years encrease the Figure and proportion of the Parts becomes more compact, firm and stable; neither doth it easily come to pass that one art doth much grow out more than another by true aughentation.

Thirdly, We fay, that excepting the two premifed P 3 conditions,

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Conditions, and that in that manner as they are propounded, this affect according to the other parts of the Effence thereof (although indeed very rarely, and upon the highest caules only) may happen to Boys, Young Men, Men, and old Men. For first a cold distemper without all controversie may befall them, though not lo cafily as Children. Secondly, A moift diftemper may allo invade them, but yet only by the limitation propounded. Thirdly, A want of inherent Spirits may alto befall them, but then it must proceed from the most potent caules. For Chronical Difeafes, and fuch as contume the habits of the parts, cr diffipate it into ayr, or waft it by long fafting and an Atrophy, do necessarily Benet leave behind them a paucity of Natural Spirits. 意而言 We thome lee the outward parts even in those that are grown to full S-gir age, when they are extenuated and confumed by fuch taity like causes, to wax feeble, to languish, wither, and become destitute of all sufficient Spirituosity. Yet we grant, A12 1 that in those that are grown to full age, the evil which Intern cauteth leannels being overcome, the wafted Spirits may illere o foon be repaired by the vigor of the Pulfes, and that the 102,001 rudiments and imprefiions of this Difease may be rooted , R out within one or two weeks, and by confequence, that B, DO they are feldom affected with it. In the interim, if it Milter MILIO thould to fall out, that upon that confuming of the Inherent Spirits, some impediment should intervene that a by might retard their reparation, it is possible that this difatte cale may grow from thence in that manner as hath been faid. But a numbrels of the Inherent Spirits must necei-國自 farily follow upon a fewnels of them. Fourthly, The 10 parts of the Secondary Effence, feeing that they have a Q RC ( tion ! strong dependance upon the Primary faults, where thele perlevere long (the Organical faults being excepted) they may supervene in their order. So that we do not doubt

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bubt, but this Difease may happen to any age after aildhood; the refirictions which we have now propound being granted, and upon the urgency and prefeverance great and weighty causes.

One amongst us affirmeth, that he had a Gentleman cure about thirty years of age, who by daily immodete use of Wine and Tobacco, continued for fome hole years, having neglected the due receiving of hiseat, fell into fuch a weaknefs of Stomach, that continuly every morning he vomited, and loathed all kind of leat, and if at any time he swallowed any with unwilngness, he presently vomited it up again : to appeale is quezinels of Stomach, he was at last compelled to a ntinual use of ordinary Aqua vit.e, but afterwards his fome was to mingle it with stale Beer, and a quantity Sugar; and with this drink alone he preferved him-If alive for many moneths. In the mean time all those rts which in this Difease we call the first affected, were streamly lean, and became foft, loofe, languid and ithered, fo that he could neither turn himfelf in his ed, nor rife, nor walk, nor stand upright, yet he felt no in, neither was there any privation of fense and moon, no cough, no uneafie respiration, his face was well loured, and all the parts about his Head were in a good indition, and well habited, fo that had you judged of im by his countenance only, you could fearce have spected that he was fick. As he lay in his bed he would, at with his Companions, take Tobacco by turns, and ink that mixture of Beer and Aquavitæ aforesaid. The rent of the Disease doth not indeed belong to this place, et we shall fet it down to gratify them who are defirous The Phyfitian being fent for, he ftrictly know it. urbad all intemperance, and amongst other remedies iving given him one grain and a half of Laudanum Iv dinenfisz P 4

dinenfe, he appealed the nauscous infirmity and tumule simes of his Stomach, which part he likewife ftrengthened with inte nal and external applications, and preicribed him fuch a diet as was most casic of concoction. Instead of tesal di exercise, he folicized the heat unto the outward parts with rubbing them every morning : having first given a mill, fmall quantity of ftrengthning and opening Electuary, made up with a little portion of Steel, which he drank anit def in two cunces of Wine, composed of Wormwood and kay man Mint, a little Saffron being hung in it, to give it a tin- hing Aure; three ounces of small Beer being tempered with it, and a quantity of Sugar to make the tafte of it more with pleafant. Moreover, he purged him by fits with gentle bData. Medicines, and in the evening comforting him with cor-THE ACCON dials. Within twenty dayes he grew to fuch a degree of amendment, that he could walk abroad for the space of mati an hour, and could without any ftriving or much wearilist lak nels climb ladders without any help. But afterwards by mQu a relapie into the like intemperance, he died in the absence of his Physitian. But let us return from this digreffion into the way, and direct our speech to our intended loope. The Affect being now confirmed, as it was upon the first coming of the Doctor; Besides the faults of the Stomach, it seemed to include a great part of the Effence of this Disease we now treat of. For in the par s fubservient to motion; namely, those that are first affe-Stea in this Disease, there was a cold distemper, either through defect of motion, or by reason of the immunite afflux and dispensation of the Vital Blood. Again, the softness, fl pperinels, laxity and litherness of those parts shewed, that there was a moift distemper in them. Allo the extream leannels of those parts did fufficiently demonstrate a fewnels of inherent Spirits, and the unfitnels to motion, and affectation of reft and ease did ftrong-

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In I vitnels a numbnels in those parts. The full and flouming habit of the parts about the Head, when the other ts were extenuated, was a forcible reason to prove the qual distribution of the Blood. But the peculiar cause chis inequality in this fick man, might be his frequent fin whiting, whereby a more plentitul afflux of the Blood Elda vis driven to the parts about the Head, the other being ika shoft destitute of it.

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Any man may perceive by what hath been faid, that at 10000 It the greatest part of the Essence of this Disease was e dan L aprehended in this mentioned Affect. From whence eret al ength we may probably infer, that it is poffible for of it it it Discale to happen to those of full growth, being coninth per a red according to the propounded limitations; although witho fi ry feldome comes to pals, because great causes and deprot the letth of time are required to the production of it. And sat laft we have put an end to the fearch upon the UCD WE vier Question. THERE

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### CHAP. XIX.

### The Later Question.

Why this Disease happeneth more frequently England then in other Countries? And who ther it be Natural to Englishmen?

T is acknowledged by the common confent of Phyl Ik. tians, that there are certain Country Difafes; name 職作 ly, which more frequently infeft the Inhabitans of for one Region than of another, by reason of some Comme 13 61 Caufe. But feeing the relation of the Country to the Difeafes usually raging in it, may be observed to be of diverse kind ; and seeing wife men have improperly de nominated some Diseates from certain Countries. nally, feeing that they who have hitherto written of Country Discales, have without difference called a Difeases which are most rife in any Region by the nam of National or Country Difeafes, as if they did equally par ticipate of the Nature of a Country Difease ; we hav judged it to be a profitable enterprize to premise som things in this prefent disquisition, concerning the diffe rences of these Diseases among themselves.

First, Therefore those affects which have the denomination of Country Diseases from the Region, are properly or less property and abasevely fo called.

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There are four conditions required to denominate a intry Dheafe properly fo called.

The first condition is, That the Disease be more frequent pat Region unio which it is attributed, as Natural and mon then is any other Region unto which it is not attrid as fuch. For a common or Country Discase is ales supposed to have an unequal reference to divers Reis, and to infeft one more (namely, that unto which afcribed) and another lefs.

The Second Condition is, That the Difease depends " fome kind of inclemency of the place. For a Diseale poerly common, imputeth a certain crime or faultinefs An the very place; therefore when a place is not guilty ome peculiar tault, fuch an imputation is improperly, y and unjustly afcribed unto it.

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The Third Condition is, That the inclumency and press of the Region be so great, as to affect the more y, and fuch as observe a due Regiment of health, and an one as is appropriated to the place. For in the iment of health some peculiar Caution is due to ain Countries. Therefore when a People neglecting a peculiar Observation of the place, thall fall into e Epidemical Difease by an erroneous use of the nonural things, that it is not to be reputed a common ale, but to be imputed to the error, want of wir, incitancy and negligence of the Inhabitants. For this d ale which we suppose, might have been prevented, had t Regiment of health appropriated to the place been ritly observed.

he Fourth Condition is, That that vitious constituof the Country do either continue long, or return of-For the fault of a place that is fugitive, not perman t nor often returning, must be accompted as somen s forreign and meerly accidental in respect of the Region,

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Region, and cannot properly denominate a comment As for example, If a pernicious and unut for Discase. Air fhould chance to be blown hither from other Con the tries, and fhould produce a common difeafe, which the tot not prevail beyond some moneths; that disease ought the properly to be called common, but rather cafual : mi chanceable. Wherefore the Feaver of Hungary, and Lind Sweating-fickness of England, although they obtain antr. their Names chiefly from those Regions, yet are this abufively termed common, because they want a dura mit fomentation from those places, and because they eit min cease altogether, or at least are not for the present m in Co predominant in this or that place than in another.

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Difeafes improperly common, do indeed include Bult o first propounded condition of fuch as are properly foc Vertur ed, namely, because they more frequently occur int 2 37 Region whereunto they are attributed, then in anoth ind c (for otherwise they would not deserve the appellation tof t Difeafes improperly common) yet they want the fecon Rapple third and fourth. For they either lack that fomentati l wer that is rooted in the Region, or that fomentati 2000 which they have is very weak and inconfiderable, whi also may be overcome by a Regiment of diet appropriat to the place; or finally the fomentation is not perm nent nor durable, nor frequently returning. Now by mentation we understand somewhat that is faulty in 1 spect of health, founded likewise in the condition of t Country. Therefore when fome common and freque Disease ariseth from the abuse of some commodity of t Region, as if some Nation by reason of the great plen of fruit, and the like fruitfulnels of the place, or by real of a long and fecure peace should abuse themselves intemperance, floth, or the like vices, and thereby inc some common Discase, that Discase is not properly to call

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a merid common. For the occasion of that Difeafe, which Win Country did supply with, was laudable in it felf, and und efore what event foever fucceeded, the abuse thereof the or ht to be imputed to the error of the Inhabitants, not the ny unkindness or discourtefie of the Region. In like I am ner, if the fomentation of a Disease be culpable, yet 4), and not that be founded in the very conftitution of the y a Cintry, but in some action of men, as when after the stand lation of War, the unburied Carkaffes pollute the much with their putrifaction, and thereupon introduce an in Elemical Disease, this ought not to be called a comneur n' or Country Disease, because it dependeth upon the the lirty of mans will, and was not procured by any preincorplault of the place.

ometimes also a Disease is ascribed to a Nation or petry mul Pie by calumny, and abufively through the malevoin and corrupt intentions of fome People to traduce the pelle he of their neighbour Nations. After this manner when Neapolitans call the Venereous Evil, the French Pox, funcal it were Natural and Common to the French. And for the contrary, the French to requite the Slander, term nble, a e Neapolitan Scab. But of this enough.

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Difease properly called Common, is either Originame and Ancient, or Adventitious and New. The Origiis that which from the first Inhabitation of the place Novi 1 infested the Inhabitans : of this kind perhaps is the cafe in the Throat called Brachocele among those that adh all about the Alps; that burning Feaver which they a Calenture, under the torrid Zone : the mortificatiof the parts under the cold Zones towards the Poles by emiry of cold.

Country Disease that is new and adventitious, is t which is brought into a Country by fome common the. This is threefold, for either it proceedeth from fonic

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fome Original fault of the Region, prevailing by t advantage of time against the health of the inhabitant or from some alteration or innovation happing to t Region it felf. Or from some incongruity between t Place and the complexion of the Natives.

First, A new common Disease invadeth a Country b some Original fault in process of time prevailing me and more. For 'tis possible, that the firm and ftror Bodies of the first Inhabitants of any place may powe fully refift the unwholfome influence of the Region, at for many Ages may repel the invalion of the evil, a though their posterity afterwards in length of time, be ing by degrees changed in that peculiar Reafon of the complexion whereby they maintained the former re fistance, may fall at last into some common Difeat For the Plica of Poland and the Scurvy, are comme Difeases to the Sarmatians, Polanders, and the Inhab tants of the Baltick Ocean, and they are likewise ne Difeafes, and (as all men confess) totally unknown t the Ancients. But to this day it is not known that an notable or remarkable Change or Innovation hath hap ned to those Regions before the breaking out of the Difeafes, to which you might probably afcribe the be ginning of a new Difeafe. Wherefore we ought rathe to fay, that those new Diseases did proceed from som ancient and original fault of the places : and yet that they did not bewray themselves at first by reason of peculiar reliftance made by the Natural ftrength of th Inhabitants. For to this very day some Families it those places are tree from those Difeales; and very credi ble it is, that they may to perfevere, not yielding to th injuries or threatnings of the Region.

Secondly, A new common Disease may refult from the altered or innewated constitution of the place. Suc

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and of innovations happens in Countries, either by I thquakes or Inundations of Water, or the burfting is the of fome new pernicieus Springs, or perhaps of and the new Mineral Exhalations from the Cavous parts of t Earth, or from some malignant Aspect of the Stars a the like Causes.

ing Thirdly, A new common Difease may proceed from incongruity of the Place, with the complexion of my v Natives. Such kind of Difeates chiefly happen to I tions, when they transplant themselves from one ner Igion to another, especially when the Constitutions of tint t fe Countries which they go to posseffe, are very diffeafter t t from chose they forlook. So the English who first fermi i abited Virginia were frequently afflicted with a fweln D. Ig of the Abdomen and the Hypochonariacal parts ; who new ton their return to England were cured without any difte halty, but they who continued in Virginia were not kent leafily reftored to health.

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Moreover, National and common Difeafes differ ain in 1 ng themfelves. Because fome of them totally depend on the inclemency of the Region, and others in t only. The mortification of the parts feemeth to of the first kind which befalleth men in the Norrn Tracts near the Poles. For the whole Effence of Difease may be ascribed to the cold and tharpnesse of Place. Of the fecond kind the Venereous Pox aing the West-Indians seemeth to be. For there it is sceived to be partly gotten by impure Copulation, d partly to be contracted from the Infalubrity of the ice. In like manner the Bloody-Flux is predominant Ireland, depending partly upon the conftitution of place, partly upon an erroneous and prepofterous it. And thus much in general be spoken of the diffeaces of common Difeases. In the next place we must enquire

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enquire why this Difease is more rife in England than other Regions? And by the way it must be observed whether, and how far forth this Difease may be faid to Natural to English mea?

First, it must be observed, that England is an Islan which borroweth some humidity from the adjacency the Sea, and some frigidity from the distance from th Equator, then that it aboundeth with innumerable four tains, discovering their Springs almost in all place Lastly, That it is watred with many and frequent show ers of rain more than other Regions. All which thing do sufficiently attest the frigidity and humidity of th place. Seeing therefore that a cold and moist distempt is a part of the Essence of this Discase, we may easily in fer that the bodies of the Inhabitants are here more in clined to those distempers then in other hot and dr Countries.

If therefore you demand, Whether this Disease at leas considered in this part of it, may rightly be said to be nature to English men?

We answer, That in some fort it may (although per haps not properly (namely, so far forth as the fame i attributed as natural to other Regions, alike cold an moift (although perhaps it may not yet be observed in them.) For those Countries are as readily disposed to imprint a cold and moift distemper as England it felf Yet it must be observed, that a cold and moift distempe is a common part of the Effence of this Discase, and that it alone doth not manifest the Affect, for every cole and moift distemper doth not introduce this evil. Wherefore although we grant, that an excess of cold and moiflure may be imputed as a fault to England, yet we deny that from thence it can be rightly inferred, that the whole Discase is common and Natural to English men.

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Moreover, Some Countries may perhaps be found out far exceeding England both in cold and moisture, as Scotland, Holland, Zealand, Ireland, and Denmark, and the like; wherein not with ftanding this Difease hath not been observed to appear much. Therefore if this Disease be not rightly imputed to these Regions, wherein that common caule is predominant; namely, the excels of cold and moisture, Certainly neither can it justly be imputed to Ergland, by reason of that common Cause, which is here lefs prevalent. Again, The coldness and noiftness of this Kingdom doth not so far transcend a nediocrity, but that by outward and inward applicatims, exercises, and the like; namely, a right use of the ix things not Natural, they may be fufficiently correctd to the cashiering of that imputation, Wherefore if hefe things be fo, namely, if a cold and moist diftemer be only a common caule of the Difease, if other Reions whercin this a ffect hath not yet been observed to nake any impression, are at least equally obnoxious to old and moifture : Finally, if those diftempers may be evented by a Regiment of diet appropriated to the lace; certainly the reason drawn from the coldness and which even now we produced ) shew why English men should be more frequently. waded with this Difeale then others, will be very weak nd infufficient, fo that we can by no means place our ontent in that alone, and therefore we intended noing more by that affignation, than that England doth tore dispose the Bodies of the Inhabitants to this Af-A than hotter and drier Regions do the Bodies of teir Inhabitants. And fo we proceed to the fearch of te other eauses of the rifeness and frequency of this ffea.

In the fecond place we can note that England is very fruitful

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fruitful and Child breeding, being sufficiently favoura-ble both to Conception and Child-bearing, and not 1 fubject to cause abortions. Now from hence it comes Th. to pais, that not only ftrong and able bodied men, and fuch as are endued with perfect health, but the weak and fickly perfons do alfo generate; weak and unfound women 13 likewife, and fuch as are prone to a confumption, do conceive, carry their children nine months, and bring them forth in a decent and laudable manner. But it is no wonder if the Isfue begotten by fuch matter, and which oweth its life almost to the clemency of the place alone, and should be feeble and languid, and very subject to this Difeale. For as much as the very benignity of the Region int may in this respect be the occasion of some infirmity in Ma the Isfue. For as barbarous People in time paft by an a inhumane experiment upon their new born infants; fin namely, by dipping their naked bodies in the coldeft whe water, deftroyed the weak ones with the extremity of the bin, cold, and gave education only to the ftrong ones, whole me vigorous Constitutions overcame the injury of their and cruel policies, purpofing by that inhumanity to have an as universal race of strong and lusty people. So on the contrary the very clemency of the place promifcuoufly preferving the languishing and weak Children together with the ftrong & healthful, doth minister an occasion of bringing forth a mixt kind of people fome ftrong and fome weal and fickly. Yet leaft any should mistake, we do no mean that all the Children in this Kingdom which are born of weak and fickly Parents are subject to this Af-For although if one or both of the Parents be infect. hrm, the Children will be infirm; yet it is often feen that when the Parents have been very ftrong and healthful yet their Children have been very Jubjest to this Difeafe Wherefore neither do we reft in this second cause, bu anothe

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another must yet be enquired out, from whence we may derive a fufficient reason of the frequency of this evil.

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We affirm therfore in the third place, That the rifenels of this Dileale in England hath been much promoted, by that long and lecure peace, which we enjoyed before the first breaking of it. For by this the more wealthy families, which were first invaded by this evil, and which doth still infest them more than others, had addicted themselves to idlenels and a loose and effeminate life, and hereupon they fell into a mosser, foster, and degenerate, Constitution, and such as was less purged and cleansed from excrementitious humors, and by consequence their Children were even progreated obnoxious to this Afsect. You will say, that Scotland and the Northern parts of England, although they enjoyed peace and fecurity, yet they are seldome observed to fall under this Afflition.

We answer, True it is that Scotland and the Northern parts of England are less affected with this Disease than he Southern and the Western. In the mean time perdventure the first impressions and rudiments of it are, ar more frequent in those places ; yea, and in some forsign Countries, then is commonly beleived. For alhough this evil be very familiar in the South and Weft arts of this Kingdom, and very well known among the Julgar fort, yet we have many times feen Children aficted with it in a flight manner, of whom neither the arents nor others of the fame family did fuspect the cast evil: Yea, we have known many, whom none of neir friends thought to be affected, to be healed with uny help of Phyfick by the fole benefit of the increa ed eat, or by the increase of age or exercises. How much after therefore may the first rudiments of this Disease be

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concealed from them, to whom it is lefs familiar, and among whom it feldom ascendeth to that degree, that they need to implore the Phyfitians help. We conjecture therefore that this Difease is more frequent then is commonly beleived both in Scotland and the Northern parts of England; yea, and in some Countries wherein the people are ignorant of it to this day:but in those places they are fo gently tormented with it, that they are feldom condemned to the hands of the Physician. For that is the cuftome of the Vulgar fort, not to fend for the Doctor (especially to Infants and young Children) unless the vehemency of the D.sease constrain them. However the matter is, we feem not yet to have given latisfaction to the objection propounded, Why the South and west Country men of England are more grievously and f. equently conflicted with this Difease, then the Northern People and the Scots, although both Kingdoms equally Shared the bleffing of the lafting peace and security. Therefore we grant that a higher reason yet must be given for this difference. Fourthly therefore and lastly, we lay, That the cause of this difference is the affluence of all good things in these Southern and Western Countries of England. For this part of the Kingdom is much the more fruitful, rich and flourishing, and abounding with all manner of allurements to pleasure. Therefore it is no marvail if the cuftoms of men do first degenerate here, their Spirits decay, and the ftrength of their Bod es begin to diffolve : Now that this degenerate and delicate manner of living doth weaken families, is a truth to forlidly and conftantly attefted by Hiftorians, that it were an impertinence to offer any proof of it. For you may observe that the most Noble and Gallant Families have been very much reproached for these very causes ; yea, and looner or later fometimes totally extinguished, and le much the looner as they have the more refuled to anderge

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tergo labors, and to inure themfelves to malculine exereifes. Neither are families ever plunged in a greater danger of degeneration, then when they abound with all good things, and lying open to plenty and fecurity they are most powerfully invited to delicateness, idlencis and effeminatenels, without any labour, care, and folicitade. Who was more rich, fe cure, and effeminate, than Solomon? He left Reboboam a degenerate Son behind him. And perhaps the family of Henry the 8th. is extint for the like cause. We could heap up almost innumerable examples to prove this, if it were needful. However it be, we fee plainly, that this Difease doth more frequently and vehemently invale the families of the wealthy, than the cottages of poor men, and therefore it ought not to feem ftrange that it likewife infefted the richer and more pleafanter parts of the Kingdom ; namely, the South and Weft, before the North parts. But these things shall suffice to have been spoken concerning this matter. It rema neth only that we enquire, whether and how far the three last assigned causes relate to the densminition of a Common D fease, and whether in respect of them, this D feafe may be afcribed to England as common and Natural?

You must know then that these three causes in as much as they depend upon the Region, are not properly caules, neither by their own nature do they produce this affect, but that they are only an occasion whereby this Dilease may accidentally arife. For in themselves they denote the laudable conditions of a Country, at least they infer not what is culpable in it. For who can accuse his Country, because it favoureth the procreation of Children, much less make outcryes against it, because it enjoyed long and secure peace. Finally least of all ca lumuiate the pleafantnels, fruitfulnels, and affluence of all good

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good things : For all these things are in themselves bleffings, and conditions to be wifhed for in a Country. Secing therefore as we have fhewed above, that a Difease properly common doth imprint some mark of a vitious Constitution to the place to which it is ascribed ; It is impoffible that any Difease can be attributed unto it as properly common, by reafon of the commodity of the Region. Wherefore (that we may comprehend all in a word) although this D fease in respect of the coldness and moiftnels thereof have a fomentation in the very Constitution of the Country. Although alfo that it barrow three other occasions of invading from the Country ; Yet feeing that those diftempers may be prevented by a due observation of the Regiment of Health appropriated to the place ; and feeing that the three other occasional causes, are not properly blamable, but desirable, we must affirm that this Disease is not properly Common to England. And fo we have put an end to the fearch of the caules of this Difeafe. is reacher a fait which the sector recent for the

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#### CHAP. XX.

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the differences of the Disease, called the Rachites,

There are many differences of the Rachites in regard of the concourse of several evils, and more than any man would eafly imagine; ome whereof are of great importance, and others els confiderable : we have resolved here briefly to probound the chiefest. For the knowledge of them is not only profitable to define the prognostical causes, whereby he various events of a Discase are distinctly forecold acboth to the prevention and the cure of a Discase; namely, hat by a confideration of them apt and fit remedies may be chosen.

Now these differences arise either from the Effence of the Disease, or from the causes thereof or lastly, from Dicases conjoyned with it. The Effence of a Disease may vary many wayes : First, By reason of the parts of the Secondary Effence either present or absent. Secondly, In regard of the magnitude of it. Thirdly, In respect of the the vehemence. Fourthly, in regard of the Spirits; And fiftly in respect of the times.

We grant indeed, That there is a certain agreement between some differences comprehended under these titles; yet seeing that the formal conceptions of them are distinct, it must be confessed that they deserve distinct Q 4 con-

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confiderations. For although a Difeate, even in that ve and ry respect may be called greater, because it containet many parts of the Secondary Effence in the fame Patien 10,1 yet this is a different and diffinct confideration from that of the magnitude of that Affect. For the magnitude properly hath respect unto the degree of receis from the Natural State, and not to the Nature of the part of the Effence either present or absent, for hereupon reful- kin teth more then a gradual difference. In like manner fome of the other differences do perhaps fignific the fame thing, in a concrete and reftrained acception, which notwithstanding in an abstracted and formal consideration denote a diverfity. But let us proceed.

The first difference of this Difease is that which arifeth from the prefence of few or many of the parts of the Secondary Effence thereof. For although all the parts of util the Primary Effence are perpetually present with the tam Difease it felf, yet there is no necessity that all the parts with of the Secondary Effence should be alwayes prefent. For the these are after-comers to the first Essence, and do by degrees come upon it : Yea, fome of them may be fo h ghly intercepted by the intervention of refifting caules that they may not at all appear. Hither you may refer that difference, which we propounded at the foot of the precedent difputation, and which we thewed might polfibly, though indeed very rarely, befall those that were grown to full age. But because our purpose here is only to handle the Disease as it is incident to Children, we shall be content to pass by that difference thus noted by the way. But even in Children themfelves there fomtimes happen some parts of the Secondary Essence, which have a most firice conjunction with the Primary Effence, at least they fucceed them in the order of Nature. For the Primary Effence hath the efficacy of a caufe, which in Nature

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the Trure doth ever go before the effect. But in order of the some parts of the Secondary Effence do conspire as elin ivere, and concur with the Primary Effence in the invion ; and others again do come afterwards, these we If here diftinguish. For the former fort are absolute= inseparable, the later fort separable from this Af-

The inteparable parts of the Secondary Effence may o rói must reduced to these Heads. First to the afflicted Tore of first affected parts. Secondly, to the unequal and the life milderfect distribution of the Vital Blood. Thirdly, to knut too fmall participation of the Vital influx in the affected parts. Fourthly, to the Secondary faults of ith an Animal Constitution. These faults are sufficiently udbuolded above in our discourse of the Secondary Efepuide e of this Discase; where likewise because of their in and carriage with the Primary Effence, any man may hepropeive with ease (chough they have a calual dependance nt hunthe Primary Effence) that they begin together at obrat fame time.

which it all the Organical faults which we have also already g an ted, are found to be separable, and sometimes actually ny relevate from this Difeafe. For the magnitude of the adul d, and the leannels of the Joynts, the crookednels of Shank-bone, or the Elbow, the inflexions of the onm nts, the sharpness of the Breast, do not necessarily. ti Wi mpany this Difease pre ently from the beginning, but C IS CO. rocels of time they bewray them elves by degrees and 128 . 1 rvene upon the Affect. And although the Conotet t ption of the parts, which in fome fort hath an inmin ce into the faid faults, may be faid to be present in this : flight degree from the beginning of the Disease, yet rit, L indeed only a Symptom, and not a Difeafe; neither able presently to produce those Difeales of magniint a tude, Nint

tude, Figure and Place. Moreover it is not necessary that these Organical faults should equally and at the Same time invade one that hath the Rachites, we gra at indeed that the extenuation of the first affected parts in when the Difeafe is of fome continuance, doth alway ma and neceffarily fucceed it, neither can it afterwards up in on the perseverance of the Dilease be removed, that the is likewife a principal part of the feparable parts of the fecondary Effence; yea that the extenuation whilft it making doth immediately follow the malnels of nourificant ment of the first affected parts, almost no otherwind than the imalnels of nourifhment immediately followe the the primary Effence of the Difease in the faid parts ; b the withal we affirm that the extenuation being made which mas is it felf a fecondary part of the Difease whereof we di then course, doth neceffarily presuppose the motion and tin abe of the Difease, and that it cannot be in the first mome ase of the existence of the Disease. We say moreover the Phyfitians do not acknowledge any change made in the parts exposed to the sense, which doth not yet appear the fenfe, and by confequence they affirm that extenu tion befalleth the first affected parts, till it be made o vious to the fenfes which certainly doth necessarily pr require some duration of the Disease. But the impr portionate magnitude of the Head, doth begin almost the same time with that extenuation of the first affect parts, but it may fo fall out, if a confunting Phtifick joyned together with this Difeafe, that that magnitu of the Head may vanish before death, as we have alre dy proved by one example in our Anatomical Observ tions. The Magnitude of the Head therefore is mo separable from this affect than the extenuation of the first affected parts, for this cannot be removed witho the Dilease be cured. The Ricking out of the Bon abbe

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at par fometimes fooner, fometimes later, and they times grow out more, sometimes less, but upon to ong continuance of the Difeate they are feldom ( if fen to be absent. The narrowness of the Breast 1 not appear, but after a long time when the D fease mas onfirmed, and for the most part is the forerunner of , It tylick. Again, the crookednels of the Bone in the , and the Shank-bone, as also the inflexion of the millions may be absent through the whole course of the non afe, and may be more or lefs prefent, and indeed is and noft chanceable among those things which follow tollow affect. We conclude therefore that these Organical in of the Secondary Effence are separable after that den per as we have faid , and as more or fewer of them of mar relent. fo the Difference of the Difeale is constituand as being more or lefs compounded.

tim he Second Difference of this Difease resulteth from ent nagnitude thereof. And the magnitude is estimated at in the greater or leffer recefs from the natural condiofir. There is a vast difference in this Dilease in tappa tent ct of the magnitude. For fome are fo gently affewith it that you would fcarce suppose them to be maxim They complain of nothing, they cat, they drink, arity fleep like those that are found in health ; only they the int with more unchearfulnels, and thew forth fome 2011 rvery flight figns of fickness, By the only benefit of rft at OL ure likewife without any affiftances of Art they per-Phrist y recover, neither their Parents, Nurses, not the 11191 tanders fo much as once fuspecting that they are aftire I d with this evil. On the contrary, Others are fo mently afflicted that they cannot be releved from re is h or the danger of imminent death by the most apd pred remedies.

he Third Difference is from the vehemence of the affect

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affect. Now this is valued by the violent motion with the Difeafe and the reliftance of Nature, and allo by tharpnels of the conflict of these things among the felves. This Difease, although it be otherwise v and great, yet is it flow in motion unless some fewer, some other urgent affect be conjoyned with it, and inthe up the Nature of it to a fiercer opposition, yet is the n tion thereof some more vehement, and some sv in dull, and thereupon it happeneth to be differenced.

The Fourth Difference, is from the ftrength of the fick Child or Infant. This is effimated by the greater or leffer prefence of those things which are according Mature. Hither belongeth the condition of the tem the rament, the plenty of inherent Spirits, the activity is ftrength of the Tore, the vigor of the Vital and Anin Conftitution, and the ftructure of the Organs. For these are more or less obedient to the prefcriptions the Nature, so their Spirits ought to be judged more or firong, and according to them the evil must be determed ned the more or less dangerous. For this cause the y ger Children ceteris paribus are more dangerously affect the than the elder.

The Fifth Difference, is from the times of the I feafe. And this difference in a qualified and limited a ception includeth almost all the precedent; for while difference forver happeneth to any Difease, must necels rily happen at some time of the Difease. Physitians reck up four times of a Difease: The Beginning, the Au mentation, the Confistence, and the Declination. It it must be noted that Physitians are not so exact in stingnishing the feasions of things as the Philosophe for they do not restrain the beginning of a Difease that point of time wherein the Difease beginneth; but far they extend it, till there appear so great an alterati

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Difease, that it may be known by certain and senmuch widences. For the indivisible beginning is not the wherein the Physitians help is perfected, and why up to I that distinction of a Difease be profitable which which not be grounded upon any alteration of it known free a

11 1 n therefore hath rightly deduced the times of Fezit nd Inflammations from the understandible alteratithem : that is, The beginning from the crudity of atter causing the difease, the augmentation from the an eff coction thereof; the ftate from the Excretion, the Declination he computes from the Reduction and indeed the Natural state; and indeed these to the do fweetly agree in the general, and differ in partifrom the crudity and coction of Feavers and In-Manations. But the truth is, That this diffinction of is hath not the like fuccefs in many other difeafes : niption a these Nature doth not so regularly proceed from noten ty to coftion, fo to expulsion, and at last to redubeen in either by these can we truely and fafely know the it the difease. Other alterations therefore of Difeates, tuch as are more cleer and eafily known, be weighed. Yet we grant that even thele discales dit they are directed to health, do run thorow those initian feasons, the beginning, the augmentation, the state for nuffence, and the declination. But when they tend deftruction of the Patient, they fcarce attain to the its to stence, but are daily more and more augmented eic o the laft period of life. Wherefore in these the augand mation admitteth the greateft latitude, neither doth ut rerve a higher difference, or a lower subdivision : but ild win an indifferent flate of a difease of the same kind is Dim : the Middle term between the beginning and the while of fuch an augmentation, that we can convenient-

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ly diftinguish. The encrease into an augmentation with this fide, or beyond, or beneath, or above the construstence. An encrease of the first kind about the confiste we may call a *simple encrease*, in regard that it different not from the thing it self commonly received by the name; an encrease beyond or above the state, we call encrease excressent, excessive, transcendent and desperate by

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Moreover, Two kinds of declination may be ob at wed in a Difeafe. The first is legitimate when the feafe fimply declineth towards health and recovery. later is spurious, when a difease remitting changeth i with another of a different kind. And to although there in those that recover health, only four times of a dile yet in others two more differences may be difcern the Yet it must be noted, that these fix times are never to hau found in the fame difeafe, or the fame patient, but what there is the fame difeafe in the Species in divers fubje with Let us now apply these things to the present affect. affirm therefore that fix differences of this difeafe do mate cur in respect of the times thereof. For it hath a begined ning, and may be called incipient : it hath an encrease, mil may be faid to be confirmed ; it hath a ftate, and then but may be termed confiftent ; it hath an encreale beyond wan ftare, and may be called despirate : it hath a true decli and tion, and may be faid to be an affect remiting or fim declining; and it hath a spurious declination, and may called a change, as when it changeth into fome other feafe. Of all which we will speak in their order.

First, the Rachites is called a Disease beginning, which the first Rudiments and impressions thereof are, thou very obscurely, first observed, and before there happenery manifest extenuation of the first affected parts.

Secondly, This difease is said to be confirmed, what an evident and manifest extenuation of the first affect

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becomes obvious to the Senfes. And here the Reareceiveth we do not diftinguish these two times from ty and coftion, but from another alteration of the , namely, The Extenuation made in the parts first ed; for the beginning of this discase can no wayes cerned from the encrease thereof by crudity and co-: But otherwife, fo far as the nature of the thing is. de of it, we thall willingly follow the example of , and as he diftinguisheth the encrease trom the beng by the manifest coction, so we also put a difference ten thele times in this affect from a manifest alteranamely, the extenuation made in the faid parts.

hirdly, This disease advanced to its confistence, is which having attained the higheft vigor and exalnew 11, is arrefted, and for a time is neither fenfibly ened, or leffened, but continueth at a stand.

purthly, This difease exceeding the Mediocrity of onsistence is called desperate, namely, because in nitude and vehemence it surpasseth the very state of ame disease in another Patient indifferently affected, withal is continually encrealed, neither is there any but that it will daily encrease till it hath altogether sed and diffolved the Patient. For which cause this ition of a disease is termed desperate.

fthly, This difeafe is faid to be truly remitting or ning, when the Effence thereof is by little and little nished, and when the Signs and Symptoms of it are mitigated.

xthly, This difease is faid to be illegitimatly decli-, or paffing into another difease of a diverse species, the Effence, Signs and Symptoms thereof are fo ned, that new ones of a different kind, and perhaps e outragious appear in their stead. Thus the Ras frequently degenerates into a Confumption, a He= Aick. étick, and sometimes perhaps into a flow putrid Fear dan yet for the most part the same disease doth accomp these supervening affects to the diffolution of the Par And let this suffice concerning the differences of this sease deduced from the Effence.

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This difeafe in like manner in refpe & cf the Caufe Min as it were taken into pieces, or divided into parts, nan into a natural affect, and into an after-coming or read ly contracted malady. Again, This difease may be ad med natural in a twofold fense : In the first properly the when the Sick is born actually affected with this dife he In the later improperly, when the Patient at his brain is not actually affected with it, but ftrongly oilpolec in his native principles to fall into it. If it please the line der to fummon those things to his memory which which faid above concerning the caufes of this Effect on the Parents parts, he will cafe y conceive the reafon and for Bri dations of this difference, and confequently that will ad, cule us from any further explication : Only we add, the this difference is of great use in the judicial part of children which confifteth in applications antidotal and prevent tive, but it is not of fogreat moment in the Method is Cure. In like manner this Affect is meerly coming the ter, when being fomented by no Natural disposition is newly contracted after the birth; and here also it is t fold. For it either succeedeth some foregoing Difease; it is immediately produced by an erroneous ule of the non-Natural things: We have fufficiently difcourfer both, where we hammered out the caufes of this Dile after the birth, and thither we direct the Reader.

Again, this Disease admitteth some differences by r fon of o her Diseases wherewith it is conjoyned in fame subject. It must not be expected that we she give in a Catalogue of all Diseases, wherewith this

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the A may possibly be conjoyned, we shall only recken up the ofe which are the usual Companions of this Malady. the me whereof have a certain dependance upon this difease soluted the causes of it; others have not any, or at least not ty worthy of a diffinct confideration.

Che Of the former kind are a Hydrocephalus, the fail's of using reeting Teetn, an Afthma, the Ptyfick, and H Etick feaver, a tga w, and erratical Feaver, and the Afcites, which is that myb ad of Dropfie when water hath gotten between the flesh mpr d the Skin.

thisd The Hydrocephalus hath a great correspondence at his th this Affect, sceing that this Affect also doth for eliptic e most part suppose an increase of the Head preternatudethe lay encreased, and an overplentiful afflux of the Blood which no the Brain by reason of the largeness of the Arteries fifts ither extended. And hereupon it easily comes to pass that made e Brain being oppressed with the abundance of the harm ood, must sometimes needs suffer the more ferous porwead in thereof (as being the most permeable) to evaporate spate sweat out into the Ventricles and cavities within the made payinges, and by consequence to produce the Dropsie Mean the Brain. But this, as we have already noted, doth comin wayes appear.

India The faults of breeding of Teeth also are fometimes justafcribed to this Difezfe going before. For it is well own that they who are affected with this Difeafe do menoly breed Teeth with extream pain, and many dictances the Teeth themfelves fall out by pieces. But we this use above reduced this fault to the unequal nourifhder, ent of the parts, and there the Reader may find further tisfaction. In the mean time it must be observed, that painful breeding of Teeth may likewife precede this ifeafe, and fustain the force of a cause in reference to its fublequent evil, as we have likewife fhewed above.

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Moreover, An Afthma or difficulty of breathing dot 觐 funcharly follow upon this affect, because the Bloot fomewhat cooled in his circulation thorow the first affe cted parts, and is rendred more thick, viscous, and flug gifh in motion, neither is it alwayes perfectly correcte before its return to the right Ventricle of the Hear Whereupon being unapt for paffage, it is powred bac from the right Ventricle thorow the Arterious Vein ir atta in the to the lubitance of the Lungs, and for that Reafon dot 200 eafily introduce obstructions, hard tumors, difficulty in thi breath ng, fomerimes inflammations, impoftumes, Ulcer the Pr, fick, the Dropfie of the Lungs, a Hectick Feaver, che a flow erratical Feaver.

An Afcites is also fometimes confociated with this A fect. But whether it proceed-from a copious flowing. ill'e the Blood to the Bowels of the Abdomen, we dare no attic yet arteft for an undoubted truth. Yet certain it is the 16 the flowing of the Blood to this Belly is very copiol ut, and lufficiently active in this Difeafe. For the Liver Bate great, and the other Bowels are oblerved to be rath niore full than ordinary, than pined away. Whereupon erca tale. may happen, that that watry moifture from the Bowe tintr which are oppreffed with a fulnels may be carried into th hollownels of the Abdonen, but we affirm this with a d peci s Affe fteuftful confidence, because we have not yet given of **TCE**ar Jelves full fatistaction in this matter.

Neverthelels these recited Diseases may happen to the Children although the Rachites have not preceded, ar may be the cause to introduce it. Yea, they may likewithen come upon this Disease from other causes; as for examined ple, by some errors in the Regiment of health; althoug in this case also this Affect may be partly guilty, if went before : And hus much of complicated Diseases the former kind.

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But of the later kind, namely, such as have little or dependance upon this Affect, are a malignant Fear, the French Pox, the Scurvy, and the Strumatical Af-

First it is certain, That a Malignant Feaver may me upon this Affect, because for the most part it is oduced by infection, from which this present Affect weth not Children free, we add only, that this reaver th seldom or never owe his Origine to this Disease.

Secondly, If the French Pox chance to be complicated th this Difeafe, it is either derived from the Nurfes intion, or from the Parents by Inheritance. For it is Difeafe altogether Diftinct from this, and hath fearce y affinity with it.

Thirdly, The Scurvy is fometimes conjoyned with this fect. It is either bereaitary, or perhaps in 10 tender a onflitution contracted by infection, or laftly, it is prouced from the indiferent and erroneous Regiment of the ifant, and chiefly from the inclemency of the Ayr and imate where the child is educated. For it fearce holdeth iy greater commerce with this Difeafe, then with other ifeafes of longer continuance, wherein after the fame anner the Blood in time contractech for the most part is peculiar infection, yet it must be granted, that is Affect doth formewhat the more difpose to the Scurvy i regard of the want of motion and exercise.

Fourthly, and lastly, The Stramatical Affect doth metimes affociate this evil. But it is credible that it owh more to other causes proper unto it, then to this preident Discase. Although we deny not, but this may miister some occasion of invading, in as much as it rendreth he humors more viscous and gross.

Some other Dileafes are peradventure fometimes comlicated with this, but because they happen exceeding R 2 rarely

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rarely, and have yet fcarce fallen under our observation; we pais them by, for the prefent and proceed to the figniof the Difease, and the difference of the figns.

## CHAP. XXI.

The Signs of the Rachites, and first the Diag noffical Signs.

We diffinguish the Signs of the Disease int three Chapters. The first container those Signs which demonstrate the presence of the Affect, and are called Diagnostical. The se cond containeth those that distinguish among themselve the differences of the Disease, and these are called, Diacri tical, or Discrepant. The third comprehendeth those Signs which presage the event of the Disease, and they ar termed Prognostical. In this Chapter we shall trea of the first kind.

We divide the Diagnostical Signs into Pathognome nical and Sycedremontal. And here the Physical Author feem to be more first in the definition of the word Pa thognomonicall, then the necessity of the nature of the matter doth require. For they will have it to be Insepa nable and (as Logicians speak) Propriam quarto modo that is, to agree, omni, soli, & femper. Indeed it mulbe granted, that such an Inseparable Sign, or, Propria quarto mode, must be according to the most proper sens a Pathognomonical Sign. For whether it be present, to whethe

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hether it be absent, it is ever demonstratively fignificant: Then it is prefent it certainly witneffeth the fpecies of e prefent malady, and being absent it sheworh that that ecies of the Difeale is not present.

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But when we truly and ferioufly confider how feldom ch Signs as these occur and of what useless confideratithey will prove, the knowledge of them being thus retained ; we are induced to think of the amplifying of e usual fignification of the word. For although the ncients to supply this defect, did substitute oud pounty zboyvapovenin in the place of one true Path gramon -Sign strictly taken, and we our felves do most willingaccept of, and approve this very fame oud gouin; yes ting that this oud county doth feldom appear from the gianing of the Difeafe, and by confequence feldom obneth the reputation of an Infeparable Sign, it necesrily followeth, that it also can but feldom perform the ace of a Sign, quarto modo proprie, and therefore alfo at this notion is reduced to an extream narrow use. We e compelled therefore that we may fully prevent, or aid this inconvenience to extend fomewhat higher the inification of a Pathognomonical Sign; yet fo, as that : will abate nothing of the Nature and certitude of the inification.

Therefore we define a Pathognomonical Sign to be mewhat appearing about the Patient, which certainly d infallibly demonstrates the Species of the Difease, nd in this extended sense it may be divided into a Sign leparable, or proprium quarto modo, and a Sign Serable; namely, as being proper only, Modo secundo; wit, because it is competible only to o :e kind of Disease, though not alwayes. In like manner the Pathogmonical Syndrome, or Concourfe of Symptoms may be vided into two kinds, respectively Analogical to those afor:-

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sforesaid. For sometimes it beginneth with the Disease i felf, and doth infeparably affociate to the very last pe riod. So the pricking pain of the fide, and acute Feaver and difficulty of breathing, and the cough, if they b taken collectively, they are indeed a Syndrove, but fucl an one as is alwayes equivalent to one fimple Pathogno. nt coi manical Sign of the first kind, and doth in:eparably ac company a Pleurifie from the first beginning to the ver end. But sometimes the Syndrome or concourie of Symp. toms is not compleat and perfect from the beginning o gas m attour the Difeaferyet afterwards it is made perfect by the intertuib. vention of the other Sians, and doth infallibly denote aped. the species of the Dilease. For example, in the imall Poupon the first beginning of the Difeate, the Synd ome i in-spp to incompleat, that it doth not yet certainly determine State of the the ipecies of the Difeale ; but afterwards the Pox break Frain ang out of the Skin very thick, and tending to maturation DIC D then the Syndrome is finished, and the species of the Diing o feafe is put out of all doubt.

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- But that a Sign proper to one Difease alone (althoug! Ens ti not in the fourth manner) whether it be fimple and loi crab litary, or compounded of a concourse of many together 第四小 may suffice, when it is present to make a Sign truly Pa-Why t thognomonical : It is manifest from hence, because, when all to Cont it is prefent, it doth as certainly and infallibly denou the species of the Affect, as a Sign doth, which is pro-ACS, W per in the fourth manner. For that which agreeth to one anti i species only, when it is present, doth necessarily infer Fift the prefence of that species also. Although therefore that a Sign proper in the fecond manner, be not Infeparable, 336 and where it is ablent, doth not determine the abience This of the Disease, as a Sign doth proper in t'e fourth manner; yet when it is present, it is as we have faid of the fame value and certainty. Fo. Phyficians do offecm the 精 dig-

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ignity of the Sign by the certainty of the fignificationfor to that purpole they enquire out the figns of a Ditale, that they may attain to a certain knowledg thereof. Therefore leeing that Signs proper in the lecond manner re equivalent in respect of their certainty, when they resent to Signs proper in the fourth manner: we shall ere comprehend them under the extended fignification f Pathognomonical Signs.

You may fay, after this manner many after-appearing igns may be reduced to the *Pathognomonical* and are onfounded with them. Be it fo, provided that they do nfallibly denote the fpecies of the Difeafe. For in thes espect they are worthy to be fevered from the other afer-appearing Signs, neither will any confusion follow tereupon in the method of the femeiotical art, but rather he value and dignity of the Signs will by that means be nore plainly and e filly observed.

Of the Synedremontal or affident Signs we have rehing of moment to fay, but will directly proceed to the signs themfelves as they are to be reduced into order Yet to exact method must be expected from us, because for he most part the Signs flow from io many several fourains, that they will scarce suffer themselves to be marhalled into any accurate order. Wherefore, that they may be constituted which have some affinity among themelves, we have reduced the signs of this Affect to the sublequent Method.

We shall propound therefore

First, The Signs which relate to the Animal actions. Secondly, Those which have reference to the irregular Nutrition.

Thirdly, Those that concern the Respiration. Fourthly, Those that appertain to the Vital Influx. Fifthly, Certain vagaboid and fugitive Signs redu-R. A cible

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cible to no Cliffis. Under each of which we shall subjoyn the value of the Signs.

First the Diagnostical Signs telating to the Animal Actions, are these. The loof ness and softness of the parts. The debility and languiduess. And finally, the flothfulness and sturifaction.

First, A certain laxity and softnels, if not a flaccidity of all the first affected parts is usually observed in this affect. The Skin also is soft and smooth to the touch, the musculous flesh is less rigid and firm; the joynts are eafily flexible, and many times unable to suftain the body. Whereupon the Body being crected it is bent forwards or backwards, or to the right fide or to the less.

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Secondly, A certain debility, weaknels, and enervation befalleth all the parts subservient to motion. This weakness dependeth much upon the laxity, softness, and litherness of the parts aforesaid : for which reason we have placed thole Signs before this, as allo this before the flothfulnefs and flupifaction in the next place to be enumerated, which owe much both to the loolenels and loftnefs. Moreover, this debility beginneth from the very first rudiments of the Disease. For if Children be infested within the first year of their age or thereabouts, they go upon their feet later by reason of that weakness, and for the most part they speak before they walk, which amongst us English men, is vulgarly held to be a bad 0men. But if they be afflicted with this Discase, after they have begun to walk, by degrees they ftand more and more feebly upon their legs, and they often ftagger as they are going, and stumble upon every flight occasion : neither are they able to fuftain themfelvs long upon their legs without fitting, or to move and play up and down with an usual alacrity, till they have refted. Laftly, upon a vehement increase of the Disease they totally lose the ule

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I if their feet ; yea, they can scarce fit with an crected are, and the weak and feeble Neck doth fcarcely, or nat all suftain the burthen of the Head.

Thirdly, A kind of flothfulnels and numbuels doth the in de the Joynts presently after the beginning of the ale, and by little and little is increased, fo that dayy sey are more and more averle from motion. The inst nger Children who are carried about in their Nurin theirms, when they are delighted and pleafed with any sman g do not laugh fo heartily, neither do they ftir the nicives with fo much vigor, and shake and brandish Marse r little Joynts, as if they were defirous to leap out of r Nurses hands, also when they are angred they nemed lot kick fo fiercely, neither do they cry with fo much In ceneis as those who are in health. Being grown greathe and committed to their feet, they run up and down alos wit a wayward unchearfulnefs, they are foon weary, and s bint / love to play rather fitting then ftanding, neither and win they fit, do they erect their body with vigor, but res a ty bend it sometimes forwards, sometimes backwards, fometimes on either fide, feeking some props to lean 1 1101 In that may gratifie their flothfulnefs. They are not en bein ghted like other Children with the agitation of their eabout ies, or any violent motion ; yea, when the Difeate ACLAND vaileth they are averie from all motion of their limbs: k.mid ing as they are at any play that is never fo little vea bad nent; and being pleafed again with gentle ulage and frer de et reft. In the interim, unless some other disease, Sympnore a is or caule of fickness doth come between, they are motagent ate in fleeping and waking, they are ingenious, not ccafin pid, but for the most part of forward wits, unless some er impediments arife, their countenances are much d de recomposed and severe than their age requireth, as if y were intent and ruminating upon fome ferious mat-Thele

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These Signs being taken together, unless they refi mith from some evident warines, or proceed from some pi mit mary affect of the Brain (which indeed happeneth ve all feldom in this tenderneis of age) do conftitute a fuffic alte ent Pathognomo ical Syndrom of the fi ft kind, and whe whet they are present together, they certainly witness the pr fence of the Difeafe, and when they are ablent togeth they infallibly atteft the Effence of this Difeafe. But at any time a wearifomnels do bewray any Feaverifh, other like Signs, they may eafily be diftinguish from these, both because the reasons of the wearines ha the gone before, and alto becaufe the Signs from thence rifing do fuddenly break out y and as foon vanish. tarct in this affect the figns do invade by degrees, and perivere, or elfe they are daily more encreafed. Now the teich primary Diseases of the Brain are diftinguished by the 100 proper Signs. And thus much of the Signs which rela Rover to the Animal Actions. 15.6

#### The Signs which belong to the disproportioned Nourishment the Parts.

Of how great moment the Alogotrophy, or uneque Nourishment of the Parts is in this affect, we have alree by shewed; we shall here therefore profecute those figwhich in fome great measure depend upon it. and we shall prefent them as if they were to be beheld at or View.

First, there appeareth the unufual bignels of the Hea and the fulnels and lively complexion of the Face, con pared with the other parts of the Body. But althous this Sign may prefuppole fome motion of the Difeafe b fore it shine out, yet is the Difeafe so obscure before the appearance of it, that it is accounted in a manner un perceivable

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ceivable : Therefore commonly this Sign sheweth it more or less from the first beginning, and continu-till the departure of the affect, unless (as we have ed before) the pining of those parts supervene from inc other caule.

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Secondly, The flefhy parts, especially those which full of Muscles beneath the Head which we have liil among the first affected, in the progress of the lease are daily more and more worn away, made thin lean. This Sign doth not prefently thew it felf in the beginning of the Disease, because it pre-requirfome notable motion of the Difeate before it evidently. in, weareth; yet in time it most certainly is exposed to fenfes, and accompanieth the Dilease to the last step Me it either to life or death ; excellently demonstrating motion and degree of the Difeale by its encreale. hithe preover this Sign being conjoyned with the former h at least constitute a Pathognomovical Sign of the ond kind, that is fuch an one as is proper to this fease alone ; and where they are present together they allibly deno. e the presence of this Difease, although on their absence they do not equally fignifie the abor und see of the Dileafe.

Thirdly, Certain fwellings and knotty excretcences, out some of the joynts are observed in this affert ; ne are chiefly confpicuous in the Wrifts, and fomwhat s in the Ankles. The like Tumors also are in the tops he Ribs where they are conjoyned with griftles in the caft. We have noted above in our Anatomical Obserions that these tumors are not scituated in the Parts, t in the very bones; although this confideration doth ree balong to them as Sign, facing that of themie vas y are fearce contpicuous. I his Sign doth alfo fuple some kind of motion of the Disease, neither is it emergint

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emergent a Principio principiante, as the Philosophe phrase it, yet it offers it self as an object to the sense sooner than any confiderable extenuation of the part But where it is present, it constitutes a Pathegromics Sign of the Second kind, and without dispute witneff the the Species of the Discase.

Fourthly, Some Bones wax crooked, especially th Bones called the Shank-bone, and the Fibula or th fmall Bone in the Leg, then afterwards the greate Shank-bone, and the undermost and leffer of the tw long Bones of the Elbow, but not fo much altogethe nor fo often; fometimes also the Thigh-bone and th Shoulder-bone. Again, there is lometimes observed certain fhortning of the Bones and a defective growth of them in respect of their longitude. This by chanc was omitted above, where we gave the Reafon of th Organical faults. Yet this affest doth seem to depen upon the same irregular nourishment ; namely fo fa ans forth as the nourishment taken in encreaseth the Bone according to breadth and thickness more than length From hence it comes to pass that fome Children long afflicted with this Difease become Dwarfs. Hither per haps may be referred that folding in the Wrifts, the Skin it may be having better nourifhment and more growth than the Bones of those parts, whereupon i Atl 1 must needs be contracted in the Wrists into a folding or wrinkledness. Finally, to this place also may belong a certain flicking out of the Bones of the Head, especially of the Bone of the forehead forwards. For it concerneth the common kind of vitiated Figure and the Alogotophry of the Bones. Yet this in the Bone of the 0.2 Forehead doth evidently feem to depend upon the free 110 nourithment of that Bone in his circumference, where with it is coupled to the Bones of the fore part of the 100 Head

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I, and conftitutes that feam called Sutura Coronalis, h lieth in the foremost parts thereof. For hereupon aft needs be thrust forwards. And indeed in that is plentifully nourished without any difficulty, use this Bone in Children is cartilaginous towards Seam. And this also was pretermitted above where is foursed of the Organical faultines, b. cause we have lately observed it.

ifthly, The Teeth come forth both flowly and with ble, they grow loofe upon every flight occasion, etimes they wax black, and even fall out by pieces. heir ftead new ones come again though late and with th pain. This kind of Sign, as also that which we notn the former Article, may be referred to the Synedretal Signs, because neither of these is either perpetually ent, or if it be prefent, it doth not undoubtedly coni the prefence of the Discase.

some have imagined that the Bones in this Difeafe transfigurable like wax; But we have never feen it, her have we received it from any eye witnefs who was of fulpected credit. Wherefore we reject this Sign as ogether Fabulous.

Sixthly, The Breaft in the higher progression of Disease, becomes narrow on the fides, and sticking foreright, so that it may not be unaptly compared to Keel of a Ship inverted, or the Breaft of a Hen Capon. For on each fide of the middle it rifeth up oa point, the fides being as it were pressed down. my demand whether this Sign be folely appropriated peculiar to this affect; We answer, That the Breaft y be a little encreased in an Atrophy of Phrissick, and than the other parts of the Body, and so by confeence it may be marrower : But it can scarce fo fall t according to the change of the Figure without an Alogat o

#### Alogotrophy, namely that which is proper to this I which feale. Wherefore this Sign allo when it is prefent, though the invation of it be tardy must be reputed a F thugnomenical Sign of the fecond kind, because when is prefent, it certainly denoteth the Species of the I feafe, though not on the contrary. And thus much the Signs which have reference to the unequal nourin ment.

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#### The Signs which belong to Respiration.

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First, The narrowne's and flicking up of the Bre already mentioned must be hither referred, whereof then discoursed at large.

Secondly, A fwelling of the Abaomon, and an exte fion of the Hypochondriacal parts, which hindreth t tree motion of the Diaphragma downwards, and consequence doth somewhat interrupt the breathin Yet it must be noted that the Abaomen and the Hy chondries also in respect of their outward parts appe very lean and extenuated, but inwardly, namely in the parts which are contained in the Cavity of the Abe men, they fwell; from whence arifeth this fulnefs. Th fwelling proceedeth partly from the windinels of t Stomach and Guts, and partly from the bignels of t Liver and other Bowels. Sometimes also a watry me fture into the Cavity of the Abdomen, introducing Ascites, joyneth in this conspiracy. This Sign 15 le dome abfent, and yet it must be numbred among t Pathognomonical Signs, because it is common to many oth Dilcafes.

Thirdly, A Cough is frequently prefent in this A fect, as also a difficulty of breathing, and many oth faults of the Lungs, as Stoppings, hard Tumors, Impo hum

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nes, Inflammations, a Co-alescence of them, with the a,and the like; Yet these scarce deserve to be reckoned ing Signs, because of themselves (whilft the Patient th ) they are not fufficiently confpicuous.

ourthly, Children afflicted with this Discase are """ fe from lying upon their Sides either the right or the or, at least it is troublesom to them; namely, either befe of the Cc-ilefence of the Lungs with the Plura, or by on of fome Tumor on the contrary fide, but to lye with r Faces upwards they are very much delighted. And fe figns also being taken together will not amount to hognomonical figns of either kind, but Synedremontal y and are common to other Difeafes.

#### Signs belonging to the Vital Inflax.

First, the Veins and the Arteries are more flender n ordinary in the first affected parts, and less conmous than you would expect in a lean Body. But in Face (respect being had to the gracility aforefaid in other part) they exceed the just proportion. This haps is a Pathog emonical fign, although it be diffit to be observed, and indeed not yet sufficiently fifted us.

Secondly, The Pulse in the Wrifts, and the other afted parts is small and weak, otherwise perhaps it is moare, unless when a Feaver is present.

Thirdly, A moderate Ligature cast about the Elbow the Knee, doth not fo foon fwell and color the part beith and above the Ligature with Blood, as it doth in ter found Children of the fame age.

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### Certain vagabond and wandring Sig"s.

First, An appetite to Meat and Drink that is eit moderate, or unduely weak, unless where a Feave: conjoyned.

Secondly, the Excrements of the Belly and Blad do commonly refemble theirs that are in health, un fome other Difease do interdict it.

Thirdly; It is observed, that those which are fick this difease do abominate sweet things, as Syrups, : Junkets condited with much Sugar or Honey : Perh also such things as these are hurtful for them, as also so those which are troubled with the Scurvy, because thread thicken the humors.

Fourthly, Some have observed, That they have for of fome Children affected with the *Rachites*, to weigh home vier than others of the same age and stature. If this days fo, it must be attributed partly to the facility, and parts ar to the inequality of the Nutrition of the bony substantiant in this Affect. For when this weight can scarce be als the bed to the Flesh, which are here extenuated, it seem hele plain that this must be attributed to the bony substance als and seeing that the Bones in this Disease are not yet of ferved to encrease beyond measure in respect of their long the thickness of them which is superfluously augment that the thickness of them which is fuperfluously augment that These are also common signs, neither do they meri soft more worthy estimation. And thus much for the Di hese another also the Discritical now follow.

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### CHAP: XXII.

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he Signs of the differences of the Rachites, or the Diacritical Signs thereof.

TE shall infift in the fame Method we propounded above, where We discoursed of the fferences, whole Signs we now enquire after. We quiet ve above deduced five differences from the very Efnce of the Difease. The first was separable frem the hat rts of the Secondary Effence, whether they were might elent or absent. But no other Signs must be expected It fides the very parts prefent or abjent, which of themand wes are subjected to the fenses, and therefore they whit : numbred among the Diagnostical Signs in the fecond cota affis in the precedent Chapter.

itien The fecond difference was from the magnitude of the blue leafe, the figns of this are many and great, or few igentle and prefent figns; namely, to be fetched froni their long the Diagnostical Signs above described.

mpate The third difference was taken from the vehemence of affect. This is diftinguished by the flow or quick ener met afe of the Diagnostical Signs,

The fourth was from the ftrength of the Sick ; we re flewed the way to judge of the ftrength above : Buc difference of a Discale arising from hence hath re-A unto the danger, and therefore we referr the Signs reof to the Prognosticks.

CHI The fifth difference was deduced from the times of the Disease,

### Difeafe. In which refpect we have above reckoned up fi the divers apparitions of this Difeale : to wit, The biginning the encre fe, the state or consistence, the encreafe biyon the ftate, the true declination, the Superiour declination, c the paffing into another affect.

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It must be known that the beginning of this Difeate with befides the Signs that difference this time from theDi encreale, doth likewise require some peculiar Signs cathe the prefence of this Difeafe : for it is a time of the great much test obscurity, wherein the Disease doth as it were lur table and hide it felf, neither can an unattentive and inexperient, Phyfician cafily diftinguish it from the Diagnostic. which Signs above rehearled. For by this time most of the Di to agnofical Signs aforefaid do not yet openly break forth and and fuch as make a difcovery of themfelves, prefent or Third ly fome obscure impreffions to the Physitians Observ. When Therefore the indication of this time requires a la the tion. accurate and peculiar collection of the first appearin with, Signs, and a diligent confideration of them; but the c four ther times, besides the Diagnostical Signs above grand is ted, want only a difference among themfelves, which mill performed by an eafie industry. Wherefore in the fir the place we will declare the Signs of the prefence of the the Difease, being newly begun or rather beginning, at Now then the difference between that and the encreafe. the for

### The Signs of the present Difease of the Rachites new not bigun.

First, Diligent Observation must be employed abo the three kinds of Signs afcribed above to the Animal 1 Stions; namely, the loofeness and softness of the part the weakness and languidness, the flothfulness and nun nels. For these do in a remis degree, and sub-obscure YIC

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dupi ield advantage to circumfpection and heedfulnels pretime ently a principio principiante, as they phrase it.

Secondly, The colour must be confidered, and the ba-( M.W. dut it of the Head and Face in relation to the Joynts. For the colour or the habit be more fresh and lively in Dia nofe than in these, it presenteth a ftrong suspition that un thais Difease hath taken root. For although the Bulk of Send he Head which is evidently encreased , and also the exhege inuation of the parts affected do pre-require some conatte le derable motion and duration of the Difease before they inme ppear, yet from the beginning a certain difference may and c observed by an accurate attention or intuition in refier peet of the heat and the habit of these parts compared skind ne with another.

refence Thirdly, The Wrifts and the extremities of the Ribs Ohim wift be noted. For before the end of the beginning cermins ain rudiments of knurls or knots begin to appear in the Wrifts, and Excreicencies alfo in the tops of the Ribs.

The Fourthly, A kind of swelled fulness and stretching the ment elly is conspicuous immediately after the beginning, ewhich pecially in the Hypochordriacal parts. For the magniin the ude of the Belly compared with the magnitude of the e of Breft exceeds the just and due proportion.

Now these Signs coilectively taken do affuredly denonstrate the presence of the Dilease even from the very eginning. But if no sensible and manifest extenuatin of the first affected parts do appear at the fame time, n that very respect it is cleerly diftinguished from the ncreale thereof.

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The Signs of the other times are with ease differenced rom one another by the descriptions of those times aleady laid down ; yet because they may point to this place, and be dispatched in a word, we shall not decline he Annotation of them, All

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All those Signs which appeared at the beginning be come more intense and evident in the encrease of the Difease, and many other and more grievous are daily accumulated. This time, as hath been faid, is diftinguished by the manifest extenuation of the first affected parts but after the confistence by the continual aggravation of the Symptomes and Signs aforefaid.

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In the state of the Discaie the Signs and Symptome are most outragious and confpicuous. But so long a shis time lasteth it neither manifestly encreaseth or decreaseth.

In the Increase beyond the State, the Signs and Symptomes exceed that condition which they retained in the indifferent State, both in respect of their magnitude an webemence, and likewise in respect of the celection of th Spirits, and from that time forwards they daily grow morf and worfe; for which confiderations this time is diffinguished, as well from the ordinaty encrease, as from the means of the confistence.

But in a true declination A kind of simple remission of the Symptomes and Signs tending to a perfect restauration of health begins to discover it felf; no other Signs of the invalion of any other Disease appearing.

On the contrary, in a spurious and illegitimate declination, Other Signs of a new fucceeding affect an involved and complicated with the Signs and Symptomes of this Difease: and these are distinguished according to the various condition thereof, and must be fetched from their proper fountains, and ought not to be expected here. Moreover, if any particular Signs of any of these times do occurr, which concern the event of the Disease, they must be referved among the Prognosticks; and thus much of the Signs of the Differences of this affect deduced from the Effence thereof.

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The Differences of the Caufes diffinguish the Diferso nto Natural and Accidental, and the Natural again nto that which is properly fo called, and that which is pin o termed improperly. A Natural Difease properly to alled, because it is improfed to be actually present from he very Birth, requireth no other Signs than the D.+ note gnostical recited in the former Chapter. For upon heir appearance presently after the Birth the Difease is and certainly known to be Natural.

But if those Signs appear not presently after their Sim Birth, yet a Natural disposedness to this Disease may be inherent from the Birth , which afterwards actually preaketh out, and the difease produced by it, may though with fome impropriety ) be termed Natural, in regard of that dependance upon the Native faultinels. A Natural Difeate in this fense, requireth other Signs is in han those which we have recited above, to diffinguish t from the fame Disease when it is altogether and plainy accidental.

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### The Signs of a Natural Difease improperty so called.

Fift, A weak and fickly Constitution, and the Difinfer of both or either of the Parents: As a cold and moift d.ftemper, a Cacochymy, especially the Plegmamatical, a Cachery, a Dropfie, an Atrophy, the Ptilick, the Gamerbea, the Whites, the Venercous Pox, the Scurvy, and the like affects.

Secondly, The Slothfulnifs, Effeminacy, and Sedentary life of the Parents.

Thirdly, The Errors of the Mother during her going with Child, all which things we have discussed above more at large, when we examined the Caufes of this Difeale in relation to the Parents.

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Fourthly, The Debility of the new-born Infant whe at proceedeth not from the difficulty and labour of sk Birth.

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Fifthly, The invasion of the Difease before he is exact than a jew old; for this argueth some Natural disposition 1 the lame.

Sixthly, If the claer Brothers or Sifters were befor aff Eted with the fime Difease; for then it may well t igns aire fuspected that some Infection was contracted from th Parents.

at an it Seventhly, If no remark ble error was committed i looking to the Child ofter the Birth , and before the invalid way w of the present Difease. Of which we have spoken abou FIELDS, in the Chapter of the Caules after the Birth. acomp.

Eighthly, If this affect bath not succeeded some othe meir St which was apt to leave this behind it. Of the Difeales this kind we have allo discoursed above.

The Signs of a Difeate newly and totally contracte Mans In tently : atter the Birth, are in a minner contrary to thefe, an 12 mag therefore we fhall only run them over.

First, If the Difease cannot be imputed to any weak e ai feased Constitution of the Parents, or their manner of life or the errors of their cultoms.

Secondly, If no debility appeared prefently after the Birth.

Thirdly, If the Difeafe began when the Child was about eighteen months ol ?.

Fourthly, If the Brothers and Sifters were free from th Difeale.

Fifchly, If any notorious errors were committed about the Child after the Birth.

Sixthly, If any Difease went before which might occa fon a sufficient that this followed it. If there be a con fluence of most or all of these Signs, they do sufficientl

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st me itnefs that this Difease must not be attributed to any f atural Infection, but to the future Errors and Irregutritics. And thus much of the differences of this Dife una ale, in respect of the Causes.

Lastly, Some differences happen to this Disease by cason of other Discases, wherewith they are peradventure ofitions m bie omplicated; in which case, besides the Diagnostical will bigns already reckoned, fome other may be defired as peion meuliarly proper to the complicated Difeafe. Nevertheleis in accurate Description of them cannot be here expected, mitted apecause for the most part they are the same which are every where attributed to those Difeases by practical with Writers. But because some Diseases do more frequently accompany this than others, we will briefly look into methe their Signs.

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First therefore a Hydrocephalus or Dropsie in the Head being complicated with this Effect needeth fometimes no contride Signs to make it known, but is fufficiently, yea abuncantly man fest of it felf : namely, either by the exceedbife, in ing magnitude of the head, or by the water that is outwardly contained under the Pericranium ( which norwichftanny weak it ding we suppose doth very rarely happen ) or by fare extrem opening and wideness of the ferms in the Head, water biving gotten into them, and lifting up the Dura Mater, fo that a fost and waterish tumour is outwordly perceivable by the touch in the spaces between the Bones. Many times the Hydrocephalus is somewhat obscure and requireth Signs to difcover it. First, Therefore all the inward and outward se fes are more dull than otherwise they use to be in this affect. Secondly, The magnitude of the H ad is sometimes greater than at other times. Thirdly, To Sutures, or feams in the accustomed places do gape re wide, and are closed again more flowly than they are wort to be. Fourthly, The Bone in the Forchad is HEON C S 4

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more outwardly flicking ont, and in the other Bones of the tough in Head you may observe certain inequalities and bunchings ou munter of art un fual bigness.

Secondly; The conjoyned evils of breading Teeth are ged, thus known. I. If the accustomed time of breeding Teetlin is d be either approching, or now at hand; for from hence a. wifeth fome fufpition of pain from thence proceeding, willy, This time ordinarily beginneth in the feventh month af- a had, ter the birth, and continueth till the Child be a year and stilles fix months old, and longer, if the Teeth come flowly ; while which hapneth very commonly in this affect; and it and it endeth when the number of the Teeth is complete. 2. 18 (14,15) Children to mitigate the raging pain do use to put their pody me Fingers in their Mouths, according to that old faying, them a ubi colors ibi digitus. 3. The Gums wax white on that fide where the Tooth is to break out, and are former bat hot a parts in the touch. 4. The Teeth that come fo th fometimes is eree wax black or are loofe, or fallout by pieces. 5. To thefe tical: 3 you may add watchings, the loofeness of the Baly, Feavers and Convulfions , which notwithftanding are chanceable define Symptomes. , also

Thirdly, An Afihma is perceived by the very diffieulty of b eathing, when it doth not proceed from the firetching and fulnefs of the loweft Belly. But if withell there be a swelling or Imposibure, and that in either fide of the Lungs, they can fearce endure to lie on the contrary five; but if it be on both fides, then they defire to lie eneet or with their Faces upwards. The fame thing for the most part hapneth is an Inflummation, with a growing together of the Lungs with the Pleara, as also in a Pleuvise, but then there are added, an acute Feaver, tough a d spitting of Blow', moreover in a Pleurifie a pricking pain in the fid. The Ptifick is known by a diuturnal cough, and a round fh and some a putulent soittle ( ile. ough

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hough indeed Children do seldom spit out, because myse: matter which the Cough setches up into the Mouth is fivallow by the Oesophagus) also by a patrid Feaver when syned, and by a sudden Colliquation in the parts. An sum ites is discovered by the unreasonable bigness of the uncer omen.

inding jourthly, A Hectick Feaver bewrayeth it felf by a conwhat hal heat, being for what more vehement than that in arun motiaian Ague, especially about the Arteries, and lonlyn encreasetb after the receiving of meat; also by the and It and peedy co sumption of the parts: a putria Fea-It, 10 is known by the uria being at the beginning crude, of-"In pards more concocted, then also from the extreme and colour of it. Moreover, if it be an intermitting Amine, it is differnable by the isequality of the heat, the exmust al parts b ing at the beginning extream culd, and afteraduands exceptive bot; also from the fits either constant or Total; again, by the co traction of the Pulle open the Fund oach of the fit, aft ravaras uninely encreased. A concub al Forver i, know i by in interfice and u -intermitting , also by thirst, roughtefs of the Mouth, and the and the like.

touch ifthly, The Venerious Pox is fuppoid to meet in fuile ipleation, if either of the Parents or the Nurfe were briefly re infected; if any ulcers appear in the Head, Mouth tenan Nostrils; or if any uninest and crusted wheals brenk pluss, of pecially field as ordinary Medicines cannot fubdue: ing tenund tumors grow co fpicuous, or knots defiling the complets in the Fingers with rotteaufs, or any other parts; if iPler wiet ofs and bitter pains in the night-time alarum the (unit); or if B bo s bleak out in the Groys.

india intelling The Survy complicated with this affect hath idead is figns: I. They that labour under this affect do imfaither stly indure Purgations; but they who had only aftelid

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fetted with the Rachites do eafily tolerate the fame. They are much offended with violent exercises, neit, car they at all endure them. But although in this affe alone, there be a kind of flothfulnels and aversation fre exercife, yet exercife doth not fo manifeftly, at leaft r altogether fo manifeftly hurt them, as when the Scur is conjoyned with the R chites. 3. upon any concitat and v bement motion they draw not breath without me d fficulty, they are vexed with diverse pains rum through their Joyats, and the fe they give marning of they'r crying, the motion of the Pulfe is frequent and unequ and cometimes they are troubled with a Palpitation of Heart, or threateed with a Lypothymie, which Affects for the most part foor mitigated, or altogether appealed laying them down to reit. 4. Tumours do very co monly appear in the Guns. 5. The urin upor the able parts b of the accustomed Feaver is much more istense and encreas HS IO VE

Seventhly, The Strunatical Affect, if extremely co te can plicated with the Rachite., is fufficiently confpicuous t beft an Swellings obvious to the fenfes ; yea, where many kn necell ty Excrescences do outwardly occurr, it may be jul tentelat suspected that the like Tumors do lurk in the Bowe But if the knots grow inwardly only, they are fearce o L But cernable by any certain fign ; for that Rule which fo 15.2 have observed, namly, That whole which have thort Nec traty co low and narrow Forcheads, with compretied Templ the w and wide Check-bones, are subject to these firumati s is the Tumors and Excrelcencies, is too uncertain and fallib nelogi Others afirm, That Purging Medicines taken otherw Gener in a just proportion will fcarce work with those who thus affected ; but we answer from our own Experie That it is fometimes only, and not always true. Ent, T much of the figns of the differences.

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### CHAP. XXIII.

# The Prognostical Signs in the Disease of the Rachites.

His Difease in its kind is not mortal, yea sometimes it is fo light and gentle, as the Children affected therewith have been reftored to health by the fole benefit of Age, the Vital t being encreased and summoned forth to the exterparts by the force of frequent Exercifes. Yet it fomehes to vehemently prevaileth, that the iminent danger mays life can scarce, yea sometimes cannot be prevented by : best and most prudent applications. Wherefore it is y neceffary that a Phyfitian fhould first diligently ntemplate the Prognoftical Signs of a difeale, that he y be the better inftructed to foresee the several events it. But in general those things which abet the Difease, it is, all fuch things as war against Nature, require a strary confideration, and as these are the ftronger and ey the weaker, fo much the more grievous and pernius is the Difease. But because it is not obvious to eveone to give an accurate Judgment of Particulars from is General Admonition, it will not be impercinent or profitable to infert fome particular and special Rules d observations hitherto belonging.

First, This Difease properly Natural, or that which indath before the birth, is the most dangerous, and selm, if ever, eads in health. For it argueth a deprivation of

## of the Seminary principles, and by confequence th for ddi the Spirits are very infirm; besides it infinuateth a v is manif hemency in the causes.

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Secondly, The more early the inv fion is after tentof the Birth, the more dangerous (cæteris paribus) the Dicacels u eafe is: for the Spirirs are fo much the weaker. In li ush and manner, The Elder Children, and fuch as go up and aow equively are more eafily cured then young Infants that cannot unity me their legs.

Thirdly, A Disease improperly so called; nam Eightly, ly, that which in part dependeth upon the Nat atenates ral Inclination, is more dangerous than that whitetereofth is contradied by the meere error of the Nuise or Minhly, ther.

Fourthly, Tois Difeafe proceeding from some otherhead the fore-going Affects, is more dangerous that the along of which is introduced by an erromous R giment the other health; For it implyeth a precedent dejection of the Head, Spirits.

Fifthly, Some have observed, Toat Isfants who ha more da bad Red Haired women to their Nurfes, have been mich neum obsoxious to this affect. Yet we indeed suspect this ruth are no of some fall bility.

Sixthly, Some aftern, That Givls are more frid, arein quently infelled with this D'feafe than Boy, and mo wai we eafily tweed. The truth is, we have not yet had a dreabed by unfulpected experience of this. Yet we grained, a that Girls are of a more cold and moift tempe areaded rament, which holders the greatest correspondence mentily with this Difeafe, and for that reason probable it the read that the Female Sex may be affected with the light in Mon ter caufes, and for the fame reason also be the looner re flored.

Seventhly, This Difesfe dock shiefly invade the Gr.

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of the Gentry, especially of those who live at case, fare deliciously; then of the poorer fort, by reason with 10 he manifold and various errors which necessity inuceth as well in the Dict of the Parents, as the Reent of their Children; but it findeth the most diffiaccess unto those who are priviledged from fuch afa, las s by a mediocrity of fortune, and accustomed to undergo under paint-tiking and labour, and are not destitute of under flary means to fustain life and a healthful compeut y to prevent indisposition.

the number of the Diferfe.

for linthly, The greater the Head is, the longer and theorder is the Cure. When therefore the Bone of the fore E chead flicks much out forwards, it portendeth at the let a long continuance of the Difease; the same also signed he other irregular flickings out of the other Bones ton deche Head.

enthly, The weaker the Back-hone, the greater more dangerous is the Affect. Wherefore they what with are unwilling to fit upright, much more they with are not able to fit upright, but most of all they wife feeble Necks cannot underprop the burden of the d, are in hazard of their lives. Moreover, by the all D urnal weakness and bending of the Back-bone, the different become Crook-back'd, or some other wayes is a rvated, and the trunk of the Body is afterwards in the reducible to its Native Figure.

the ends of the Ribs prefage the continuance of the L afe. Moreover, The crookednefs of the Shank-bone, Suder-bone, or the Bone in the Arm, prognosticate no L Again, The greater that the inflection of the Joints

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is; the more difficult and retarded will the restaura, and 被7 長北 bc.

Twelfthly, They whose Thigh and shark-bones ntion of much encreased, rather according to latitude and thickn mousin then according to longitude, for the most part becavilit dwarts.

131y. They who draw their Knees upwards and um the lith lingly, fuffer them to be extended, vecover not with the ma Some difficulty. of the L

141y. When the Teeth Wax black or fall out by pien, we bere is Some danger; and fo much the more; the later anene come again; that is, others in their room. W at

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15 1y. All they who attain to the confistence of the I willing of ease, escape the danger of it, being carefully lookt un, were ualess perhaps some other Disease be conjoy ed with it funtion de accidentally come after, and diffurb the Patrone. with a higher encrease. In like manner the declinant R of the Symptomes doth affuredly promise a restitution and Fo bealth. a the ney

161y. If an Hydrocephalus be complicated with 動間面 Rachites it ever importet b great danger. But if it pre unisade far, as that the Sutures of the Brain-pan do gape, 12:0, / that some water gotten into the middle Spaces aoth Jul Fine the Dura mater into a waterifb and soft Tumor, in balle mortal L danger

171y. A painful and laborions breeding of Teeth co 110, fometimes accompanied woth most vehement Sympton 15, 121 and even threatneth death. But commonly it is vio and ceaseth in a short time; however, so long as i in Score conjoyned, it much accelerates the motion of the Dife But the Dog-Teeth come forth with more vexation, the the reft and portend more danger. 18:1 da

181y. Az Afthma ( especially the Orthopny, W the Patient cannot draw breath, but with an erec and in

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that, and that difficulty of breathing when he cannot lie ber file) is very daugerous. For that prompteth to that pition of some Tumor, Imposshume, Plurise, of luche monation of the Lungs, or some growing of the at he zs with the Pleura, all which affects want not thein er.

and unally. If the Prifick be complicated with this Affect, it will r the most part mortal, of pecially if one and the same c of the Lungs continue above forty days.

topic >. We affirm that if this Difeafe be of any long conalteriance it eafily changeth into the Ptifick, or a Confump-, or at leaft commonly brings a Confumption to the of the Denetion of the Sick, unlefs some other affect peraduenlater, or grievous symptome do intervene, and prevent the withit, umption by bastring death; as a Convulsion, the on Par Cough, the swelling of the lungs, (vulgarly called, define E RISING OF THE LIGHTS) a elimine innal Feaver, a Pleuriste, &c.

n the next place, We aftert, That if a Dropfie of the d with gs, or an Ascites be complicated with the Rachites, it is pre-ends a desperate and deployable condition.

gain, An Hectick, flow, putrid, and especially a conaction of al Feaver, co suming the first affected parts dotb vehcture, thy basten the motion of this Disease, and render it the e dangerous.

Inthe Alfo, If the Venercous Pox be co-faciated with the Rasyntheses, be it hereditary or contracted by infection, it is alit in the uncapable of remedy.

the Scurvy likewife conjoyned doth very much retard the indirection of the pox.

autors in like manner Strumatical tumors either internal or ernal do not very much suspend the bopes of sures ugb otherwise of themselves they are not easily uge dued in this tender age. For the external parts

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parts are exulcerated, or inflamed with infupport: pain, and do vehemently irritate Nature, and waft Spirits, but the internal much more, especially, if it the invade the more noble parts, or bring molestation to adjacent members with their weight and bulk.

Moreover, Whefeever are not perfictly cured brj the first five years of their age be spun out, they aft wards for the most part live miserable and fickly, the Mer being either Asthmatical or CacheEtical or Prysical t die bisfore they arrive to the co sistence of their age, or they grow deformed, crooked, and dwarf sh.

If Scabs, wheals, pimples, or the itch come aster this and feet, it doth hopefully expedice the cure.

Finally, They which eafily endure any kind of agitat of the Body, exteris paribus, are cured without a fficulty.

Thus at length we have finished the History of tough per three kinds of Signs, according to the best faith of cochance observations hitherto. In the next place we shall prusuit ceed to the Method of practice, which comprehende communithe prevention and cure of this Difease.

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### CHAP. XXV.

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be Method to practice and Indications in general.

HE Method to practice is divided into the Therapeutical and the Prophylactical part, or the cutative and the Prefervative. We thall discourse of the former in this Chapter , alfory dough perhaps we thall here also propound fome things ich are common both to the Prophylastical part, and faller : Eugicibal. But the Prophylactical in particular and mind communicated we referve for the close of this Trate.

The Curative part is usually called the Method of e, whereof, as of every other art, there are two general truments, namely, Reafon and Experience, the uniting ereof comprehenderh the whole skil of the Artift Now experience we understand not only the Hiltory of one. no e Difeases, and the success of Medicines, but also observation; that is, the application of the Histories o those things, which reason dictates in the same af-, and that by way of comprobation or difallowance. like manner, by reason we mean every operation of mind, to as we do not only comprehend the third, nely, ratiocination either demonstrative, or probable Analogal, but also the first and second, that is, a sime apprehension ; comprehension ; and division. For this part

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part of Medicine includeth or rather presupposeth the third and Phyfiology, Pathology and Semeiotical part, which cer is Defer tainly require a manifold exercise of every operation cind, let the understanding. Again ; no man can understand an a Indian proposition, who doth not first apprehend the fimplin of terms thereof, nor any Syllogifm, who is ignorant of the thing Propositions of which it confisteth; fo that it is mani wh mu fest that every operation of the mind doth meet with and Firth, I employment.

Indication, That noble inftrument of the Method chinan, Cure ( by the use whereof the Dogmatical Physitians counded to principally glory to diferiminate their Sect from themobe Empericks) doth likewife vindicate a station amonius (e the parts of reason. But because some things both diff the dein cult and obscure do occur concerning this instrumer met only which have not received an unfolding and full illustrat stermine on, from the Neotericks themfelves, we judge it exped The Ge ent here briefly to unvail them by an examination. W: Cerived will enquire therefore. dicate in to inger

First, What is Indication ?

Secondly, unto which operation of the understanding Bioveab rel teth?

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Thirdly, Into what kinds and differences it is diftridone int First, buted ?

As for the first, although perhaps many fignification for ons of this word maybe found among Authors, yet that is the best and most proper which is delivered by Gale and in his book de Method. Meden. Indication (faith he) alcarce r an infinuation or declaration of the confequence, that tiefore, of fourthing to be done. In this fense Indication may har, defined and described to be an objective action of t e thing Indicant relatively confidered, which representeth to the understanding the thing Indicated, that is, what may Tich . helpful what hurtful, and by confequence what must 4Gales in ch

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what for faken and avoided; that is Description or Definition may be the better undernation ood, let us further examine what is here fignified by that we is indicant? what by the thing indicated? what the s first tion of the Indicant is? of what use diffinction is of antifue thing indicated into helpful or hurtful, into that is much hich must be chosen, and that which must be refut what d?

First, Although those terms Indication, Indicant, Method dicatum, or the thing Indicated may peradventure be finance tended to other Arts and Sciences, yet because it hath them t there been only appropriated by the Industry of Phymann ians (especially of Galen) to the Method of Practice, bond eir definitions which we shall here declare, shall have infrance spect only to this Method, all other use of them being illubre etermitted.

The General Definition therefore of the Indicant must derived from the most general Nature which doth dicate in our Art. The Indicant therefore may be deed in general to be a state of the Body as it is fluxible moveable, or rather, as it is actually influx or motion, latively confidered, namely, as it intimateth what is to done in that particular.

First, We affirm that the Indicant doth perpetually uply some state or condition of the Body; wherefore cause that which is without the Body, and doth nor t affect it, is no state or condition of the Body, it n scarce rightly be said to indicate. The external cause erefore, which doth not yet affect the Body, is not the dicant, although the aversion of it may possibly be e thing indicated. Secondly, the state of the Body it is frail, or movable, or rather as it is actually in otion, is required to the Effence of the Indicant. For Galen most luculently proveth to Thrashb. If our Bo-

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dy were immutable and perpetual, there were no need o Medicine, but because the heat doth continually feed up link, on the moisture, and because health it felf in the moisture? perfect state is frail and fluxible, yes actually fluitant on them and in some measure is already flowed away, manifel perhap it is that the Phylitians Art and the Practical Duty of proceed the Physician are both exceeding requisite. For if this, at ftate of the Body and the alteration thereof be only conf. fidered absolutely, a bare and naked speculation only re Weat fulterh from thence : but if it be confidered in order tuitist that which is to be done, whereby the Phylitian making of rightly execute his duty concerning that fate, prefent I Adim ly is meriteth the denomination of a Practical Instrumbio ment, and is invested with the nature of an Indican Stond For such a state doth indicate, as it is frail and in mol thim tion, that care must be every way had of the health, and mid that that care must be exercised and practised with a binded diligence and circumspection. And confequently thidion, very general Indicant doth point out that which the Third general scope of the Physicians sought after, but it musin nou not be expected that the confideration of the most geling neral Indicant can represent any other thing than a morning general action correspondent to the general scope. Fellidio if the Phylitian defireth a higher profecution of than; particular scope, he ought to descend to more particular mation Igarcants. a if neit

Secondly, The thing Indicated is a Medical Actio Platen required on the part of the Indicant. For the Indican Inquili primarily and formally denote th the action, but second all p darsly and by confequence the inftrument wherewith the second action is perfected. Therefore by way of an appendix le profice us add to the proposed Definition, that secondarily, b but by confequence, and in a concrete acception, it includeth the second Inftrument wherewith that action is accomplished.

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ind up. First, We fay, that the thing indicated is an action. motor the Physitian userh Indication to that end; that hurant, om thence he may collect what is to be done : you will mild y perhaps, that when the crifis is at hand or legitimat-Duy of proceedeth, the thing indicated is an abstinence " if incom, or a suspension of the action, and not the action ic aly con-If.

only to We answer, that this abstinence in that very regard enter what it is enjoyned advisedly and according to art, is ein my dently contained under fome kind of notion of a Mediprefent-I Action; and the fame is to be faid of any kind of Infin ohib tion of any action in our Art.

Indicated Secondly, We fay that the thing indicated is a Mediin mol Action, that is directing the Action to health. For in, me end of Medicine is health, and therefore that Action with a hich doth aim at health is rightly termed a Medical taily the Rion.

which the Thirdly, We fay, That the thing Indicated is an Aminution requisite and importing, at leaft in respect of the molt go dicant. For every indicated action ought not preana ntly to be reduced to Practice, neither can it be fimopt. For y faid to be requilate, but only in reference to the Ind decant : wherefore it must be exposed to a further exaanticul fination before the exercise of it can be refolved on ;

nd if neither the Spirits do diffwade, nor no other conal Afte a-Indicant doth more potently refift, then it is fim-India y requifite, and must be put in practice in its due time, hat here ith all poffible convenience. And hereupon the thing menthe dicated is rightly diftinguished into profitable and perdix nprofitable. The thing indicated becomes unprofitable ther by defect of Medical matter, wherewith it should indent : accomplifhed; or by the prefence of a ftronger Prohiint, or contra-Indicant.

Ed Again, A thing indicated and profitable is rightly T-3

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fubdivided into an Indicate, Circumstantiate, and non- in sell circumstantiate. The first by which is meant an Acti muts, on rightly clothed with circumstances must be profe- in Euted without any delay. The second must be deferrer mehtat untill it have perfectly acquired due circumstances. We deit ap fay fourthly, that a thing indicated in a concrete and un, An fecondary fense doth also include the Instrument, whereby omult b the Indicated Action is perfceted, As for example mesurthe flate of health doth primarily and formally indicat mitching an act of confervation, but fecondarily and by conferration quence it doth withall indicate the Inftrument, whereb athe Spi we conferve it. This paffage of an Indication from the time, Action to the Inftrument doth not feem to depend up that a on the fole vertue of the Indicant, but in part also upor action b fome general certain and commonly received principles mily tak as like things are conferred by the like, things contrathe bliged t ry are cured by their contraries, and therefore we indu then the Strioufly faid that fuch an Instrument is the Indication Belide or thing Indicated in a Secondary fense, and by confe laving a quence inferred, and becaufe it includeth the Action to the Day gether with the Inftrument, we termed it fo likewife in a metter der in v concrete fignification.

Moreover, Seeing that the practical dury of a Phyfi turnet tian hath great affinity with the Indicated action; we take price fhall here confider wherein they unite in fome agreement, and wherein they differ among themfelves. The general Duty of a Phyfitian is to attain (as much as in him lies) the end of his Art, namely Health. And that fame obtaining of Health is in a manner the mofi general Indicated Action, yet this is diftinguifhed from the general Duty of a Phyfitian, because the Purchase and reftauration of Health is not alwayes attainable. Therefore although the obtaining of Health be perpetually Indicated; yet when that is impossible, the Phyfitian

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ian is difobliged, feeing that no man is bound to impoladd ibilities, and to confequently, it is no part of his Du-In like manner an Indicated Action is fometimes y. inprofitable for the reasons before alleoged, in which ale it appertaineth not to the Duty of the Phylitian. Ama gain, An Indicated action, though when it is profitable int t must be performed in its place, yet so long as it coninues un-apparel'd and devested of due circumstances, it preffeth not the Dury of a Physician. For it is the part on of a Phyfitian not only to preicribe things profitable there in the Species, but they must be fuch, regard being had roma to time, order, and other conditions of a just and reund gular administration. Finally a profitable Indicated Mour Action being robbed in all its due circumstances doth truly exact the Duty of a Physitian. For a Physitian is obliged to execute fuch actions, and only fuch, at least when they are confpicuous.

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Befides; the fcope and intentions of the Phyfitian having a diverse respect to the Indicated Actions and the Daties of the Phyfitian, and holding fome commerce with each of them, we shall likewise here confider in what respect this falleth out. But in the very entrance into this Discourse these scopes seem sometimes to be properly diffinguishable into the little notions or forms of enquiry after every Duty of a Physitian, and the things themselves to be enquired after. The forms of enquiry are nothing else but apt Questions or Interrogations, which subdivide every Duty of a Physitian into lo many parts, as it containeth to be distinctly fifted and examined. Argenterius reckons up nine Forms of this kind : First, Whether ? Secondly, What? Thirdly, With what matter ? Fourthly, How much ? Fifthly, Of what kind ? Sixthly, After what manner ? Seventhly, When ? Eighthly, Where ? Ninethly, In T 4 what

what order a thing must be done ? Others contract in #4 these to fewer Heads, but for further satisfaction the muther understanding Reader may confult with the Books. Mr. how The real Scopes or things themselves to be enquired are those very parts, into which each Duty of a Physitian animity may be aptly diftinguished. They are therefore fo many ) they can in number as there are found parts in that duty to be iteorelating These Scopes thus found out differ not motified examined. really, but only in reason from those that are yet to be the, and found out, namely in respect of the diverse relation to ing with the intellect leeking, and actually understanding. From hence it appeareth what aifinity there is between these tome may Scopes and the Duty of a Phyfitian, and also the in-the metr dicated actions. For the notional Scopes or forms of stansitt Scopes, and the things themfelves to be enquired after a Att of 1 under those forms do both aim at the fame mark, namely Tethis we the diffinct invention of all the parts of a Phyfitians be enten Duty. But the things to be fought out are the parts minimum themselves of the Dury aprly separated and disjoyned mither V from one another the better to facilitate the invention and Vice and examination. kind of re

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Moreover, Those parts of this Duty, in as much as en the tern they are found out by the force of Indication, are the ID 15 Dot a very indicated Actions; fo that the Scopes invented by and the of the Indication, and the Indicated Actions do really figthad of Phy nifie the fame things; We fay really, because the Scopes and the u even when found out differ in reason from them as they e éid Galen are Scopes, feeing that befides the Indicated Actions they ethereof. feem to note together an intention of profecuting the fame Sector bal Actions, as the Scopes not yet found out do intimate an either an intention of enquiring into them. Thus much of Indicates athe Indi or things Indicated.

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Thirdly, Ibe action of an Indicant is Objective and Indi-

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innum : ant, as an Object besides it Self, doth in some fort instion the : another thing to the understanding. Perhaps some may Book ler, how an Object can represent any other thing besides index 16.2

hytin e anfwer, Such is the Nature of relatives, that (as ) they cannot be conceived without an implication of correlatives. For one relative in his proper confideint the doth at least obliquely involve the confideration of her, and by what means it easily ultereth the undertion to ling to the knowledge of the other.

the institute one may reply, If the force of the Indication be built the institute meer relation of the Indicant to the Indicatum, forms of comes it to poss that the use thereof is restrained solely ted after ne Art of Medicine?

sand o this we answer, We deny not, but this instrument hylitan be extended to other Arts and Sciences, as we have the partice infinuated. For in moral Philosophy it is lawful spins y, that Vertue doth Indicate the protection of her and Vice the suppression of it felf. But neither doth kind of relation confift only between the States of gs, and the Actions thereunto belonging, but also benuch an the terms meerly speculative, as twice two are four, at in is not a horse. But here we consider the Inaicatiented by ind the efficacy of the Indicant only in order to the ally had of Phyfick, fo as it will not be here needful to scores ad the use of this instrument further, neither inunter did Galen, because it would contribute little to the instance : thereof. Yet we affirm , that every relation is not the find ficient bafes of an Indication, but it must be fuch, as imate alla either an evident conformity and agreement bendian n the Indicast and Indicatum, whereby they may be marchalled into a proposition of undoubted truth ; Ane adder difparity and repugnance of them among themfelves Ind. that

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that fo they may aptly be divided from one another; the Forth is, they may be disposed into a negative proposition matur qually certain. Now because the propositions elected melupp this indication are certain and evident, not needing alive mut higher proof : from thence it is manifest that every u and conf derstanding that is master of it felf, not clouded with adipant vail of prejudice, nor wittingly enfnared with fceptication Sophilms and fallacies, must necessarily pay an affe the indica unto them fo foon as he understandeth the terms. Mot the know over, the Scepticks themfelves, though in their disputative weiter ons they will lie in wait to traverfe any variety, how me Indican nifest foever it be, and bufy themselves to equal the mine, tillit certain principles with things extreamly doubtful, Mor expe in performing the neceffaries of life, feeing that they und to the lieve hunger by food, hoard up money, avoid ftripes, are of the do these and the like things constantly and without a Moreover diftemper of mind, they plainly difcover that they are le Indica by some bad disposition of mind, or governed by a defire me befod glory, or tickled with a hope of victory in the conter ladicity tion, rather that they doubt really of the truth of furn their Propositions. In the interim, it must be observed, thinky in the very Indication is fallible and deceitful, where tileded absolute nature of the Indicant or the Indicatum he detted not been exactly understood before. For in this are n of the Indications, we do not prefuppofe only that a Phyfiting Dife fhould always have learned before, and duly known will. Yer all those things are, which we call according to Natured much as also in what the Essence of a Difease, and all the pa in, as a thereof confift, and to have an exact knowledge of t a in the causes of an Affect. Yea, it is necessary that he under midene stand all Medical actions, and upon occasion be able There ret render a ready account what alteration is, what here ing the ing, what cooling, &c. what evacuation, purgation, a Ration the section of a vein, &c. what confervation, and t se calles 1il

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For the Indicatian doth not make manifest the abchine neture either of the Indicant or the Indicatum ; prefuppofing this is already known, it reprefenteth ung y a mutual relation; namely, either a ftrict connexientry and conformity which they retain among themfelves, d mic a disparity and opposition, whereby they may be ford into an undoubted proposition : but the certainty antic the indicated proposition cannot exceed the certainty ". Me the knowledge of the Indicant. Therefore if at any cliput ne we feruple the certain knowledge of the Nature of Indicant, it is not lafe to truft to the Indication athe e, till it shall better be confirmed by some other Reaor experience. But this doubting must not be im-"the ied to the Nature of the Indication, but to the ignotupis ce of the Indicant.

thout Moreover, it must be confidered that the relation of heyater: Indicant in the Method of practice, doth demonaddulate besides the evidence somwhat of duty in respect of inter : Indicated action, and that the propositions formed that m the Indication do either explicitly, or at least imand, citly infinuate that duty. As in this Proposition : a whet fease doth Indicate the ablation of it felf, the ablation dereed and refolved upon, as a requisite action on the rt of the Indicant, that is a Discase : as if one should this a , a Disease requireth or importuneth the removal of it a Phr Yet this duty of the action is more frequently and TOWD I. ieed much more elegantly expressed by the Participle to Na dus, as a Discascis to be taken away : which Proposiil the n in the fulnels of its fignification hath a manifest 150 0 the . incidence with the former.

There remaineth full an objection to be answered conn best ming the action of the Indicant; and this it is, If the lication be the very action of the Indicant, how can be called an operation of the understanding? For all wri-

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### s, and in writers refer the Indication to Some generation of the under luked ftanding. dis. But

we answers The Indication is indeed an action of el the Ind Indicant, but yet an objective action, and that it is unefisan nited to the intellective faculty, and abideth in it as therein its fubject : Moreover, that the understanding is a powengen to both actuated, and as it were informed by its subject inte, a Wherefore although the action of Indication be objust if Elively attributed to the Indicant, yet subjectively it was me ascribed to the Soul, and especially to the intellecting of fur part thereof, which is as it were the act and form of in andb And from hence it will be most casie to reconcile Galinin the with himfelf, who fometimes defineth Indication to be at manner Emphasis, sometimes a Catalepsis.

Fourthly, It must be examined whether that diftinget embrat Ation of an Indicated action, into an action helpful ar teh the nurtful may tend. For fome may urge, that Galen doin thene perpetually affirm, that one Inaicatum only can be infine of the nuated from one Indicant ; and that in his Method. Me stiver th he doth affirm, That they vainly attempt the Method I In like cure, who are ignorant that one thing is Indicated from of taules, Iadicant, and that all who have written of this matter en may o feem to atteft the fame thing,

we answer, That Galen must be understood of th William Wi three diffinct kinds of Indicants, which must by n means be confounded, nor their Indicates, that is, th things indicated by them. For that which a Difease dot in very properly Indicate, must not be attributed to the cause ticica of or the Spirits : In like manner that which the caufes In A IS DOW dicate must not be applyed to the Spirits or the Diseafei felf. Finally, that which the Spirits Indicate must nei ther be ascribed to the Disease nor the causes. For in this respect one Indicate answereth to one Indicant, and h millide that observes not this; must unavoidably confound al thing

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is, and in the employments of art makes an unfuc-I use of this inftrument, according to the judgment ales. But it must be confidered, that in each of these , the Indicatum may be divided into two parts, one ion of f in is cof is an advantageous action, and to be profecuted; init a other is noxious and to be avoyded:yet each of them apone ngeth to one and the fame kind amongst the aforesubjecthree, and is as it were a middle part of the whole bed cate : For the Spirits direct to an election of fuch rely is gs as may cherifh and protect them, and to an avoitelletinge of fuch things as may in a further degree empair om a : and both these actions concur to advance and alde Ga ain the compleat and final confervation of them. In. aloke manner, both in cure and reftauration, and also in ion and prevention, there is found an action as well utdit e embraced, as abandoned ; yet whether of them exlofil t leth the bounds of its kind, fo that no confusion can funden thence be feared. For whilft we cure, we make not in se of those things that will demolish the Disease, and ind. Me leliver the application of fuch things as will augment Wind In like manner, when we preferve, we take away full caufes, and withall we fhun the use of those things mitte : may conspire either the continuation, or future iding of them. And for this Reafon in the definitiof of which we have presented above of an Indication, we It by cinguished the action indicated into that which ought atis, the profecuted, and that which ought to be waved : italed t ch very thing allo we were about to do, in the enude a ration of the particular Indications to this Disease. t is now time for us to proceed to the fecond enquiry callins . Dia pounded at the beginning, namely, Unto which omulti ation of the Intellective faculty the Indication begeth. We fay, first, That the Indication doth in fome For int mil: include the fimple apprehenfion of each term, both founds of

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of the Indicant and the Indicate. For he can never up the derstand a Proposition who is ignorant of the Terrad. thereof. Yet this knowledge is only preparatory and pitate is the supposed in the art of Indications, as we have alread Learn noted. We affirm fecondly, That composition and is he ma vilion is an explicit operation of the Intellective facultationet in the perception of an Indication. For the Indicant liftent force of his relation doth represent the Indicate to medenic aptly continued together into a relative proposition at Now that a Proposition thus conflituted may in its out been nature be fo manifest and evident, that no man can restime. fonably doubt of the truth thereof, or need any cleer en in proof, is exprelly taught by Galca---- narahn te, ench al vev Tugnorews in royous; and again in another plane Prop ---- aven Stodet Eeus x) maggingnozeus. Here fonskond calumniate Galen, as it he had deviled an art separate Under from all experience, and quarrelling with Reafon; brinch becaule Galen intended nothing elfe, than that propolization e tions framed by Indication are of felf credit, and neuchhead not any comprobation from Reason or Experience, the main Criticks may perceive their own rafhnels and retract theriou scandal. Sennertus indeed objecteth, that the Indicat Welay on cannot belong to the fecond operation of the min while because the Indicate is neither affirmed nor denied way the Indicant. But that learned man was herein miftakending is For although peradventure that the Indicate be neithe Indica affirmed nor denied of the Indicant directly , and by the total bare Verb Substansive or Copulative ( eft. ) Yet indianeh refly and obliquely it is manifeftly predicated of that on fame, and after the fame manner as it uleth to be in refur tof lative propositions. As for example, A sound state student the Indicant of its own confervation; a fickly conditionation on is the Indicant of lome remedy, &c. And if any ma med Su will express the Indicate with his relation to the India Bur Call

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tere by the participle in dus, then the Predication will " In irect. As a found State is to be preferved ; a difeaand tate is to be cured, a Disease must be removed, &c. with he Learned Sennertus can deny these to be Propositimund s, he may with the like facility deny that an Indicate faci belongeth to this Operation of the Understanding ; item if he must needs confess that, there is no room left att to the denial of this. Now we have faid that the Indimutition doth belong to the fecond Operation of the inise ud, because the Understanding, in reference to the ornann of time, doth withall comprehend the mutual relation mede veen the Indicant and the Indicate; and thereupon Ma, neth a Proposition, which formation and contexture the proposition is the very Indication; and explicitin fecond Operation of the Understanding. Now that than Understanding doth together at one time comprein; d the Indicant and the Indicate in the Indication, is t propt gantly expressed by Galen in a decompounded word min ch he useth in the definition thereof, oupmeoministt, in Karahumois : alfo in another definition, ouumegniretratter 1 Tò oungeegy.

elidice We fay Thirdly, That Indication may likewife imthemititly be referred to the third Operation of the underdetied wigng; Because in the order of Nature the Undermilitanding seemeth first to perceive the evident relation of : Indicant to the Indicate before it can conclude of he sett and by certainty of the Proposition from thence refulting. Ya in though in the order of time the Mind ( as hath been d) comprehendeth them together; neither is it neted of a fary to form an explicit Syllogifm, for the truth is, be int the ne Understanding can comprehend thole things toge-(on er at one time, which by the Institution of Nature are med Succeflive, as the Sun and Light, Fire and Heat, if any d c. But in regard that this fimultaneous comprehension a the la e F

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KT the

of an Indication doth include a certain dependance e Initra the knowledge of the Indicate from the perceived relation e, eryed of the Indicant, it supposeth allo that the faid relation Brics, fooner perceived at least in the order of Nature, and the Welay the Indicate is later understood and by an implicit brin ang the ing in ; for a kind of transition, in respect of the ore int and of Nature, doth feem to be here implied from the rela **林均和** on of the Indicant, as the Medius terminus, to the Pi 教的影 pofition conffituted of the Indicant and the Indicate Indicat to the conclusion; and this may be called an impli ut Indica realoning.

We fay Fourthly, That by circumlocution and circuit it an exte stances of speech, an Indication may be reduced to an e tuy of a plicit reasoning or syllogism, or rather, that the same thi d dilput which we pursue and argue at by Indication is to be fou d the In out and proved by way of Syllogism. For the Reason on theres the evidence of an Indicated Proposition may explicit ident it be applied, as the Medius terminus, to infer that prop anding # fition. In the Interim a Syllogifm fo pieced togeth will be either absolutely frivolous and childish, or at the althout diments o best only explicatory. As if any one who would pro that a Difease were to be removed, should thus proceed a perfut With it That which is contrary to Nature is to be removed ; Weath Discase is contrary to Nature, therefore a Discase is to atter in removed. The Midius terminus ( that is against N Will the ture) is not the reason of the Relation of a Discase to the Ablation thereof, but is only an Exposition of the g · 444.4.7 without w neral Nature of a Difeale. For wholoever understan Billit ad deth what a dilease is, doth at the same instant present amont, conceive fomething not natural. And therefore luch fyllogism is only expository. Yet we do not suppose it with an be always unprohtable, because it may fometimes be se Malte viceable to the conviction of a flubborn, or the information Hither allo we ma superie mation of an ignorant Diffemper. rete

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efer the tranflation of an Indication from the Action to he Instruments by vertue of general Rules : Likes are referved by their likes, Contraries cured by their conaries.

We fay Fifthly, That a Collation of the Indications nong themselves, whereby we may guide our choice by the insent and diffent of the Indicants to what simply and abthe rela lutely ought to be done, doth necessarily involve the third o the P peration of the understanding. For the limitation of ndicate y Indication supposeth a middle term extraneous to nimpli lat Indication, which being first understood, the limition is inferred as a conclusion. For he that findeth el circa it an external for a middle term (thereby to affert the duan rity of any proposition) doubtless he manifestly argues in the id disputes. Seeing therefore that besides the Indicant to be for nd the Indicate a third term, and the affirmation or nega-Resion on thereof is required to the limitation of an Indication, ident it is, that the third Operation of the Underhat prop anding is requisite to the Invention thereof. Thered togeth e although fimple Indications may fubminister the first i, or ar ti diments of Method to Practice, yet to the complement ould pro d perfection of disputing, the Art must likewife be joys proceed moved ; d with it.

We affirm Sixthly, That the election of the Physical atter in particular, and the apt and prudent adminiation thereof doth not onely imploy every Operation of understanding, but that it also requireth experience without this, who can infficiently understand to adnifter a dole of Scammo y, or of any other purging Meament, or know what humors fuch and fuch a Plant sweth away by a peculiar propriety ? Again, in Meines alterant there may perhaps lurk fome hidden quay, which may be hartful to the Patient, and this witht experience cannot be discerned. We conclude therefer¢

fore (the proper force and use of Indications being conditions tinued) that to a complear method of Medicine all this Error dictates of Reason, and the contributions of Experiencettic an are pre-required.

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We now proceed to the Third Title propounded themever first, namely, Into what kinds and differences Indication they tion is distributed. Some differences may eafily be obtail Con ferved by what hath already been spoken, which thereform the we shall here omit. Now here we diftinguish Indications b on into general, succeeding and specifical. The generalities is derived from the general Indicant, the fucceding from this for the intermediate kinds of Indicants, and the specificant ind from the loweft Species of them. We have already new Control zed, that the general Indicant is the very flate of the Beathis And dy confidered in general, as it is frail and in motion metricy this ftate indicateth that health must be intended, which Parts is the most general physical action, and the most generated ral Indicate; yet this action is in some fort concret ked they and equally includeth two general actions in the alection ftract, namely, Confervation and Correction. For the g moldin neral state aforefaid is alfo concrete, and comprehenden Enois two like Confiderations in the abstract, namely, one whenas the parts yet qualified according to the prefcript of N miled in sure, which require a pure Confervation : The fecor Noma of the parts fomewhat degenerated from their integriture, and Theis Book which in like manner require a pure correction, two actions are perpetually conjoyned in every work me toal Art. For he that conferveth, withall correcteth, that ilate doth he rectifieth fome irregularities ; and he which correction, and eth, hath at the fame time confervation for the obje sinde of of his Undertakings. The complication of these actud, mi ons is fo fubtile, that it feemeth to have pofed that monition, acate Phylitian Argenterius, who in this Book Off. Me mation a affirmeth Confervation to be that very Correction althate white

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thich is exercifed in the art of maintaining health. But alle is Error is twofold. First, because he supposeth Cortien estimand Confervation in vyiern to be one and the ime action, when indeed they are two diftinct actions, little lowever they are complicated in the Exercises of Art. not or they are indicated (as we faid before) from the fete deral Confiderations of the Indicant, and Confervation ath respect to those things which are according to Naadata ure ; but Correction reflecteth upon preter-natural gener ultinels. Moreover, They are perfected by inftrumain sents formally diftinct, yea opposite : For Correction retifice ven in the very art of defending health, is accomplishe adymy Contraries, but Confervation by Homogeneals; as the Buthis Art we help Emptinels by taking Nourishment, mut ontrary indeed to the Emptinels, but homogeneal to inter a Parts which are to be nourifhed : Therefore although alganiese Actions be complicated in the Execution, yet inment ed they are formally diffinct, and ought diffinctly to that : entertain'd by the Understanding. The Second Ertheg or of Argenterius is, because he granteth the correction inner Errors only to be the General Action of all Medicine, one hen as Confervation is equally universal, and alike exnot Nercifed in all the works of Art.

No man doubteth but we conferve in the Hygienal megniurt, and that we correct. Alfo Galen demonstrates in The s Book, whether the matters of preferving health bemethods of a Physician. You will fay, That Galen in that ace doth prove every Medicinal Action to be correhered ion, and that confervation is comprehended under the heads titude of correction. But Galen must not be fo undermethods titude of correction. But Galen must not be fo underhered iod, as if he intended correction to be a kind of conhered in the intended correction to be a kind of conhered in the intended correction to be a kind of conhered is alth are actions formally different and differently dithe V 2 ftinguished: stainguished : for Galen's meaning is, that every Medical action when it is actually administred, doth imply though and comprehend correction, and in that respect may beaunger called Correction, and fo by confequence CorrectionsIndicate will be the general Action of all Medicine ; yet Gales North confesseth Confervation to be equally general. For what although hinders but there may be two general abstracted Actions min) is in Phyfick? That doth not deftroy, if any man have more Nob fuch conceptions, the unity of the Art, it rather indeedathough i confirms it. For the unity of an Art confifteth in fometaled (m community, which may be attributed to all the parts in mini thereof ; and this union is to be effected fo much the ad truly. more firm, as all the parts of art reciprocally conjoy-bladed ned among themselves by more communities. If there-the Cure fore there are two general Actions, and those common the contern to all the parts of Medicine, fo much the more firmly strating will those parts confpire the advancement of the Art. mous gran Wherefore he contradicts not Galen, that affirms con-Medicine, fervation also to be a general Action of all Medicine that before feeing that the fcope of Galen was only to fhew the uni-field, that ty of the Medical art by the community of that general market Action, namely Correction; now he might as eafily at these have shewed it, if the nature of the thing had required a from it by the community of Confervation. For in the Hy-Intefore gienal part of the most noble circumstance is the Con-Regarding fervation of the whole concrete action, and thereupon the toperly d whole action is denominated from the more principal michate part, and the Art it felf an Art confervative. Although the work otherwise (as hath been faid) it also includes Correcti-reomplic on. But in the Prophylactical part the principal fcope Motton of the Medical Action is prefervation, namely, the cor- the bo rection of the caufe of the imminent Difeafe : yet this this the is fo performed, and by fuch means which the prefent popled spirits can allow, but in no wife by fuch things as may bis equ deftroy at, a

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eftroy them. And therefore allo in the Prophylactical part regard is had to the Spirits, and their confervation metin ; Indicated.

Now after the fame manner the whole concrete Action arth although as hath been faid, it also includeth Confer-Aftic ation) is called Prefervation and Precaution from the in his nore Noble part. Finally, In the Therapeutical parts index Ithough in like manner the whole concrete action be infom alled Curation, and the art it felf a Curative Science from at an he principal part of the action, yet to speak properly which nd truly, all this action of cure may be divided into three unjoy bitracted parts, and evidently diftinct; namely, into then he Cure of the cause, the Cure of the Difease, and ne confervation of the Spirits. For the Vital or Coniommo: efmi ervative Indication doth evidently, and by the unanithe An nous grant of all Physitians belong also to this part of mi con Medicine, and must be confulted of in every curative stion before it be undertaken. From whence it is maedicine the un ifeft, that this part likewife of Medicine doth perpetually genen onserve, that is, provide and foresee in every Cure, is aft the Spirits flould receive more detriment than prorequire t from the prescribed remedies. All these things thely rerefore being thorowly weighed, we conclude, That a roperly diffinguished into two general abstracted actions which are exercised in every part of Medicine, and that the work of art they perpetually make r complicated action. Corrett

Moreover, The general Indicant, namely, the State E the body, as frail and in motion may be divided, efides the parts or abstracted confiderations already ropoled into three kinds, or rather three fucceeding inds equally and alike concrete : namely, into a found late, a difeafed state and neutrality. These three Species

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Species are the fubjects of the three kinds of Method to ECut to Practice; namely, the found flate of the Hygienal part, ded with the difeated flate of the Therapeutical, and the Neut; at dictions of the Prophylactical part. These three flates are also concrete Indicants, and respectively Indicate what is particularly to be done, or what the Physitians Duty is in all those Arts: namely, a found flate indicateth the confervation of health; a difeased flate the removal of fome affect, and the Neutral flate that the cause of an imminent malady ought to be corrected, least it break out into a Difease. Now these three Indicates are alike concrete, and each of them as we have proved aboves abstractively includeth both Confervation and Corretion.

Finally, In a difeafed state the action of correcting is diffolved into two Species; into the correction of the par the Caufe, and the correction of the Dileale, and to here cader ma may be discovered three kinds of abstracted actions, For a difeased state brancheth it self into three Species finit, 1 evidently abstracted into the Effence of a Diseale, the caufes of a Dileafe, and the Spirits or thole things which actore in remain in this flate according to Nature. For those Conly th things which are preter-natural and indicate correction any wild in general, are here separated (as hath been faid) into It diftern two parts, nimely, into the Effence of a Disease, and be impli the Causes of a Disease; and therefore there are three and dry parts of this stare, each of which do formally and di-Second ftinctly Indicate. Three kinds therefore (that we may int of in put an end to this matter) of Indications are to be gs aret confidered in this flate; namely, from the Effence of Contun the Dileale, the Curative ; from the Caufes the Prefera which vative, and from the Spirits the Vital or Confervative, them. To the Caules we refer all impediments of cure, as allo acaleto vehement Symptoms, and fuch as divert the Progrefs of ant; in the

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hold the Cure to themselves, for in this respect they are inignt fied with the Nature of Causes. And thu much of Nature idications in general.

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#### CHAP. XXV.

#### Indications Curative.

W E have already affirmed, that these Indications are deduced from the Effence of the Disease, we shall therefore in this place flightly run over the parts of the Effence of this Disease, that the eader may perceive what every one infinuates to be one.

First, Therefore the Effence of this Disease partly nfifteth in a cold and moist diffemper, this Disease erefore in respect of this part of its Effence Indicateth, or only that all those things are to be avoided, which are any wise endued with a faculty to cheristh and augment at diffemper; but also that the aid of such things ought be implored, which may subdue the same; namely, ot and dry.

Secondly, This Discase partly also confistent in the ant of inherent Spirits, therefore not only all those ings are to be avoided; which can any further scatter and confume the Spirits; but such things must be eleed which are vertuous to reftore, cherisch and multiy them. Strong discussing remedies are therefore in as case to be declined, because withall they confume the pirits: in like manner such as are extreamly hot, for V 4 they caule them to evaporate and vanish into air; but felted p much more such as have power to diffolve the parts, as have so violent Catharticks. But the best nourishment must felted, a be chosen, and Medicines that are easie of Concoction, ddimin as much as may be, and amicable and benign to the Spi- dtd part rits.

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Thirdly, The Effence of this Difease confifteth part-addipter ly in a numbrels or aftonishment of the Spirits: this 4 parts, numbrels infinuates a prohibition and abstinence from muchod all such things as vehemently make thick, and fix the stal Con Spirits, or any other wayes stupishe them as narcotical re-origonou medies, and many Minerals, which participate of the na- nd spiri ture of Lead, as Cerus, Litharge, Sinople or Vermilion; about m and all such things as have power to excite the Spirits, to and to a expel their stupistaction, and to render them active and spire agile, are to be made choice of, as exercises, motions, states the Frictions.

Fourthly, The Tone being over foft, loofe, flavid and and withered, indicateth an avoidance of fuch things as a are wont to mollifie, loofen and weaken the parts; and Siddly, that fuch Medicines are to be outwardly applied and us white inwardly given, as may render them more firm and for a office lid. The fame Tone as it is internally too brittle, brings toollide a fufpicion upon all fuch things as abound much with an unterface inward flipperinefs, and feemeth to defire fome rough-ther Non nefs, or indeed aftriction in those things applied or ud, chie taken.

Fifthly, The corrupted Vital Conftitution on the sthefa part of the Generation of the Vital Spirits is not fo confiderable; but on the part of the diffribution of the Vital Spirits, the inequality thereof is of great importance, and indicateth a caution to be had of those things which promote the flux of the blood towards the Head, as alfo of fuch things as retard the paffage thereof to the first, affected

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in fected parts, but that choice must be made of fuch is a sings as ftir the Pulle of the Arteries in the parts first me fected, and temper those that are in the Head. A flow thin ud-diminute current of the blood through the first affted parts indicateth the fame things, namely, an evotion of the Pulle to those parts. But an over facile d flippery paflage of the blood through the habit of e parts, is co-incident in its indication with the fliprinels of the Tone lately recited. A defect of the it ital Constitution on the part of the union fufficientvigorous and pleafant between the Vital and the Nathem ral Spirits, indicateth an election of fuch things as n both nourish and cherish the Spirits, and also excite em to a greater activity, and that their contraries ight to be avoided. The Vital heat, as deficient incates almost the fame thing as a cold diftemper, pro-ICTION. led that regard be had withall to the ftrength of the fan sart and Arteries, and to the vigor of the Vital Spi-S.

Sixthly, The unequal Nutrition Indicateth those ings which promove the even and impartial diffribuon of the Aliment and Heat. Or indeed that which too liberal to the parts that are nourified beyond a e measure ; the extenuation of the parts requireth a iler Nourishment. The irregular magnitude of the ad, chiefly things extenuant, and fuch as are of the x from the Head. The Tumors of the bones indite the fame thing ; the crookedness of the bones reire fuch things as attract the Aliment to the hollow e, as moderate rubbings; but things repressing iefly on the gibbous and bunched fide, as ftrong binngs. The bending of the Joynes, infinuateth an Aricial crection of them, as much as is possible. The trownels of the breft pointed Pectorals, and fuch things

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things as have a faculty to dilate the Breft; but the motion tharpnels thereof indicateth fuch things as have a dilative Vertue.

Seventhly, The imperfect diffribution of Animal Spice inder rits, and fomewhat defective in the first affected part indicateth Cephalicals, and fuch things as facilitate the diffriction pubution, as exercises, rubbings, and the like. A defect of is or the due ftretching in the Nerves, or Nervous and Fibrou to the Paparts, indicateth those things as Corroborate the Nerves ation, and ftrengthen the parts. Thus much of Indication in cash Curative, the Prefervative follow.

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# CHAP. XXVI.

#### Indications preservative.

Hele Indications are deduced either from the An-twilt we tecedent, or the prefent caules of a Difeafe. Those d and le which flow from the former kind of caules conthe Prophylactical Part: here we only propound those which proceed from causes that are prefent and contained in the Body; namely, from common causes, or winthe fuch as are proper to this Difease.

Now although that common caules do not feem immediately to attain to the production of the Effence of a monally Difease; yet even in this respect that they are effected by for an impediment, and may retard the cure, they Indicate atione their taking away.

These causes are either impurities, or excrementitious nomin humors

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ences eftens Indis mors collected and impacted in the first passages, nich unless they be taken away, do not only infect the urishment inward, but they somewhat dull, or otherse hinder the appropriate Medicines. They indicate the refore an evacuation either by a gentle vomit, or by a nitive purgation, as occasion shall rather perswade to is or that : or they are common causes deeper imbibed to the Parts of the Body, and these also require an evaation. But seeing that according to this kind of comon causes it is at the same time driven away, and aloft with the same Medicaments, as are causes which proper to this Disease, we shall conjoyn both the kinds them in this present confideration.

The caufes therefore which are proper to this Difeafe, alfo the Common caufes which have a deeper penetion into the Body, may be divided into Blood and cochymical humors. The Blood indeed, although it rather deficient than redundant in the first Affected rts, yet in the Head for the most part it requires a parular evacuation, which ufually is performed by fearriation of the Veins in the hollow of the Ear. Hither ewife we may partly refer blifters raifed between the t and fecond turning Joynt of the Neck, although efe perhaps may relate over and above in part to the cochymical humors.

Carochymical humors are divided into those which ftill w in the chanel of the Veins, and into those which impacted in certain parts of the Body. The causes humors flowing in the Veins do (primarily and intionally) Indicate their evacuation. But if they be apt for motion (as to the execution) then they reire some previous preparation. But because it happens the most part, that not all the humors are equally un-, but that some are sufficiently flexible, and others not so, for but resist the Medicines, in this case they indicate n, and less evacuation and then a preparation.

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Moreover, These humors in the chanel of the Veippurgat may be fubdivided into Feaverish (namely, if there binivol th putrid Feaver) and not Feaverish. The Feaverish h Thehun mors are either fwelling, or not fwelling. The fwelling, dom that is, those which are unquiet, or impetuoufly agit mented; ted, do Indicate a sudden evacuation, at least a lesser, und same less perphaps they are carried of their accord to the en doth a ternal and more ignoble parts, as it happens in the fmine huma Pox, the Meazels, and the like Affects. But if a Feavily a per be present, and that acute, and yet the humors are numeron, and fwelling, they chiefly Indicate that peculiar preparative kind of which they call coction, that by this means they may Finally, obedient to the Medicine to be after given, and than ev malter cuation, but if the Feaver be not acute, but Chronicain; they although the matter be not irritated, and yet fome paydilpol of it be fufficiently flexible ; in this cafe, a leffer evacine: And ation is first indicated at any time of the Difease, and aminthin terwards the coction of the relicts, that they also in the time may be evacuated.

The humors contained in the Veins which are no Feaverifh, if they are fluxible, they first indicate evacuation: but because in this Affect flow, gross and clarr my humors are almost perpetually present, preparatio (at least where a lesser evacuation hath gone before) first Indicated; and indeed the viscous humors Indica incident, and the thick attenuant remedies. Again, whe the Disease is very Chronical, and extended to man moneths; yea, perhaps to a year and upwards, it is not the be supposed that the whole matter causing the Disease ca at once be prepared or evacuated; wherefore in this re spect it Indicated, that we infiss upon things preparatory and evacuant by turns. Besides we must know, that Choleric

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olerick humors require one preparation and evacuan, and Melancholy humors another, flegm another, I watry humors another. And that the preparation I purgation is Indicated varioufly according to the difity of the humors commixed with the blood.

The humors that are impacted in certain parts of the y, do much more require preparation before they are cuared; according to that of Hypocrates, Wh.n. you lefter, uld purge a Body, you must first make it fluxible. Neiother r doth a certain general purgation suffice to subdus title fe humors, but fuch a preparation is required, that h a peculiar reference to that part in which they are nant erent, and therefore the humors in the Liver require with kind of preparation, those in the Lungs another, &c. my Finally, Seeing that the propounded kinds of all huthan or is after they are evacuated, may grow and breed ahronig n ; they Indicate an avoiding of fuch things which w y dispose the body to an easie generation of fuch huattur rs : And thus much of Indications Prefervative, it t, and maineth now that we confider the Vital and Confervaointh

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#### CHAP. XXVII.

#### Indications Conservative or Vital.

His Indication arifeth from those things which are as Thefeln cording to Nature. For Life in it felf confifteth inted, they these things; namely, in a triple Constitution of the Body tion by it at when the the Natural, Vital and Animal above rehearfed. inent hurt

The Natural comprehendeth under it. Firft, The Temperament. Secondly, The Inherent Spirits with their plenty and fome on vigor.

Thirdly, The Tone of the Parts. Fourthly, The Structure of the Organs. Fifthly, The Continuity.

The Vital containeth

Secondly, The Distribution for f the Vital Spirits. alle ha Thirdly, Their participation with those parts unto which Butbecan they are aiftributed; namely, from the union of them with ronly, an at they can the faid parts, and the communicated heat.

The Animal comprehendeth First, The Generation Sof the Animal Spirits. Secondly, The distribution Sof the Animal Spirits.

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Thirdly, The due Stretching of the Parts depending upthe Influx of the Brain.

All these things because life consistent in them, are lled Vital Indications. But among Authors for the off part they are known by the common name of the irits, but this name is fomewhat too grofs, feeing that propriety of speech, the Spirits are radicated in the d Conftitutions, and are faculties of them. Yet we ve no defign to innovate the cuftom of speech, provided it the things may be understood as it is.

In These Indicants fo long as they continue firm and find find, they require only a general and ordinary conferion by the right use of the fix non-Natural things ; the Bal t when they are all alike vitiated or obnoxious to imnent hurt, they require not only a general confervatibut fuch an one likewife as is mixt with cure and fervation. Again, Where some one Conflicution, fome one part thereof is depraved more than the reft, ubject to fuch depravation, befides the general prevation, it requireth in like manner an especial one be affociated to the peculiar Curation. Laftly, hen a Constitution Subject to error, or actually oneous is fixed to fome certain part, it doth highspecify that confervation; namely, that respect may alfo had of the part fo labouring more than the

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But because some fay, That the Vital Indication is only, and that Confervation is the fimple end, and t they cannot be further subdivided, because that all ngs which are according to Nature are comprehendin the word Spirits, and that they Indicate one Acti-; namely, the prefervation of themfelves. We grant eed that the Spirits, if (as we have already noted) y be improperly taken for their causes; namely, the chree

three Conftitutions aforefaid, may in one word com with prehend all things which are according to Nature, bu heling then this word must be Generical, and divisible interent dive three fpecies ; namely, the three. Conftitutions, as Spirit more fpec Natural, Vital and Animal. We grant alfo, that the minto its end, or that the Indicated action is one ; namely, Con Moreco fervation, but by the unity of the Genus, not of the ultime diffe mate fpecies. For those very things which are accordin fortwhat to Nature, however they agree in the Genus, yet in thets, but fpecies they may differ among themfelves, and require both Cur different confervation ; yea, it is poffible that those thing or diallow which conferve the Spirits on one part may impug is Spirit them on the other ; as for Example, Wine given may i uns ; int one respect cherish and ftrengthen the Vital Spirits, or ra contraries ther the Vital Constitution, but in the interim it ma' intend th offend and debilitate the Animal Spirits, or the Anima The e Conftitution. In like manner, the Temperament re dition to quireth one prefervation, the Structure of the Organ ence to ty another, and the Continuity another. Yea, the ver they affin different Constitution of the parts Indicates a variou confervation, neither do we after one and the fame man aft at th ner, or by the same actions provide for the special cont DEt QUAIN fervation of the Liver, Lungs, Brain, &c. Wherefor present when fome one Constitution is more infirm then ano to N3 ther, or when fome one part is weaker than another, i Indicates a proper confervation peculiar and special t You will it felf, and therefore both Confervation and Confervant to the k may be divided into their Species. For the Confervation We amou and the Confervants appropriated to the Animal con red to eac Ritution, differ from those which are destinated to the es like up Vital or Natural : And from hence the three first kind await the of Confervation are to be deducted, namely, the Confertrid tot vation of the Animal, the Vital and the Natural Conome deg Aitution. In like manner, the Confervation of the Li VE hand co

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er is accomplished by the use of the Hepaticals, and of he Lungs by Pectorals, O.c. Yea, all parts of an emisent diversity do subdivide the confervation into fo many nore species. Thus much of the division of Conservation into its species.

Moreover, The fame Confervation feemeth to be furher divisible unto its parts. For this Confervation is omewhat complicated, and doth not only relate to fimles, but in some fort to contraries, to wit, Indicates tequite oth Curative and Preservative, and either permitteth itthe r difalloweth those same things being estimated with ie Spiri's. It seemeth therefore to be branched into three arts : into an election of like matters; into an election of ontraries under a certain condition; and into a prohiition of the fame under a diverse condition.

The election of like things is the most appropriated Etion to Confervation, and feems withall to have refeince to two kinds of things alike; namely, fuch as are fily affimilated, and are properly nourifhments, and ch which although they cannot be affimilated in reect of their substance, yet they contain within the me qualities like unto the constitution of certain parts, respect whereof they are reputed amicable and familito Nature, and do cherifh and ftrengthen certain

You will fay, Those are indeed Alterants, and do beig to the kina of contraries.

we answer. That in a diverse respect they may be rea rred to each kind, but in as much as they obtain quaies like unto the due Nature of the parts, although of erwise they alter some small matter, yet they are to be erred to the fimilaries. For the very nourifhments do fome degreealter, and are directly contrary to emptiis, and confervation it felf doth implicitely include a х scrtain

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certain correction, as we have fhewed above. Now these indeed in regard of a middle nature, which they have between fimilaries and Alterants, are not called Medicaments, but Strengthners, Confervants and Cordials; Again, these are Indicated as Confervants by the peculiar debility of the Spirits; and as to be elected, and not only permitted, and so they are effected in the Books of Bractical Authors.

The Permission of a remedy somewhat contrary to edabore, Nature, doth likewife belong to this Ind cation. For sularreg fuch is the dignity and value of this Indication, as it fum-in the E mons both the Curative and Prefervative Indicates to an unitid examination before they are reduced into practice, and Fifth, doth not only moderate and limit the quality and quan- with be tity of the remedy, but also the very time of repeating and as net it, yea, what foever appertaineth to the ufe thereof, or the fire Pa manner of using it, and all this leaft in any wife it should miss m exceed the Spirits of the Patientsor be injurious to them? in little nor is the excellency of it thus circumferibed, but it re-the cuffor quireth more ; namely, that more profit and advantage Second may accrue to the things, according to Nature by im- ad thethe purgation of the Difeafe, then hurt or detriment by any natarem violence offered to Nature. And under this Law and deret Condition. Vital Indication permitteth many things to Midic be done, which of themselves are contrary to the Spirits polis fco yet alwayes in favour of health, never to the prejudice of hided Life. Ing

A prohibition of a contrary is altogether a commanding Action of this Indication, and by a kind of Authority dictates this or that thing not to be done, (although it were otherwife Indicated) becaufe perhaps it endangers life it felf, or brings more difadvantage than benefit of health to the parts. And this is the third and laft force and use of this Indication. We shall

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now in one word apply these things to the profene Difeafe.

All Confficutions in this Affect- are very weak and inarm ; and this is manifest from the bare confideration of tuin this tender age. But the Natural doth yet further fuffer only by the force of the first Effence of the Difease ; and from out sence alfo the Vital is fomewhat weakned; and indeed. ieither doth the Animal escape wholly free, as was thew-"It is above. Wherefore both a general and also a partihe ular regard must be had to these Constitutions, as well in the Election of Similaries, as in the permission or proston ibition of contraries.

First, Therefore in this Affest you must make choice it, 10 quin f the best nourithments, such as are eafily of concollion, mit nd as near as you can agreeable to the cuftome and age with E the Patient, to the time of the year, &c. the conthous aries must be abandoned, namely, fuch things as nouthe In little, are difficult of digestion, and incongruous to nin ie cuftome, age and feafon.

Secondly, Thefethings must be chosen which cherift rinti by in ad ftrengthen the weaker Constitutions; and the varis by a lat are most Affected, and these must be either exhibiand d severally, or they must be mingled with nourifimen s Medicines; but fuch things as are neither ferviceable 1005 spin this fcope, nor otherwife Indicated, must be totally ndicel oided.

Thirdly, Benign and gentle evacuants; of otherwil's fficiently corrected, must be all allowed in a moderate antity, just and due interval of time being observed, it the contrary things; namely, violent and ficres irgers, especially such as are apt to diffolve the paris, are exhibited in an undue quantity, or too often reited, are forbidden.

Fourthly

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Fourthly, Remedies alterant, or fuch as prepare the meinter humors, or correct the Difeafe, muft be permitted; fuch when he alfo as are friendly and familiar to Nature; or fuch as efficient may be made fuch by good company, that is, by comamagen pofition or fufficient correction. Remedies violently althrough terant, extream hot, and vehemently diffutient, or meaning any other which in any wife refolve and diffipate the matheis parts.

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#### CHAP. XXVIII.

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#### The use and right administrations of the Indications aforesaid.

Having propounded the three kinds of fimple Indications, and deduced them into their loweft Species; we fhall in the next place confider the wight use and administration of them. The exact know lege whereof seems impossible to be obtained without the Eff rode and experience. For it descendeth unto Individuals, sy various and comprehends not only the Election of a thing among set mone fo many Indicates simply to be done in the Species, but an they mallo the invention of quantity, place, form, time, order and more matter of the remedy to be exhibited.

The Confent and Diffent of Indications do contribute mbnels i much to this invention. Now the Confent may be twofold : of Co-indication and Permiffion. Permiffion may be either an Advantage or a Lofs to him that permitters

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the incither of them. A Permifion that cannot be granted ithout hurt, must never be allowed without the greada ft circumspection, and so much the greater, as the um image may be the more to him that permitteth. For ya though the Permittent may part with fomewhat of his ivate right to advance the publick good, yet in refpect 1 1 at he is a member of the whole, he is fuppofed to be a iner.

The Diffent of Indicants is twofold; namely, either ntradictory or Contrary. The Contradictory among the ooks is called Interdiction or Probibition, and for the most irt it is appropriated to the Spirits, unto which in this spect we must alwayes yield obedience. The contrary called Contra-indication, and this doth not fimply ford, but fo far forth as it undergoeth the Nature of an apediment, or lonie more urgent Indicate. 19136118 8216

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Ind First, ubere Indicants confent ether by Co-indication Permission, Satisfaction if it be feasible, must be given all the Indicates : But if this cannot be performed, M dies of that Nature are to be preferred before the reft, which ecorrespondent to most, or at least to the most urgent. Scopes. t if such finples cannot be found out, then you must infite an apt composition of diverse simples one with ano-Lange here to to the

The Effential parts of this Difcafe, although they are ry various, yet is there not any confiderable difagreeent among them, and nothing hindreth but in a great rt they may be confidered together. For Medicines mperately hot and dry, may at once cherilh the Inhent Spirits, and perhaps conduce to the feattring of the mbnefs in them, and withal fomewhat fortify the Tone the parts, and facilitate the equal distribution of the lood, and confequently the equality of the Nutrition : to it may increase vigor in the Vital and Animal Spi-Xa 11:5

rics, propriate the Arteries in the first offeeled partso and now mon firengthen the Nerves : unto which Heads almost all the fure, an Indicates of the Effence of a Difeale may not unaptly be thement referred. Moreover, the Spirits allo, although they pro- wathey hibit all extream hot things, yet they allow of there as thinks. moderate, and very congruous to Nature. In like man- med Ren ner there is little or no particular repugnance between ints Alte thele caules and the Indicates, albeit in respect of time Second and the order of administration, fome diffent may be ob- mutation terved, as we shall see afterwards in due place. Darrive a

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Wherefore in what respect, and how far these agree me Dile together whilft we intend a cure, we do at once respect Villes, not only the Spirits, but in lome fort the caufes, by choo- lufice to ting luch curative remedies, or by mingling fuch ingredi- to by the ents with them, which are able both to attenuate the to move thick matter, to cut into the viscous, to open the ob- tracente ftracted paffages, and the like. In like manner, whilft we morthe are chiefly imployed either in prefervation, or in the root- pitting, ing out of causes, we make choice of fuch evacuants, shows me or elfe we compound them with fuch remedies, as are the parts alfo partly contrary to the Difeafe. And all these things the more we do to that purpofe, as that (as hath been faid) we may the mor be subservient to the most intentions we can, mal and

Now having found out the actions fimply requisite in the Species, in the next place we shall enquire out their ctrtain S due curcumitances.

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1. In regard that this is a great Difeafe, it requireth a great quantity of the Remedy in respect of it felf. For a Remedy unocual to the Difeate cannot extirpate it. It is necellary therefore, that the dole of the Med cine be equal to magnitude of the Affort. But in this Difeale the Spirits permit not la great a quantity of Remedies to be given stance. Wherefore that quantity mult be divided and given by turns. To bulk is a Chronical Dikale, and of

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in low motion, neither doth it neceffarily require an hafty ure, and although the Spirits cannot well endure either high chement Remedies, or fuch as are given in a large dole, et they permit the use of Evacuant Medicines by an nets picrafts. Wherefore by turns, we must sometimes make mas fe of Remedies Preparatory, fometimes Evacuant, fomemes Alterant, and fometimes ftrengthning.

Secondly, For fo much as belongeth to the place of aitimt bed inistration, the general Rule is, that the remedy ought parrive at the feat, and penetrate to the very Caufe of agent he Disease. If therefore it must have a passage into the moth Teffels, it must be taken at the Mouth ; but if it will dro affice to touch only the thick Guts, it must be injectd by the Fundament. If the humors be naturally ready nein o move upwards, expel them by vomit; if downwards, he vacuate them by fiege. In like manner you must huhad nor the inclination of Nature, and root out the caufes by terest pitting, by Urine, or by Sweating. Particular evacumass tions must be instituted in the very affected parts, or in as in he parts adjacent. For fo the force of the Remedy doth thing he more furely make way to the fear of the Dilease and tray he morbifical Cause. And for the fame reason exteral and topical Medicines must be applied to the next. hea convenient place. Yet you must know, that there is a what sertain Sympathy between some parts, in which case the emedies are frequently administred to the part, wherewith that confent intercedeth, and neither to the affected nor the adjacent part. rant

Thirdly, The form of the Medicament doth partly depend upon the Rule last propounded. For if the scope hest of to lenific the Jaws or the Windpipe, we chuse a licgint sing or lapping form, that by degrees the remedy may flide over the affected parts, and ftay the longer upon the r. In like manners if the Stomach be affected, we often XA

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often preferibe Pils, Powders or Electuaries, that they Renktik may the longer abide in the Stomach. To the Kidneys we rather defign liquid things, that they may the more eafily be carried down to them with the wheyish part of the Blood. The forms do also in some part depend upon the very nature of the Diseale, as in burning Feavers, liquid things are for the most part convenient, dry things are scarce admitted ; on the other fide, in moift Discafes, and when the Belly is over-foluble, more folid forms are preferred. Finally, the forms of the Medicines do allo ght to b partly depend upon the nature of the Ingredients. So mach, a Caffia worketh most effectually in the form of a Bolas tat, or c Hartshorn, Coral, and the like in the form of a Powder ; in like manner bitter things, such as beget a vomiting, and flipking things are concealed in the form of Pils; fometimes also they are guilded, or else they are enwrapd thereig ped in Wafer, and exhibited in the form of a Bolu ... confide

Now it must here be noted, that for the most part the form of the Remedy is not fo confiderable, as it gives place to the more easie and commodious administrations in respect of the Admission or Reception of the Sick. For many cannot swallow Pills, others presently reject their Potions by vomit, and others are perhaps averle from other forms. In this Affect, in regard that all Children almost are loth to take Physick, that form is to be preferred before the reft, which shall be observed to be least distastful to them.

Fourthly, As for the time of Action, you must fo en. deavor to fit your administrations, that they may as little as poll ble be interrupted with times of eating, exercife or flee, for at this age the Spirits are fcarce preferved found and perfect, without an interpolition of those things by just intervals. matter PR emedies

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the Remedies evacuant, opening, attenuate and incidente any It be taken early in the morning upon an empty ftoman ch; and if they must be repeated the same day, four it de the Clock in the afternoon (upon an empty ftomach upal swife) is the most seafonable hour. Strengthning and s, he ingent Medicines, and fuch as provoke fleep, are to hingt taken rather in the evening than in the morning ; but ak, haps fome of these are most agreeable after meals. man Medicines that are mingled with the nourifhment, alle ght to be grateful to the Palate, left they fubyert the Sol mach, and hinder concoction, or caule a loathing of the why at, or elic empair the Spirits.

da As for the order of proceeding, there occur two general ing, les. The former is, That that muft first be done, which Pik: ng premised, makes way for the following Remedies, min. I therefore that ought first to be removed which hath confideration of an impediment in respect of what It follow. The later is, That we must ever give our thelp to the more urgent and weighty Indicant, unless int the gies ne impediment intervene.

f the Question therefore be, Whether the Disease, or the ations Ful fe of the D fease doth first require the help of Phylick? e answer will be obvious according to the first Rule : their the caufes are reflected upon under the notion of an from pediment in respect of the Cure of the Disease; for F dren . y cherifh it, and infringe the vertue of the Medicines, e preterefore, before that we are intent upon the vanquia leaft ng of the Difeafe, we premise all possible endeavors to t out the Caufe, or at least to lessen, abate and retund OF that it may oppose no confiderable force to retard the linte ting out of the Difeafe. Yet in the interim, whilft we ercile bufie in the removal of the Caufes, the Effence of the erved cafe must not be totally neglected, as we have before aonifhed. Yea, when we have fo fubdued the Caufe that

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that it cannot for the prefent much interrupt the Current is the we may (the Caufes not being utterly overcome and caufed. We out) the more diligently and earneftly attempt the refit on the B ing of the affect; yet with this condition, That if th Pinicula Caufes revert and become new impediments, that the hexpelled we are obliged prefently to undertake the fubduing an Thelater evacuation of them : fo that in this Chronical Affect and with fometimes the Caufes, fometimes the Difease mush blave input selfifted by turns : and the Spirits do better undergo this interface change of action, than if we fhould continually make ou cant is f battery against the Caufes, till they were abfoluted by, and rooted our.

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Morcover, When the Caufes of the Difeafe in this Af unte Di feet are unapt for motion by reason of their toughnels "" mul groinels, and perhaps setledneis; they must first be free dies our from this impediment and prepared before they are evalues, as in cuated. For according to the Rule of the great Dictar, prot tor, Que movenda sunt, fluida prius facere oportet. Interenin like manner, that thicknef, toughnels and fetlednels othome matter, if it be present, indicate Remedies attenuant, in mptom is cident and opening: But these things are not fafely taken aled, the the impurities fill flowing back into the first Paffages outtained for then perhaps they are carried along with the Medi-depium cines into the Veins, and more defile the Blood, or aimy. least hinder the efficacy of the Remedies. These there-Montove fore have the nature of an impediment, and must be inflient, the the first place removed. the Me

Lastly, Universal Evacuants must be premised before diquent Particular and Topical Remedies, especially where it is not permitted at once to mind both intentions. For the Universal Canfes flowing in the Body, are easily furrogated in the room of Particular Evacuations, and renew the Afflux to the first affected part: but the thinner part of Particular Causes, and that which is most apt for motion

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tion is evacuated, but the thicker perhaps is more imted. Wherefore Universal Caules yet flowing to and in the Body, as confidered are Impediments in respect le re Particular Evacuation, and by confequence must be t expelled. Dat de

The later Rule was, That we must relieve the more ur-t and weighty Indicant first, unless there be an interruption Affei ome impediment. That is termed an urgent Indicant CHUR !! ich threatneth the moft danger. Now every fuch Intrgo th ant is fupposed to induce great afflictions into the nake o dy, and not without manifest danger to wast the Spibiolute 5. Therefore in this respect we must sometimes first ist p the Difeafe, the Caufe being neglected : Sometimes ) we must neglect both the Difease and the Caules, and ghne Irefs our endcavors to the pacification of the Sympbe fre ns, as in a vchement Flux of the Belly, long Watchart CR is, profuse and immoderate Sweating, and the like. Did teven in these cases, we must have a prudent regard h to the Difease and the Causes, and when the urgent daels mptom is corrected, or the violence of the Difcafe reuant, i ffed, then we must return to the regular Method of y takt occeeding; for this Rule belongs not to the ordinary Paffige l'legitimate order of Cure, but to the Method of Nehe Mod Ity. od, ce i le ches

Moreover, to perfect the right administration of Indiions, there is required an exact and accurate knowlege the Merical Matter whereof we shall discourse in the 

CHAP.

E. W. LECTER

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## CHAP. XXIX.

# The Medical Matter answering to the Indica. which are tions proposed, and first the Chirurgical.

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HE Medical Mattee must be found out by Experimence perience and Analogismes, or arguments drawiputchis

by an answerable necessity from the Cause to the don do it Effect; although the truth is, we conceive not any others comm Reasonings to be absolutely excluded. It is vulgarly noticed and not unaptly distributed into three kinds, The Chirures the m gical, the Pharmaccutical, and the Diatetical: Of the en, but f in their order.

The Chirurgical commonly received and approved indexicant this Affect, and famous above the reft, are chiefly two, tempted Scarrification of the Ears, and little Fountains or Iffues, though is But our enquiry (as we fhall fee anon) fhall be extended ould conto many more, namely of Cupping-Glaffes, Leeches, dlow par Blifters, Ligatures and Swathing-bands : But the ope- Yetitm ning of a Vein the Spirits cannot brook, as every one by the ho knows, who but obferves the frailty of the age, the extenuation of the habit of the parts, and the finalnefs of evillant the Veins.

The Scarrification of the Ears shall lead our discourse. of dis The Empericks who undertake the cure of this Disease, miterin make more of it than one would imagine. For in their or this practice they celebrate it with great vaporing, and without it scarce hope for a happy cure. But we, although we he Condifalles

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llow not this kind of remedy, have feen many Chilfuccessfully recovered without the use thereof. And themselves who attribute most unto it, for the t part take away no confiderable portion of Blood. Yet e affirm, that they have feen a large quantity of od drawn away with good event. However it be, it redible, that those Children do with most ease ene this remedy, and obtain most profit by the use of nuc which are of a Sanguine complexion, and well habited, who are affected with an Alogotrophy, rather than an opby or a Confumption, or any other remarkable ex-Ent lation of the parts. Our Practitioners for most part that eat this operation two or three times in a week. They and lom do it with an Instrument or sharp Pen-knife, bus weir A commonly with an ordinary blunt Knife, taking ulan notice of the pain and crying of the Child. Moreover, the most part they perform it in the hollow of the ) in r, but some extend it to the inward and outward cirmference of the upper part of the Ear, yea to the 4.9 ned in ole circumference. No man hitherto as we know have empted the Scarrification of the hinder fide of the Ear, THE hough indeed it is not cafie to give a reason, why it ould conduce lefs being administred there than in the utenot: etha llow part.

Yet it may be lawful for us to offer our conjectures by the hollow of the Ear should be chosen before the ner parts for this operation, which notwithstanding will not confidently affert, although we suppose we nat least probably affert, if that be true which the off diligent Chyrurgion Fabricius Hildanus hath itten in his Observ. 4. Centur. 1. de nervo quinto paris : or this conjecture is grounded upon this Observation, d if that be ruinous, this perhaps must perish with it. he Conjecture is this, The distribution and use of the Nerve

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Nerve, and of the fifth Pair before mentioned, being fun my b pofea, Scarrification in the hollow of the Ear may very con venieatly both free that Nerve from any kind of oppreffior wh patt and likewise shake off the numbress, and give it vigor the Blo For the hollow of the Ear is the next place unto Wherefor ganels th which we can come at with an Inftrument. evacuation being here made, may immediately drive awa are could the matter which commonly oppreffeth the very begin ning of that Nerve, and withall caufing pain and en tans we in creating the heat, and may drive out all flupidness fron put within it, and add vigor unto it. It this Nerve therefor It must (as that famous Chyrurgion affirmeth) or a part thereoth a par be distributed unto the Marrow of the Back, and never the forlakes the Marrow of the Back, but thooteth out little in it Branches with the Nerves of the Marrow of the Back to Latty, the ends of the very Legs and Feet; it may eafily benich lom granted, that this Nerve thus delivered from obstructi-unheat on, thus excited and having gotten vigor, may likewife intrinced fome manner excite the Marrow of the Back it felf, and Blood all the Nerves from thence arisings which by that opi-tertion. nion it doth accompany to the very end of the Body, and lucs in imprint lome vigor in them. Wherefore Scarrification lown low being made in that place, must needs be of greater effica- cans, cy, than if it were inflituted in any other part of the fame and even Ear, more remote from the aforefaid Nerve. The fame " but may almost be faid concerning the little wound here with made by a blunt Knife. For fome Practical Phyfitians Milling affirm, that the excellency of this operation relates not fo luce of much to the quantity of the Blood to be drawn, as to the atrines ftirring up of pain in that part; which any man may at the eahly reduce to the firring up of the vigor of the Nerve Platton a, ftrer of the fifth Pair.

But omiting this Conjecture we will propound fonte Man other Confiderations, in respect whereof this Scarrifica- Nonly

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It must be noted, that this operation when it perforth a particular and local evacuation, doth not simply erve the first place in the Method of Cure, but must low in its order, Universals being premised.

Laftly, It feems to be ridiculous and superfitious ich some are busie about when they administer this arrification; whilst they fasten the Blood of the right r suck'd up into Wooll to the left Hypochordry, and Blood of the left to the right. Thus much of Scarr cation.

Iffues in this Difeafe are much approved, and we have own fome Children cured only by the help of this cans. For it doth not only perform all those things ich even now we alcribed to the Scarrification of the rs, but more particularly it is a powerful remedy ainft the Hydrocephalus, both Curative and Prefervac, and very much conduceth to leften the unufual magtude of the Head, and to evacuate the fuperfluous striness thereof. And laftly, to represse the inordite encrease of the Bones. Also it manifestly drieth the too much humidity of the Spinal Marrow, exciteth at, strengthens the Nerves, and expelleth the astonishent.

Now because this kind of remedy is properly a little Ulcer; tilleer, and caufeth fome fmall pain to the Child the hath it, and bringeth daily fome trouble to the Nurfe, any part of ought not to be preferibed, unlefs the greatnefs of the Difeafe be fuch that we defpair to conquer it by othe remedies without the concurrence of this.

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This little Fountain must be made between the Secon Secone and Third turning Joynt of the Neck. Some burn ngerous with actual Cauterifing, but we disapprove of this wa in regard of the vehemency of the pain : Some effect i ut are a talons with a potential Cauterifing: but neither do we like this because all Caufticks are adverse to the Nature of a Infant, infinuating fome venemous quality, and at leaf **Can**unda do too much diffipate the Spirits, and weaken the parts s we beg Therefore we allow rather of an Iffue made by Simple in ITS, OF the cifion with a tharp Pen knife. IN YOUT

Some make use of Iron-Tongs contrived for thi whethert purpole, wherewith they take hold of the Skin, the plac of incilion being first mark'd with Ink, and by a mode the it be Neren rate compression they dull the fense of the part, and then 1100 001 they thrust in the Pen-knife through the middle of the congs, which is pierced with a longifh hole, and fo the mere for make the incifion. Having made the wound, they for IEQIDENT. in either an Artificial or a Natural Peafe, putting upor bited w it a digeftive Plaister : upon this they wrap a Paper of itong Ch a linnen cloth divers times doubled, and fasten to it as it were a Buckler made of some folid matter, unto which four swathing bands are sewed; thus much of Issues othe inne In the next place we shall examine fome other kind of a to other GII NOU Chyrurgical Operations.

And first Leeches offer themselves. Truly we have in them not yet sufficiently tryed how beneficial the application of them may be in this Affect. But if we confult Reasoft them may be in this Affect. But if we confult Reasoft them may be in this remedy. For if they are applied to this, if any that,

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ny part of the Head, by reason of their continual fucing they would easily cause a more violent afflux of the blood to those parts. And if they be applied to other arts, they draw the Blood from the parts which before ad too little.

Secondly, Cupping-Glaffes are not. (we conceive) fo angerous as needlefs ; indeed we altogether reject thofe hat are ministred with Scarrification, not only for the leafons just now deduced from the Leeches, but being noved both by fear of dejecting the Spirits by reason of he pain, and also in regard of the troublesomeness of the dministration. Cupping-Glasses without Scarrification, s we began to fay, feem not refusable either by the Spiits, or the Disease, or the causes of the Disease. But these re very little effectual, and we leave it to be perpended, hether the profit arifing from the use of them; what fover it be, can recompence the trouble of the application. Neverthelefs it may happen by reason of the compliation of some other Disease, that the use of them may e of some moment, as in a Pleurisie, a Phrensie, and here some dangerous Flux is imminent against some rincipal part ; in which cale those perhaps that are adbited with Scarrification, may be admitted in great and rong Children. But then you must apply them to the arning Joynts of the Neck, the Shoulders, the Hanches, the inner parts of the Thighs, to the foles of the Feer, id to other places as the peculiar complicated affect hall require.

In the mean time it must be noted, that in an age fo inder, you must make use of very small Cupping-Glasse, and that they must be applyed with a less flame then they be wont to be in others of mans estate, and that the scarritation, if at all it be admitted, must be done with a gene hand.

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Thirdly, As for Blifters, although hitherto we have CERT. not had sufficient tryal of them, and although we banish from this Difeate both leptical applications, becaufe they d flolve the part, and also cauftical, because they penetrate deeper, and produce a cauftical fubftance ; yet we conjecture that those Pyrotical remedies which only raife Blifters in the Skin, may be sometimes profitably admitted. TOYOSTO .

You will fay, that Cantharides wherewith they are commonly made are extream hot, and belides suspected ther con to be of a venemous quality.

ercile, We answer, That we may not here infert any thing of ige., Ag the qualities of Cantharides, we grant that which is af-Twards b ferted. But because they are administred only to the out-Ipcets ke ward little Skin, and only to a little part thereof not b Iliue w much extended, and becaule as loon as the blifters are ell fupp railed, they are removed, the excels of their heat and their imit the Poylon scarce penetrates deeper into the Body, than the dy, unle bottom of the Epidermis, and therefore this remedy may be applyed without any notable harm or danger. But aule pror then you may demand what profit can arile from hence? We affirm, that it doth effectually correct a co'd and mmodu moist distemper, and potently diffipate the aftonishment e Neck of the Marrow of the Back, the Brain, Nerves, and the which Nervous parts, and withal that they make all the parts le Ears,0 more firm and steady, and stirup a stronger Pulle in the it it man external parts; all which things are of no imall moment COMP in the cure of this Dileale.

ace with One amongst us affirmeth, that among other things routh he prescribed this remedy to a Child of two years old s and it who was troubled with the Rachites, and was allo fallen gether 1 into a continual and malignant Feaver, and grown allodefate, molt frantick. Hereupon the Child found pretent and avenien manifelt cale, and after a tew days was delivered from his F 助打 由 Feaver

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caver: Afterwards having purged him twice or thrice ich an infusion of Rhubarb, &c. Beyond the expectaon of all that faw it, he also subdued this Affect almost ithout any other remedies. But as you can scarce find y commodity without a difcommodity : so neither is is remedy exempted from all inconveniences. For it is pleafing, full of pain and moleftation to Children : orcover, for a time it interrupteth their exercise and ftime, in respect of which things, unless perhaps fome nin her complicated affest do point at an interdiction of ercife, it may do much more prejudice than advange. Again, the force of it fuddenly wafteth, and afwards by degrees is confumed, which doth not in all spects keep touch with a Chronical Difeafe. Finally, Illue which is proper to Chronical Difeafes, may very Il supply its place in this affect. Wherefore we scarce mit the application of blifters in the cure of this mady, unless some acute Difease be accomplicated, which ay require this kind of Remedy, as it falls out in the aute propounded.

Now where this administration is requisite, it is most mmodioully performed upon the turning Joynts of e Neck, unless fome lifue have prepofieffed the place : which cale you must administer them either behind e Ears, or four Fingers below the Islue. We deny not It it may be fitted to feveral other places in respect of e complication of otherDifeales. But we here defign the ace with a peculiar reference to the prefent Difeafe.

Fourthly, Ligatures also may be referred to this Tie, and indeed we grant, that fometimes they are not algether unuseful in this affect; namely, if they be very oderate, and adhibited by just distances, and unto invenient places; but you must beware that they hinr not the growth of that part, whereunto they are applyed :

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plyed; which is done if they be fufficiently loofe, and made of foft wooll, if in the Day-time, or for fome part of the Day they are tyed up, and unbound at night, if they be fitted to the Thighs and Legs upon the Knee, and to the Arms upon the Elbow.

Yet Ligatures do here seem to conduce much to the ftoppage of the Blood from flowing to the Head, and that it ought to be fastned to the outward parts that are extenuated : besides, this Remedy is good to retard the over flippery return of the Blood in those parts, unto which the Ligature is applyed.

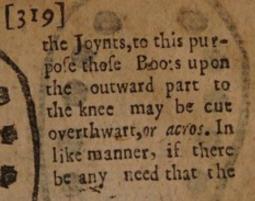
Fifthly, Hitherto also belong the Falciation or iwathing of certain parts, for this hath an affinity with Ligatures. For some use to enwrap the weak parts in woollen blankets, thereby to strengthen them, and to cherisch their heat; namely, the Feet, the Legs, the knees, and the adjacent parts of the Thighs. But you must be careful that the overstraightness of them hinder not their growth.

Others, inftead of these swathing-bands use buttond Boots lined with woollen Cloth; these they do not make use of only for strength and heat, but also to correct the crookedness of the Bones, and to creft the bending of the Joynts. Some add little Shingles, or pieces of Whalebone, but there are three things worthy of observation in the making of these. I. That they may somewhat crush the prominent and convex part of the Bone. 2. That they scarce touch the hollow, but rather that they defend it from compression. 3. That they be well fitted to the part, and do as little as possible hinder the motion of

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Shingles upon the knee be extended to fuffain and crect the bending thereof, then it is neceffary that you fashion them with a double Joynt in the bending place, after this manner. X 3

# [ 320] Splents. Iron, . TOURSEN

The Form of the Ar- my math ticulation of the dilfmon tion of th

A B Two Iron Rings . belo hut C D The Diameter of raleis; cl the Joynts of the that they Spleuts. prer, Th



The Nails ble Arel where with Lift,T the Rings To made, are fast- the beno ned. erve as I

Latitude

FG The tvo Splents. at, but let cially to

Instead of theSplents the Arel you-may more com- Joynis il modioufly use thin line. places of Iron, and the Inlin whole Inftrument in Fer may be made of Binds, every nig octween.

A The two Axel trees inwards or Diameters C D Cotton upon which the Shin- Lafth gles or Splents are hupit bended, F G are fast- bone put ned with two rings or which t hoops. But the hoops they me themfelves A B C are out of . made of places of I- from a ron of an exquifice they be thickness, that they mither may

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and withall they ought to be " vell fmoothed and politht, that they hinder not the moon of the Splents. These Rings must be of an equal atitude, suppose about two fingers a cross, and they must light e fo fitted together, that on every fide they may be paaleis; enly let there be fo much diftance between them, the hat they may firly receive the tops of the Splents. Morever, Those hoops must not only be coupled with a dou-Me le Axel C and D, but also with five small Iron Nails. aftly, The whole composition of the Instrument must be o made, that it may be fast and fitly tied to the fide of he bended knee flicking out, and withall that it may erve as well for the extension as the ordinary bending of t, but let it restrain the deflexion of it to either fide, espeially to the part flicking out. Which is the caufe why he Axels are fastned with a double Hoop, namely, left the oynts should be loofe, and yield to the deflexion of the ance.

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In like manner the torfion and mifhapen writhing of he Fest is also frequently corrected with swathing-Bands. If the Toes are outwardly difforted, they must very night be bound up, little balls of Cotton being put between the Heels and Ankles. But if the Toes bend elut pwards, then you must bind the Ankles, and put a little Cotton between the great Toes.

Lastly, To straighten the trunk of the Body, or to seep it ftraight, they use to make Breft plates of Whalemill pone put into two woollen Cloths and fewed together, which they fo fit to the Bodies of the Children, that they may keep the Backbone upright, reprefs the flicking out of the Bones, and defend the crookedness of them from a further compression. But you must be careful that they be not troublesome to the Children that wear them, and therefore the best way is to fasten them to the Spine ot

## of the Back with a handfome ftring fitted to that use.

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### Of the Pharmaceutical matter, and first of Such things as cleanse the first Passages.

His matter is of manifold and most noble use, and fatisfieth very many Indications. For it comprehendeth all Medicaments, those only excepted which concern the Chirurgion, which have a primary relation either to the causes of the Disease, or the Disease it felf, or the Symptoms.

It is divided into remedies Internal or External, and each of them into Simple and Compound. Again, the Internal may be fubdivided into fuch as cleanfe the first passages, as Medicines Preparatory. Into Electively evacuant, and fuch as are Specifically alterant and Evacuant, and finally into those that correct the Symptoms.

Among these the Internal obtain the precedency, and of those again such as wash away the impurities of the first passages, because these (as hath been already observed) are justly accounted an impediment in respect of the following remedies, and fimply ought first to be removed. But in all the Titles (as far as the Nature of the thing will license or warrant us) we will place the Simple before the Compound.

Mireover, these washing remedies comprehend these threed in is, namely, Clyfter, Vemit: and Lenitice Purga-

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### The use of Clysters, and some forms of them.

The Injection of Clyfter pipes, before we more exactand earneftly attempt the Cure, is then chiefly preuired, when the Belly is coftive, and the Excrements hardned; or when fome windy humors torment the ts, or fome vehement pain in the Bowels afflict the ient. In which cafes they may not only be injected bore any preparation, but allo before a Vomit, yea, or a enitive Purgation. These are frequently compounof benign and gentle Purgers, fometimes alfo of fuch have only a faculty to make the wayes flippery, and the expel wind, but never of Cathartical ingredients that widen the violent, they are to be injected warm or lukewarm, after a long abstinence from meat. We shall prof: fome forms.

Take Cows new-Milk, warmed, four or five ounces; when is-Souds beaten to Powaer ten grains, Courfe Sugar one officies, one ounce and an half, or two ounces; the Yelk of euro Egg: mingle them, and make a Ciyfter; to these mut, ry be added half as ownee of new Butter.

Take a sufficient quantity of an emollient Decoction. An self ctuary lenitive half an cunce, Syrup of Rose. Solutive, intel Syrup of Violets, of each fix drams; Oyl of Chaohn-r mil one ounce: mingle them, make your Clyster, and et al it be injected lukewarm.

ben. Take the Rosts of Marsh-Millowes beaten together, half in the ource; or in lieu thereof, the leaves or Flowers of the d'lowes half a handful, Flowers of Chamom'l one Pu-H mp Seeds two drams: boyl them in a sufficience there neity of Whey mingled with Beer: To four or five ress of the Decostion, add of Diacassia, or Electuari-Passe ores of the Decostion, add of Diacassia, or Electuaria Passian balf an ource, Syrup of Roses Solutive, and and Kitchin Sugar, of cach one ounce; new Butter fis fourby drams, you may if you see occasion add the yelk of our by the Egg.

Take Stone-Herse-dung that is new, one ounce and andet allo half; The Seeds of Annis, Fennel, Mallows beaten toge communither, of each one dram and an half; Flowers of Chamomi mome: one pugil. Boyl them in a sufficient quantity of Posser ungshal drink: In four or five ounces of the Decostion, diffolys/indpipe: ten drams of Syrup of Violets, Common Sugar, and Oyl o heuns, an Roses, of each balf an ounce: Mingle them, and makeys. Fina your Clyster.

### The use of vomiting Remedies, and some examples of them.

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Emedical Remedies or Vomits, do chiefly performimalithe three things. Firft, they evacuate crude or corrupt hutter or le mors, and all manner of impurities contained in the Sto-Hedicine, mach, and that by a fhorter and more expedite way undoir, t than if they were conveyed through the involutions ancounded, labyrinths of the Guts. Secondly, By an agitation and known commotion railed in all the parts, especially the Bowels, and any they losfen the grofs and vifcous humors adhering unterll que them, or impacted in them, and frequently expel them with this especially those which are collected in the Stomach and Micomea Guts ; in which respect they are profitable against tor-uch an ments of the Chollick, and very conducible to unlocarattelore Obstructions. Thirdly, They most effectually irritatep Children the expulsive faculty of all the parts of the Body, and petition, a especially of the Bowels, and by this means many times Medici upon a fingle application they compel forth the hidden artfore and unappearing caules and fomentations of Difeales, Maperier and especially of intermitting Feavers. For by the ve- Find, A ry ftraining to vomit, the Guts are allo inftimulated to histhe call

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utty tout by fiege. The Liver powreth away the Cholof by the Biliary Pore; the Sweat-Bread voideth his uliar excrement by the new Veffel into the Guts; the leen also perhaps unburdens in a plentiful manner his rement into the Stomach by Veffels not yet throughknown : The Kidneys excern through the Wreters, the Pole ings by a ftrong Cough eject their Flegm through the indpipe : The Brain emprieth it felf of falt, waterifh neums, and matter by the Palate, the Noftrils and the nd Onl es. Finally, the whole Body for the most part is rennd ma ed more prone to a Diaphoresis, either by a manifest reating, or elfe by an occult and infenfible Transpiraon. In the mean time it must be noted, that not all ales of ntle Vomits, nor indeed the more vehement, if they given in too fmall a dole will prefently and fully perrm all these things, yet in their operations they effect perfot ore or lefs according to the firength or quantity of the trupt & edicine, and indeed if the ftrenger be administred in a . n the St Il dole, they effectually attain to the three marks prodite wa unded. ions at

It is obvious by what hath been faid, to the confideraon of any Reader, that ftrong Vomits prescribed in a Il quantity are not competible to Children affected ith this Disease, neither can their tender ftrength rercome and fubdue fo great tumults in the Body, and ch an Universal evacuation fo fuddenly wrought. /herefore this kind of remedy ought not to be prefcribed Children without diligent precaution and circumection, and both the ftrength, quantity and efficacy of e Medicine are duly to be prepondred. To this end terefore we shall set down some Cautions in favor of nexperienced Practicers.

First, A Vomit is not to be provoked in this Disease, alefs the humors tend upwards of their o vn accord, but then

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then indeed they may be expelled by vomiting remedies ince; be without difficulty.

Secondly, Not unless Children are naturally or custo-nounce of marily apt to womit, and do cafily endure it.

Thirdly, In Blood-spitting, the Prisick and Confumption, in any flowing of Blood at the Nese, or any internal opening of the Veins, and the like cases, abstinence de its must be enjoyned from this remedy.

Fourthly, Vehement vomits exhibited in a larger dole nesgeand are here forbidden. For the fear is just and prudents of parts that they may depopulate the Natural Spirits, and further confume the very folid parts which before were alkons, o over-much extenuated.

It is neceffary therefore that the Vomits here preferibed, be either in their own nature gentle, or corrected ram, two if they be vehement, and administred in a leffened dofe. rams, M

You will fay, It they be of a mild and lenitive faculty, or hk. exhibited in a diminute quantity, they cannot compel the Take Sal humors with any fliacy.

To this we answer, Indeed where Nature contributeth little or no affistance, it cannot be denied; but in fuch cases we totally prohibit the administration of vomiting remedies; but presupposing both a fitness of the Body and Humors to this evacuation (as is required in the first and second Caution) even gentle Vomits may expel such humors as are seated in the first passages. The re delive thing must be faid of the strong being prudently correstreted, and sparingly applied. For by reason of the coratethe V rection and diminute quantity, they do not much shake and discompose the Body, or provoke Nature; and units, a again, through the proclivity of the Stomach and Humors, they are sufficient to reward this Scope with a laution will be a ples.

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Take the tops of Groundfel half an handful, Raifins one nce; boyl them in a pound of Ale to the confumptiof one half. To three ounces of Colature, add half ounce of Syr. Acctof. fimpl. Mingle them, and drink em luke-warm.

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Take the Infasion of Crocus-metallorum in Spanish Wine, ide in a cola place and well purified by subsidence one am, a dram and an bill, or two drams (according to and cage and ftrength of the Sick) half a dram of Syr. Act-. simp. Posset-drink an ounce and an balf, Cinnamon water varops : or instead thereof, if there be any fear of Conte ut llions, one scruple of Aq. Antepilept. Lang. Mingle em, and drink it warm.

price Take the Juyce of the Leaves of Afarabacca balf a consta am, two scruples or a dram, Syrup. Acetof. fimp. iwo deal ams. Mingle them with a fufficient quantity of Poffettuk.

and a Take Salt of Vitriol from five to ten grains, Give it in flet-drink.

#### Lesitive Catharticks.

These Evacuant Medicines produce their Effects ithout tumult, and therefore they require not fo great rcumspection, as Vomiting Compositions, or such as e electively Purgant. Yet three things must be coniered in the life of them. 1. That they do not nauate the Ventricle with fuch an ingrateful taft and favor rhe cot may render an abhorrence from all future Medica-2. That they opprefic not the Stomach by an ents. amoderate quantity. 3. That the potion drunk be not efently vomited up. To prevent this last danger, it ill be a good way prefently to bedew and moisten the Mouth Mouth with some pleasant and agreeable Liquor, or with candied Cherries, or preserv'd Barberries; or to temper the juyce of Oranges, or the like.

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These Lenitives may be divided into Simple and Compound: and these again into such as are fold in the Shops, and such as are newly made and accommodated to the prefent scope of the Physician.

each a dr There are found very few Simples, that of themielves rough a li will latisfie this scope ; as Manna, Casha filtula, Aloe socca-Man add trina, Tamarinds, Polypodium of the Oak. But very ineffectulen you ally, unless they be compounded with other Purgative In-Ry is, of gredients, of which more follow, as Jujubes, Subestiens, the of the weet Prunes and Dama cens, Figs, Dates, the Pap or Pulp ounce er of rosted Apples, the Flowers of Mallows, Violets, Pellitory Wall, and of the Wall, Mercury, the Roats of Marshmallows, Liquoris, Take of the four greater cold Seeds, the Seeds of Mallows, freet Alo drams; monds, reare Eggs, Fatty (ubstances, Butter, Oyl of Olives, TAY OF T Byl of Almonds, Whey, and the like. These although of Mingle themielves they are of imall efficacy, yet by the com-1282 0 1 mixture of other Catharticks they require a gentle purake two P gative quality, not to be contemped.

D EWO Ca The Lenitive compound Catharticks which are fold thens be in Shops, are these: Casia extracted with, or without put licen Senna, Diacassia, Electuarium Lenitivum, Diaprunum lenietink aft tivum, Electuarium passulatum, A common Decostion for a La fin A Medicine, A Decoction of Flowers and Fruits, Syrup and lascor s Honey of Violets, Symp of Roscs folutive, Houey of Mercury, OUDCC, Honey of Ralfis, Conferve of damask-Rofes, Of the Flowers and one of of Mallows of Violets. To these may be subjoyned some ter, and extempory forms. As

Take of the best Calabrian Manna fix drams, Cremor of Motion Tartar seven grains, Posset-Ale in which a few Anni-seeds have been byled an ounce and an half. Mingle and give them in the morning.

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lake of Polypodium of the Oak two ounces, white Tarprepared two drams, (west Apples twelve handfuls, firs of the Sun stoned one ounce : Boyl them in a fufficia quantity of Water to a pound. In the Decoction infuse a night long Choice Senna an ounce and half, Rhubarb ti drams, Pulp of Casia new drawn half an ounce, Tamar is an ounce, Liquoris, the Seeds of Annis and Coriender, c:ach a dram and an half: The next morning ftrain it t ough a linnen Cloth, and to eight ounces of the Dcc ion add white Sugar fix ounces; Boyl it a little, and wen you have done so, add to it Manna diffolved in Syrup o tofes, of each two ounces; Syrup of Violets one ounce: P. 1 ke of them a Lenitive Syrup. Let the difeafed Child take a ounce either in Succory Water, or Water of Pellitory of t Wall, with a dram of the Juyce of Lemmons.

Take of Lenitive Electuary one dram and half, or t drams; Syrup of Refes folutive two drams and an half, Coney of Tartar ten grains, Poffet-Ale a sufficient quantir Mingle and administer them early in the morning. Take of Aloes washt, or Aromatical Pils feven grains ; P ke two Pills with Syrup of Roses Solutive, put them in two Candicd Cherries, the Skins being pulled off, and I them be swallowed whole, left the taft be offenfive, ut fleeping time in the evening. In the morning give irink after them, one ounce of Syrup of Refes folutive s i Poffet-Ale. Or

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Take of Syrup of Rofes folutive fix drams, Violets half ounce, Juyce of Lemons one dram, Electuarium Passimone dram : Mingle them with Succory or Pellitory alle ver, and give them in the morning fafting. Thus ch of those Medicines as clear the first passages.

CHAP.

### [330]

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### CHAP. XXXI.

### Remedies Preparatory, and their Use.

Hefe Remedies partly relate to the preparation struct to and of the Humors, partly to the wayes thorow Thirdly, which they are to be expelled, and partly to the signally flow paffages themfelves, wherein they are contained. Now dedicament it must be known, That the Evacuation which is per-statis or the fected by Vomits, doth least of any pre require any pre-thoice must paration; but that which is accomplished by Catbarticks ds, and for or Medicines Purging, doth most of all exact it. Moreorer,

First, The Humors in general to be prepared are either install of Flegmatick, namely cold, which muft be qualified and und inthis tempered with hot, thick things, and muft be attenuated; sibed by his vifcous, and muft be cut and opened; or Cholerick, ea Faver p namely, fharp, bitter, burning, corrofive, which are to beng; in like mitigated with lenifying and affwaging Medicines; or atterped Melancholy, namely earthy, feculent, tartarous, which and for the by a benignity of application muft be rendred fluxible; suffed with or laftly, ferous and waterifh, which muft be difpofed, and to for the as it were manuducted either to the Urinary paffages, difficient in a by piffing, or to the Belly as by fiege, or to the parts and in the near the Skin, that they may with the more facility eva-d to the Difporate by Swearing.

Secondly, The wayes thorow which the Evacuation must be effected, ought also to be made fit and prepared,

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and not only the common, but also the special, by which the peccant matter in particular is conveyed to those common Channels. For there is one preparation of the Veffels of the Kidneys (which is chiefly expedited by Medicines of a flippery and loolning faculty) another of he Veffels of the Liver, which is done by opening, cleaning, and somewhat aftringent Medicaments : A third f the Veffels of the Lungs, which is most fuccessfully vrought by Lenient and Maturant Remedies, fometimes erhaps according to the nature of the matter, Medicines neident or attenuant being administred, or on the conrary, Administrations making thick, and fuch as have a ertue to arreft and avert the flux.

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Thirdly, Those parts wherein the vitious humors prinipally flow or are lodged, require the admixture of artiv to th Acdicaments peculiarly appropriated unto them. Ind nce, No s this or that part is more or lefs affected, sometimes nich is pa hoice must be made of Cephalicals, sometimes Hepatiairt say m uls, and fometimes Pectoral Preparations. Calentar

Moreover, (that we may comprehend together most not all of the qualities of Preparatory Remedies reuired in this Affect) we fay, That these Remedies preribed by Arr ought to be moderately hot (unless there : a Feaver present) also attenuant, incident and openg; in like manner, that by a peculiar right they must we respect to the Liver, the Lungs and the Head, which erts for the most part are commonly in this Affect oreffed with a plenitude of humors : Again, That there e some things specifically appropriated to this Affect : id if fuch things are not in Readinels which are regied in the number of things preparatory, and dedicad to the Difeate, than at least other Spec ficals ought be mingled with the Preparatory Medicines.

There

These things being premised, we judged it expedient to fet down such Simple and Compound Medicines as are usually fold in the Shops, and also fome examples of decompounded Preparatory Remedies. Yet we forbid the expectation of all Simples, or perhaps of any one that should comprehend all the qualities, which even now we attributed to those exquisite and appropriate where the second of any index Remedies; for then there would be no need of any that a prudent Physician may fele and contemper them they may be correspondent to all the fore-recited qualistary tics.

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The Simples and Compounds prepared in the Shops Lawing in readinels are these. All the Capillary Herbs, especial in two ly Tricumanes, Rhue of the Wall, Spica, Roots of Of the On mond royal; the Buas of the male Firnbrake newly Srup a sprung up, Polipodium of the Wall, Hartflongue, Lize, then, wort, Ceterach, Agrimony, Dodder, Scabions, Betony take the Leaves and Bark of Tamarisk, the Bark of the in the Root of the Caper-tree; the Roots of Succory, Endive Graffe, Sparagus, Myrobalans; Liquoris, Kaifins of C. Prunes, Damfens; the Seeds of Annis, fweet Finnel Take Coriander, Caraway, Dill; Syrup of Maidenbair and wor, o Betony, Simple and Compound, Syrupus Bizantinus, Syrup and of Succory, Eupatory the five Roots, Stachadis and Hors with to tongue.

Out of these, according to present Emergencies diversions of others may be Decompounded. As take the little Buds of en qua Gems of the Roots of the male Fernbrake five in number Decomo boyl them in balf a pound of Milk to three ounces; let himshif: M drink the Decostion in a morning upon an empty Stomach Dink to This is most agreeable to young Children that are used Lange. to Milk. Or,

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Take of the Buds of male Fernbrake newly budded out of the Earth, one handful ; male Betony, Hartflongue, Liverwort, of each half an handful; Flowers of Tamarisk one pugil ; Raifins one ounce and an half ; One Chicken the Guts pulled out, and with a sufficient quantity of Ostmeal, make your Broth according to art. Let the Child take three or four ounces in the morning, and at four of the Clock in the afternoon, adding (if you please) ten grains of the Cremor of Tartar. Or

Take Maidenhair, Liverwort; Agrimony, Dodder, of r that ingled each half a handful; the Roots of male Fernbrake, Grafs, qual Sparagus, of each half an ounce ; Flowers of Tamarisk one pugil, Raifins one onnce, White Tartar prepared one dram, Shop Liquoris half a dram, Mace one scruple : Boyl them mil in two pints of Fountain-water. To one pound of of of the Decuction add three ounces of White or Rhenilh with un Strup of Hartfto gue one ounce and an half : Mingle Lit them, and make your Decottion, whereof let the Child hun take a draught every morning, and at four of the Clock tof the in the afternoon. This is most prevalent and effectual Esdin against pertinacious Obstructions in the Misentery, Liver, Mal Or. Or

Fine Take of Coltsfoot, Maiden-hair, Hartftongue, Liverin a wort, of each half an handfal; the Roots of Sweet Cher-1, Sm vil and Sparagus, of each half an ounce; Spanish Lial Ha mo is two drams, Mace a scruple, Rais of the Sun toned an ounce; Jujubes by number fix, Sebestens sam light, two Figs cut in pieces : boyl them in a fuffici-Bull int quantity of Barley-water, and to a pound of the mult Deco tion, add Syrup of Maiden-hair an ounce and an Ind salf : Mingle them together ; and this is a very good sma Drink for fuch as are troubled with an obstruction in the att Lungs.

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Take of Sweet Wort two pound, Liver-wort, Maidenbair, Hartforgue, Scabious, Coltsfoot, Featherfew, of each an handful; blue Figs cut in pieces, Raifins of the Sun, of each half a pound; Liquoris, Anni-seeds, of each two drams : boyl them over a gentle fire nine hours, ftrain it, and keep it for your ule. It's good for that the former was.

Take Sarsaperilla cut and well beaten three ounces, the Roots of China, Hartshorn Shavings, Ivory, of each one ounce; the Leaves of male Betony, Liverwort, Scabious, of each three handfuls; the Buds of the Root called Royal Ofmond and Fernbrake, of each two ounces : Boyl them in four gallons and a pottle of new Ale four or five hours over a gentle fire : Then after some hours respit strain it upel the thorow an Hair-Sieve : afterwards put in of the Juyces of Scurvigrafs and Brooklime, of each half a pound; a arts when sufficient quantity of Barm or Yeaft : Let it work accor- Bard mu ding to the usual manner, put it into a little Vessel and Then draw it out for the ordinary drink. This is most conducible, Autorica where there is any suspition of the Scurvy or Venereous Pox, ion of th It West being complicated with the Rachites. catle in r

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### Remedies Electively evacuant.

He matter of the Disease being prepared, and the passages opened to facilitate the evacuation, the ext thing is, To confider what remedies will electively spel the peccant humors in particular. Now these redicines do partly concern the humors, and partly the irts wherein they are lodged; but in each of them a due gard must be had to the Spirits.

The violent must be either totally prohibited, or elfe hibited after a due correction or a circumspect diminuon of the dole; and for younger Children, and fuch as e weak, they must be the lefs in quantity, and the more entle in quality; for great and lusty Children you may epare stronger remedies, and in a larger dole, proviid that they exceed not the strength of the Child. In oth causes it is safer to favor and go less then the rength will bear, than to transcend it in the least detee: and in this affect it is altogether better to proceed y an Epichrasis, then together and at once to attempt it full evacuation of the peccant humors.

Morcover, the predominant humors in the Body renire proper and peculiar remedies; as Choler, Medines purging Choler: Flegm, Medicines purging flegm: ielancholy, Medicines purging Melancholy: and wateth, fuch as purge water.

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Again, If the Liver be oppressed with humors more than the other parts, such Catharticks must be chosen as peculiarly belong to the Liver. In like manner the Lungs being vehemently infefted, or the Brain, and the other parts, such remedies must be chosen as are appropriated to those parts. But if there be not a ready supply Technicar, of purging Simples peculiarly dedicated to their parts, that defect must be made good by a prudent commixture of fuch ingredients as are familiar to thole parts.

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Laftly, You must endeavor (as much as possibly you, Kuy Sap can) to make choice of fuch purgers as are directly opat, Elet polite to the Effence of the Discale. In this respect we dicta Lax commend Rhubarb above all other Simples. For it is a Medicament moderately bot and drys very familiar to the inherent Spirits of all the parts, it gently dispelleth the stupifaction of the parts, and strengthneth the softniss and Likelm loofness of the parts, somewhat correcteth the internal (lipai ams periness summons the Pulse to the Arteries, and encreaseth the heat of the outward parts, and finally it cherisbeth the vigor and activity of the inner parts, and especially of those Tehtike which are subservient to nourishment. Add in a word, That it exceeding rarely (provided that you give it in a just dole) AM STA caufeth Super-purgation, for it is a Medicament Safe for all Eermorak Ages, and every Complexion.

These things being premised, we shall propound some simple purgative Medicines, and some examples of the Take the Compound. For nothing hindreth, but that many of the L of each pre-recited lenitives, may be commodioully referred hi-Fentelther, though in a different respect. For there they are tierat guar confidered as quickners of the lenitives which of themadd fyra felves are somewhat dull : But here rather as they qualia arays fy and attempt the violence of the ftrong.

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more mple and Compound purging Medicines which are fold in the state (hops:

er the Manna, Caffia fiftula, Tamarinds, all the forts of Myrolans, Rhubarb, Aloes, Syrup of Rofes Solutive, Syrup of nd the chury, with a double quantity of Rhubarb, Syrupus Auguappronus, Scammony, Agarick, the feeds of bastard Saffron, upply schoacan, Falap, Turbith, Sweet Mercury, Syrup of Roses parts stive with Agarick, Epithymum, Polypody of the Oak, DIXIDIC mas Syrup Magistralis against Melancholy, Syrup of Apples Myrou King Sapor, Diabalzemer, Electar. leuitivum de prusise ly op- ut. Electar.paffulat.Diacatholicon, Confectio Hamech, Bepett we lifta Laxativa. Cremor Tire would strate f

Some Examples of extemporary Compounds.

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tuls ai Take fyrup Augustan one ounce, syrup of Roses solutive augusto o drams, Succary-water half an ounce; to dissolve the syaugusto is, make a potion to be administred in the morning upon an set the sty stomath.

of the Take the heft Rhubarb beaten to powder eighteen grains, ord that up of Succory with a double quantity of Rhubarb fix intidole in fyrap of Rofes folutive two drams, water of the leaves deform Fernbrake fix drams, mingle them for a potion, this agreeth with Cholerick Constitutions, and fuch whose Livers are empered.

lese the Take the leaves of Scena, Polypody of the Oak, Epithymyothe n, of each a dram, Rhubarb one foruple, Chrystal of Tarfending, Fennel-seeds, of each a scruple, make an insustion in a they miscient quantity of Fumitory water; to the strained insusd theme add syrup of Magistralis six drams, Cinnamon se-water add syrup of Magistralis six drams, Cinnamon se-water here all endrops; else Langius his Antipeleptical water balf a ople: mingle them for a potion accommodated to Melanly Constitutions.

Take the leaves of Senna two drams, the pulp of Tama-Z 4 rinds

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rinds fix drams, the feeds of Anife, Liquords of each half man Melanco a dram, Cremor of Tartar balf a scruple, make an infusion in a sufficient quantity of Fountain-water for the space of a 4時194 night, with three ounces of the strained infusion, make an emultion according to art with Sweet Almonds blanched half drams, a an ounce. The four greater cold feeds, of each two fcruples, for two dofes, adding to each dofe fyrup of Succhory with a **南部**,作 fourfold quantity of Rhabarb, and the belt Manna, of each Affaith three drams. This qualifieth and evacuateth harp and adult 48 (WILL) ar an an bumors. 22

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three dra - Take lenitive electuary three drams, Rhubarb a fcruple, thick an Cremor Tartar and Anni-seeds, of each balf a scruple, the flower of Burrage and Rosemary, of each half a Pugils Take Fumitory-water as much as is fufficient : after you have out area infused them certain hours, strain it through a thick Cloth. they, and And to an ourse and balf of the infusion, add fyrup of the s Apples of King Sapor, balf an sunt: mix them together frup of for a potron.

Take Elder flowers a pugil, Rhubarb two fcruples, Jalap. 都 第2世 Mechoacan, of each a fcruple, Cremor Tartar half a fcru-515, di ple, Nuim gs fifteen grains, fist insuse them, then boy with the them gently in the water of broom flowers and Rheniff Struma wines of each fo much as is sufficient, strain it. And to a Tart dince and an balf of the decottion add fyrup of Rifes folution Natzer balf an ounce or fix drams : mix them together, and make gle fach of them a potion, which will be very agrecable for fuch Bodie. " them as are troubled with firgmatick or dropfical bumors, or **打出油**. 創造的 Cachexia.

- Take of the leaves of Senna a dram and an half, Rhu- mathe barb two fcruples, Agarick trochifcated one fcruple, Ta- with m marinds two arams, Anni-feeds, Cremor Tartar, of each M to a ferupt, Rosemary flow is a pugil, make an infusion in a sufficient quantity of Fountain-water, and after a very straile. gentle boyling to an ounce and an half of the decoction, add dimin Vru

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grup of Roses folutive with Agrick, Magisterial syrup against Melancholy, of each three drams, mix them together for a potion to cleasse the Body of mixt humors.

Take the leaves of Senna one dram and an half, or two drams, Agarick trochifsed half a dram, Fennel-feeds half a dram, flowers of Chamomel ten in number. Boil them in a fufficient quantity of Fountain-water, and to ten drams or an ounce and an half of the decostion, add half an ounce on fix drams of fyrup of Rofes folative with Agarick, Manna three drams, mingle them for a Potion dedicated to evacuate thick and flegmatick Humors.

Take sweet Mercury fifteen grains, conferve of violets one dram, powder of Gum Dragon one grain. Mingle them, and make them into a Bolus with syrup of Violets, to be given in the morning, drinking after it an ounce of syrup of Refes solutive, dissolving a draught of Posserdrink. This is most proper for such Children as are troubled as well with the Rachites as the worms; and on the contrary, also for such as have the French-Pox, complicate with the Rachites: also to such as are troubled with a Struma.

Take freet Mercury twelve grains, falap eleven grains, Nutmegs half a grain, the pubp of Raifins a dram. Mingle them, and with fyrup of Violets make a Bolus to be taken in the morning. Instead of Jalap, you may make use of Diagrydium, to three or four grains: This is proper for Children that are afflicted with Serumatical Affects, and such as are suspected to have the French-Pox, and such as are difficultly purged, and are averse from Remedies of an ungrateful tast.

Take of sweet Mercu y a dram, gummy Jallap balf a scruple, white Sugar diffolved in Betony-water three drams or balf an ounce, make them into Lozenges according

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ding to art of a dram, or two fcruples and an half weight, of which let the difeased take one at a time.

Take the best Rhubarb one dram and an half, Raisins of the Sun, the stones being pickt out, one handful, a pint of ordinary Ale, iefuse them for twelve hours, Arain it, and give it so Children that are greedy of drink in the night feaf pilantic Take Alaer Succotrine Seven grains, Rhubarb in powder eleven grains with syrup of Rofes solutive; so much as is Sufficient to make it into pibbles which must be given in preferred Cherries, the stones being taken away, or elfe you may guild them for the more cafie frallowing.

Fake freest Mercury tifterest grates, conferve of citure

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thick and fammatick Bumars.

### Frup of Rofes fabitive, differing a draught of CHAP. XXXIII. Specifical alterant Medicines.

He caufes of the Difeafe being now prepared, and in part evacuated, or at least fo fubdued, that for the prefent they cannot retard the cure, you muft proceed to these Medicines Specifically alterant, which as it were fly at the very throat of the Difeafe, and in regard whereof the premiled Medicines both preparatory and evacuant took place. 20% -rionor I out oton ot hat baffeil and

Now these specificals may be defined to be, Remedes, diametrically contrary to the Nature of the Difease, and fuch as air Etly impugn it. Serett y a. C.d.

Thele are either Simple or Compound, the Simple which hitherto we have had knowledge of, are thele, that follow ;

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low; the root of Ofmond the Royal, or rather the ke of the root, the middle being thrown away, the et of the male Fernbrake, or rather, the little buds bere their peeping forth out of the Earth ; the roots of rafs, Succory, Asparagus, Madder, Eringo, all the aiden-beirs, Ceterach, Hartstongue, Liverwort, Betony, e Flowers and Leaves of dead Nettles, Borage, Sage, Semary, Tamarisk, Southernwood, Pontick wormwood te greater Selandine, Saffron, Turmerick, the roots of trfaperilla, Saffaphras, China, the three forts of Sanders, ie wood of Guajacum, and its Bark, flower of Brimstone, el prepared, Crocus Martis, Salt of feel, wine Reelified, rup of steel, white and Rhenish wine, Sperma Ceti, usk, Ambergreece, Castoreum, Earthworms, the Livers Frogs' and young Ravens, Woodlice, washt in white Vine, bak'd in an Oven, and beaten to powder, and fuch ke things.

But if any demand, After what manner, or by what action rese Medicaments de especially over-rule the Essence of this Feel ?

we aufwer, That perhaps it is not necessary, that we refently fly to occult qualities, which for the most part but the Sanctuary and refuge of ignorance : but that he primary and lecondary parts of the Effence of this Difease above described ought to be reduced to Memoy: for by making a comparison between those parts, nd these Medicaments, we shall plainly difeern an obture contraricty and repugnance between them. For his Disease confiscell in a cold and moist distemper inerent in the Spirits together with want and aftonifhment f the Spirit and weakness of the parts afflicted : on the ontrary, these remedies heat and dry, cherish the Naaral Spirits, diffipate that numbnefs which is in them, nd ftrengthen the parts,

More-

Moreover, In regard that their remedies with their heitheat a heat and driness obtain withall a manifest friability and mbility a thinnels of parts, it comes to pals, that they cut through much to the all viscous matter, they attenuate all gross and thick hu-ubdue may mors, and procure a certain equality of all the juyces and a fu that have their circulation in the Sanguinary Mals, and uns; whet an even distribution (confideration being had of the tobalical diftance from the fountain of heat) both of heat and mets and Blood. Hereupon the external parts which before were infine, lean, enjoy a more liberal heat and nourifhment, and arts, and the Pareuchimata of the Bowels which were irregularly afe; ver encreased, are delivered from thick and viscous alimen - f the Ju tary juyces, and thereupon are fomewhat leined : by this is the co means that Alogotrophy or irrational Nourishment of ight net the parts, i from whence fo great a feries of organical at in a in faults refulteth, is corrected. Finally, thefe remedies song the do also ftrengthen and cherish the finewy parts ; and frengther likewife the extream weakneffe of the Bone of the ence of the Backa boub the like, 1

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You will fay, That all the Simples above recited by mingled m us, no not fully perform all these things. For the fevepredients, ral kinds of Sander's, though they may by their drinels, If any friability and thinnels of parts ftrongly impugn this Tobsundet Difeafe, yet by their coldness they feem rather to come fectual ; near to the parts of the Difcale, we lay therefore, that Firft, T Simples of this Nature ought not to be given alone, but make the f being commixt with fome other, which may prevalent-Bence of a by correct the noxious quality ; in like manner tome Secondly Simples excreamly hot, as Saffron, Castoreum, Flower he most p of Brimftone, ere, are very repugnant to this Dileale, Difeale, d yet you must refrain the administration of them unles qual diffr they be duly attempered. Moreover Surfaperilla, Saffao many or phras, Osmund royal, the kinds of Feinbrake, all the Thirdly Maiden-hairs, Hartstongue, Ceterach, and the like, minentlyb their

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had eir heat and drinels being conjoyned with a notable iability and thinnels of the parts they contribute very through such to the equal distribution of the Blood, as also to but he bdue many other parts of the Difeafe. But they fearce Ind a sufficient strength to the finewy and fibrous that arts; wherefore they feem to crave an admixture of d'a ephalical Remedies. Again, Lignum vitæ by its heat, in the rinefs and friability, and by its Balfamical and Rofinish ore were ubstance, doth very much strengthen the Tone of the arcs, and is contrariant to some other parts of the Dif-DI, 204 ife ; yet because it helps very little the contemperation egulatin the Juyces contained in the Sanguinary Mals; but h the contrary is rather an hindrance thereunto, it :by da aut aght not without great caution to be prefcribed, and again latin a finall quantity and well corrected. Laftly, Aremain song the Simples here recited, fome are received to 15, 18 rengthen all the Spirits rather than to fubdue the Efen ince of the Difeafe, as Sage, Musk, Ambergreefe, and he like, which come not into use but when they are will by ningled with other effectual and more appropriate inte lette redients.

If any shall further demand, which among all thefe ropounded Simples are to be valued as the most noble and sign this fectual; we comprehend our Answer in these Rules. 5 10 40mm

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First, They are most noble Medicines, which joyntly nake the ftrongest opposition against most parts of the flence of the Disease.

Secondly, Those Cateris paribus are to be effected he most noble, which directly affront the Efferce of the Difease, especially if at the same time they advance the qual distribution of the Blood and Vital Spirit, whereby o many organical faults are corrected.

Thirdly, Such things as oppose the Difease most eninently by an effential contrariety, provided they be not

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not as well too ftrong for Nature as the Difeafe.

Fourthly, Those which are both repugnant to the strat Ch Difeale, and yet withall, grateful to Nature, in no wile nd boy Deet ata m offering any violence to her.

Fifthly, Thole which are molt grateful and plealing to Satura the fick Child, and fuch as administred trouble not its Horizon tch half Palate.

These things being premised, we shall now subjoyn water alion add fome examples of compound Medicines. T OTGINAT

Decostions, and Phylical Drinks.

Take the Spikes of the Roots of Ofmund the royal, Iulpitio fix in number ; Pauls-Betony, Hartstongue, Ceterach, Juli, Liverwort, Maidenhair, of each one handful; Sage and Then Rolemary Flowers, of each half a handful : imall Rai- all-Bill fins three ounces, Spanish Liquoris half an ounce, Mace thethem two scruples ; Boyl them in fix pound of Fountain-Wa- this Fla ter ; take three pound of the Decostion, and add unto it vink. three ounces of the Syrup of Maidenhair, mingle them Take S and make your Apoz m. Let the Child take a draught flates h of it every morning, another at four a Clock in the af- Palas ternoon, and a third in the night, if he then call for winnt, Drink; yea, if it please him, let him take it for his or-it them, dinary Drink. This is noft proper for those who are four ga fadly afflicted with the Rachites, complicated with a liten you cough, and an obstruction of the Lungs. the lam

Take the Leaves of Royal Olmond, Harftongue, Li- up and verwort, Ceterach, the Flowers of Tamarisk, the Roots frain in of the Male Fernbrake, of each a handful; Raifins two toitnis in ounces, white and red Sanders, Saxafras Wood, of each two lem, and drams; Coriander-Seeds one dram, Mace one scruple, fewith a Sage Leaves half a handful; boyl them in a futficient by Drin quantity of Fountain Water according to art, to three when pound ; Let the Decoction be fweetned with Sugar of Manufe Honey for ordinary Drink. This is beft for fuch whole Take m Take Liver is most afflicted.

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Take Sarfaperilla cut and beaten three ounces; the its of China cut into little pieces, two ounces: Infule d boyl them according to art in feven pound of matain Water to four and an half: then add two drams Saxafsas roots, the roots of Ofmond royal, the leaves Hartftongue, Ceterach, Maidenhair, Archangel, of ch half a handful; Spanish Liquoris two drams, we a dram : boyl them to three pound. To the DClion add Honey or Sugar three ounces. Mingle them ordinary drink: This is most conducible where there fuspition of the French-Pox, as also in Strumatical fects.

Take the Flowers of Tamaris one handful; the male inls-Betony half an handful: bruise them gently, and fuse them in two pound of Common Beer cold in a stone glass Flaggon, will slopt with a Cork for the ordinary ink.

Take Sarfaperilla eight ounces, China two ounces, fafras half an ounce, Iwory an ounce; Ofmond roy-Pauls-Belony, Hartflongue, Ceterach, Man enhair, D'imert, tops of dead Netles, of each two handfuls : t them, and bruife them according to art, and boyl them four gallons of new Ale till one be confumed ; then ten you have taken it from the fire, add another gallon the same Ale to it, and when you have added it, fir up and down with a flick, and when you have done Arain it, and when you have ftrained it, put the Inedients in a Boulting-bag, and put a piece of Iron into em, and add a bit of Leaven to it, and hang it into the e with a firing, and let the Child drink it for its ordiry Drink; fo foon as it hath drunk half of it, draw t the reft, and ftop it close in ftone Bottles for the ilds ule. TT CLARENT

Take Wins of Stall halfian ounce; Syrup of Sucrory with

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with Rhubarb two drams : let the Sick drink of it every morning for five or seven daies or longer, unless some length a loofnels of the Bowels or debility of the Stomach do admay be vife a prohibition : in which cafe, inftead of Syrup of Sucunleis cory with Rhubarb, take Syrup of dried Refes. nary Bro

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### Broths and Panadaes. Incon contract no

Take Hartftongue and Cetrach, Liverwort, Maiden- MMI; bir, Sage, of each half an handful ; the Bark of Tamainck ent ris, red Sanders, of each two drams; Put them into H latte S the Belly of a Cock-Chicken or Hen, or an old Cock. thing in Sew up the Belly, and boyl it with two ounces of them be Malaga Raifins in a sufficient quantity of Fount in- may ben Water, adding allo a sufficient quantity of pure Oatmealflower: Make your Broth, and let it be foundly boyled.

Take the roots of China cut into finall bits two ounces, Take white and medallous Sarfaperilla fliced and well beaten prake for chree ounces ; Infuse them for a night in ten pounds / place of Fountain-mater : In the morning after a gentle Mue, di bubling, strain it, and to the Decoction add Harts-grain: tongue and Pauls-Betony , of each an handful; Mace to a form half a dram; Currance an ounce : and with Mutton, Broth or Vealor a Capon, adding Oatmeal : make your Broth ac- Take No dran cording to art.

But if thinner Broths be more defired, you may boy laffering a cruft of Bread instead of the Oatmeal; and if you finch he would have it thicker, you may mingle with it the yelk should no of Eggs and grated Bread : Moreover, to help a weak make a p concoction, you may fometimes add a few spoonfuls of Taken ched , wine.

Panadaes also may be made of the same Broth Arai-wards in ned, and boyled again with grated Bread, adding at mpleafe lengthilfalo

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ength a little Butter and Sugar. The fame likewife nay be made of the Decoctions even now preferibed, inless peradventure they contain some bitter and unleafing mixture. Moreover, the Panadaes and ordiary Broths may be altered with these enfuing Powders, nd by confequence appropriated to the cure of this Afect ; if the Child defire Milk most , let them be inade n Milk ; if the Child defire it thick ; you may make it hick either with Flower, or Oatmeal; and if you mix little Saffron with it, it will be the better. But if any hing in the Powders do nauseate and offerd the taft, let hem be omitted, and substitute some other things that nay be more acceptable to the Palate.

#### Powders and Electuaries. fisch chings ("as are reduc to pouger :

Take the Roots, but rather the Buds of the male Firme rake scarce sprong out of the Earth, and dried in a shay place; the spike of Royal Osmond, of each two drams; lace, Annisecas, of each half a scruple; Saffrot half grain : make a Powder. The dole from half a fcruple o a scruple, in Milks or Posset drink, some Decoctions roth or Panadaes.

Take the medullous part of the Root of Sarfaperilla wo drams; the Roots of China one dram; the Root of affafras one scruple ; the seeds of Caraway and Coriander feach half a scruple; the Roots of the male Fernbrake, (mond royal, of each two fcruples : Mingle them and nake a Powder to be used as the former.

Take Wood-lice, or as fome Countries call them, Sows affed, first in Water, and then in u hite wine, afterards calcined in a Crucible; Bread aried as muis as u please : make them into a Powder. The dose is from alf a scruple to a scruple, either in Broth or any thing A #2 elie :

Sate an half

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elle ! In the fame manner you may if you please prepare the Livers either of Frogs or yong Ravens : We gave you the manner before.

Take of Flower of Brimftone two drams; Diarrbodon Abbatis, Diatrion fantalon, of each half a scruple ; Saffron half a grain; refined Sugar three ounces : All of them being made into very fine Pouder, make them into a Paft with a sufficient quantity of Rose-water : Dry them, and when you please you may beat them into Pouder, and give a dram of them at a time.

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Take Conferve of Red Roses one ounce and a half Conferve of the flowers of Borage ; Archangel, Sage, Rofe-NO mary, of each half an ounce; Steele prepared one dram ceeding Cinnamon, Spanish Liquoris, of each half a dram: Lask, W Saffron half a Scruple; Red Sanders a scruple: Beat fuch things ( as are reducible ) to pouder : make an E= lectuary according to art, with Syrrup of Succory with Rhubarb a sufficient quantity. Let the Sick take half a feet ; wi dram, two scruples or a dram every morning, either by ther very it felf, or in a spoonful of Poffet-Ale, or some approprifumeth th ated Syrups or elfe in Wine. a caule,

Take Conferve of Arshangel flowers one ounce; the Bloody flowers of Sage, Clove-Gilliflowers, Rofemany-flowers, Myrobalans candied in India, Citron Pills candiea, of with a L each half an ounce ; red Sanders , Cinnamon , Spanish bility to Liquoris, of each half a dram; Salt of Steel, or elfe Saffior, half a fcruple ; with a fufficient quantity of Syrup of Wormwood, make your Electuary. The dose and manner of using it is the fame with the former. ty or qua

make them into a Powder.

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### CHAP. XXXIV.

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### Remedies that correct the Symptomes.

Ome Symptomes fupervening upon this Affect, do sometimes anticipate the legitimate Method of Cure, and require a particular manner of procecding. Of this fort are the flux of the Belly, the Lask, wherewith fomewhat of a Lientery is frequently joyned; profuse sweats, laborious and painful breeding Teeth and the Tooth-ach.

The flux of the Belly doth very much follow this Afke hairt fect ; which if it perfevere for any long time , it is eieither by ther very violent, and eafily watereth the Spirits, condinne. fumeth the folid parts, manifestly puts on the nature of a caule, and as a caule indicates its own correction. At Bloody-flux rarely hapneth with this Difeafe. But a finth Lask with exulcerations in the Guts, or complicated with a Lientery is very uleful. For in respect of the dea dies, a Spin bility to the parts subservient to digestion, a Lask ; or a elle St Lyentery may cafily fupervene, but not a Bloody-flux. Yet there is a frequent concurrence of other caules; as of Spin dole and of the indigested nourishment vitious either in quantity or quality; some feaver, watchings, worms, painful breeding Teeth, &c. all which things do likewife eafily occasion a Lask, or Lyentery rather than a Bloody-flux. As for the Cure, it is partly perfected by Purgations, partly by aftringent Remedies; partly by fuch as open, CHAR and partly by fuch as ftrengthen the parts, Thefe

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These Purgers are most proper which leave behind an evident binding after evacuation; as Rhubayb, Senna, Tamarinds, Myrobalans, & c. out of which for the most part we frame a Bolus or Potions, because they are most easily swallowed under these forms. As,

Take Conferve of red Rofes half an ounce; Rombarb in Powder twelve grains; with a sufficient quantity of Syrup of Coral make a Bolus to be given in the morning.

Take of the Pulp of Timarinds one dram; Rhubarb in Powder leven grains; Sugar of Roses half a dram, with a fufficient quantity of Syrup of Quinces, make your Bolus. Inflead of this Syrup you may use Syrup of Coral or Syrup of Mint, or Syrup of Myrtles, or Syrup of Pomgranats.

Take Senna half a dram; Rhubarb one scruple; Tamarinds a dram and an half; Annifeeds bruifed ten grains: Infuse them in a sufficient quantity of fountain water: boyl them very gently: and to an ounce and an half of the Decostio, add Syrrup of dryed Refes half an ounce, mingle them together for a Potion.

Take Plantane or Succory water, or Saxifrage water, one ource; Rhubarb in powder ten grains; Syrrup Augustan. fyrrup of dryed Rofes of each two drams: Mingle them and make your Potion.

It must be observed, That a more full evacuation is fometimes requisite, namely, when the flux hath not been immoderate, or of long continuance, and in the mean time the matter offending hath been copiously collected in the Body. In which case, in lieu of the Syrrup of driei Rose, you may take some drams of fyrrup of Roses falutive, fyr. Augustan. or of Succory with Rhubarb or Muna: But commonly the tafest way, to augment the dose of Rhubarb, or else of Senna, not omitting the fyrrup of dryed Roses. In

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In the evening after the Purgation, you may administer ten grains of Diascordium boyled in wine, with Cloves, and a little Cinnamon, and mixed with a third part of Erratick Poppy water, and fome cordial Syrrups, as Syrrup of Clove-Gilliflowers to fitrengthen the Spirits and to flay the Flux; or if the Flux be stubborn, you may mingle two drams of Diaco lium for a dole inftead of the Syrrup aforefaid. Or

Take of Poffer-drink made with white-Wine, the many Curd being taken off ( aromatize it with a little Saffron tied up in a rag, crushing it gently between your Finmit gers) Confectio Alkermes one scruple; Pomgranat Pills in powder seven grains; Diatodium two drams : mix 職尊 them together to be taken when the Child is minded to fleep. Or,

Take Laudanum according to the London Dispersatory, half a grain; Migister. of Coral twelve grains; Conferve of Clove-Gilliflowers, or red Roles, one scruple, with a sufficient quantity of Syrrup of Quinces, make a ult Belus to be taken at bed-time.

If there be obstructions, you may prescribe Crosus Martis, or Salt of Steel, to be taken in the morning. As,

Take Conferve of Roles one ounce: the Roots of Succory preferved, Myrobalans preferved in India, of each half an ounce : Salt of Steel half a Scruple, or Crocus Martis one scruple : Cinnamon, Liquoris, red of been Coral, of each eighteen grains : Saffron a grain and a mean half : Syrrup of Succory without Rhubarb a sufficient quantity : make your Electuary according to art, whererrup of of let the Child take half a dram each morning. Red hor Iron may be quenched to the fame purpole in its ordinary drink. The state of a main signe to be preising Alations them.

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If the Child be troubled with a violent flux, you may give it fome binding Conferves, imagin Conferve of Sloes, and mix it with fuch things as the Child delights to eat, but in fo doing be fure you pleafe its Palat.

Sometimes a profule and exceflive fweating finds a peculiar bufinels for the Phylitian in this affect: for it very much wafts the Spirits and retards the cure of the dilease.

Yet caution must be used not to restrain it rashly, if perhaps there be a Feaver, or if any feverish fit, or immoderate heat hath gone before : For in these cases it may be upon a critical time, or at least it may bring more advantage to the Body by the mitigation of the Feaver, than damage by the loss of the Spirits. For we know not whether any thing doth more potently or indeed more sweetly expel the feaverish heat than sweating.

In the interim when it floweth inordinately and cauflefly, it argueth that the body is opprefied with obstructions, with crude juyces and unprofitable superfluities, which whilft Nature striveth to master, and to fubdue, by that very labor, (the opennels of the pores withal concurring ) it is evaporated by Iweat, and indeed an unprofitable one, very laborious and luch as wafteth the Spirits, which therefore as foon as possible must be corrected. This Hypocrates meant, where he adviseth, That that (weat which floweth away without cause, requireth purgation. For what can more commodioufly diminish and diffipate these superfluities? Again, this motion is contrary to fweating, wherefore it meriteth the preheminence among the remedies opposed to this Sympton, and feeing that it clears the way for Medicines aperient, and such as ftrengthen the skin, and move forward concoction, ( which perfect the last part of the cure ) it ought in all right to be premised before them.

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Purgative Medicines hitherto belonging, are those that are observed to be friendly, and agreeable to Nature ight and withall fuch as open obstructions, and strengthen the Bowels : all which things whither any Simple can perform fo well as Rubarb, we very much doubt. Yet all m " those Simple and Compound Medicaments proposed as othe bove in the Chapter of Remedies Electively evacuant, may, according to the Condition of the Patient, and the In Brudence of the Phyfitian, be transplanted hither. Some "im very much commend Beer in this cale medicated with ales it Rubarb.

Take Rubarb cut into many small pieces, two drams; Raifins stoned and flit, one ounce; Smal Beer, two pound ; put them into a Glass or stone flagon stopt with the best cork; fet it in a very cold place, and ftir it very often, but before you use it let it settle again, a whole day, then cating, draw out the liquor for your ordinary drink. When the d caule flagon is empty fill it again with Beer but put net in a new oblime, quantity of Rhubarb. CHINS,

Moreover, The most noble Aperients which both help concoction, and reprefs unprofitable fweating, are French Wine, and Rhenish Wine. But if there be any fear of their heat in this tender age, they may be tempered with rofted Apples, Borage, or red Rofe-water, adding a little Sugar and grated Nutmeg, let them be alfo taken in a leffer quantity and only at meals.

They are likewife the most effectual Aperients, which do not only help concoction, but allo ftrengthen the Tone of all the parts, efpecially of the Bowels. Among which we chiefly commend things made with fteel, as wine made with fteel, and the Electuary before named, and the like. Now although feel doth indeed effectually perform those things which we have faid ; yet because it doth not in all respects answer to some other scopes of great

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great moment in this affect, but doth more hurr fometimes in one particular, than it doth good in another; we thought it expedient to fubjoyn these following Cautions concerning the use thereof.

First, Seeing that Steel is an enemy to the Lungs, and doth easily ftir a cruel flux of flegmatick matter in tender Bodies, therefore you must totally abstain from the use thereof, where there is any Catharh, Cough, obstruetion of the Lungs, and much more, if there be any Inflammation, Pleurisse, Bloud-spitting, or a pronelsof disposition to any of these effects.

Secondly, Because Steel contributes little or nothing to the operation of the Blood : but on the contrary (however it may attenuate the tough and flegmatick part thereof) doth rather expedite the separation thereof from the other mass of Blood by reason of the tart quality that is predominant in it, it cannot be admitted but with circumspection, especially that inequality of the Blood being so importunate and urgent.

Thirdly, Seeing that the attenuating, cutting and opening faculty in Steel is conjoyned with an apparent and extreme driness and binding, and therefore perhaps doth more compact those humours, than diffolve and fcatter them ; the use thereof ought to be refrained , at least suspected in any confiderable Alogotrophy of the For the fear is left it should bind too close and parts. confolidate the fhort parts of the Bones and those that are too fcantily nourished; whereby afterwards they may become less prompt and apt to grow in length : but the parts flicking out (as also the convex fides of the Bones) which are liberally nourifhed it cannot diffolve, and then there may be a jealoufie that it will too much confirm them and make them flubborn ; namely by an extreme thickning and hardning of them.

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Fourthly, In all acute Feavers the use of Steel the; is hurtful, because it over-dryeth and bindeth the Can- Parts, yea, for that very regard that it restraineth Sweating, and makes the humours more fierce and hand tharp.

These Caucions being rightly observed, we admir mit the use of Steel in this Affect, but because Mountebanks blue and Quacks cannot d ftinguish between the use and the my abuse, we would not perswade any to make tryal of this tothe noble Medicine without the advice and counfel of fome prudent and knowing Phyfitian, becaule if it be not cirthing cumfpectly administred, the danger is very great. Some muy other Aperients of lefs note may ferve this fcope ; as the Roots of Succory or Borage, or Conferve of their from Flowers; the Roots of Grafs, Sparagus, Fernbrake, mainy Madder; the Leaves of Ceterach, Spleenwort, Maid but den hair, &c. Among the Compounds Species, Diatr. of the Cantal. Diarrhod. abbat. &c. Or

Take of the best Sugar three ounces, diffolve it in Rolewater and boyl it a little beyond the confiftence of nd Ca Syrup, then add Conferve of Barberies one ource; Diatri. Santal. and Diarrhod. Abbat. of each a dram : ethips powder of Saffron, one grain; mingle them and make e and your Electuary. 16 , bi

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The painful breeding and the aking of the Teeth are the familiar Symptomes of the Rachites ; and becaufe they breed Feavers, unquiernels, watchings, and other evils; they allo deserve a peculiar mitigation ; if the Tooth therefore as it is working through the Gum puts the Child to very much pain, you must without delay ( unless it were done before ) appoint some univerfal evacuation : as a Vomit, which is thought to be a potent remedy against the Tooth-ach. Now that may be moved by the only tickling of the Throat, putting 153 Print of

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in a Feather, or the Nurses Finger into the Childs mouth; or elle with rubbing the Tooth that is breaking forth with a Tobacco Leaf wrapped about the Nurfes Finger, and a little moistned with Beer ; or laftly, by giving fome vomiting draught above deferibed. But this remedy is forbidden reiteration in regard that it too much may weaken the Stomach. The day following ( the pain perfifting or returning ) fome Cathartick Potion or Bolus among those above reherfed, or like unto those must be administred. After this universal Evacuation you must descend to Topical Remedies. Nurfes are wont to rub the Gums with Coral polifhed for that purpole. But the Phyfitians do rather commend the Root of Marth Mallows, which do mollifie and loofen the Gums that they may obtain the more cafie paffage, others report it for a great fecret to rub the sking Tooth with the Root of the fhargest Sorrel. Others very much commend the rubbing of that Gum where the Tooth is coming out with a Cocks Comb newly cut off, or with the hot Bloud distilling from that Wound. We have had no experience of those things which they use to inftill into the Ears; in like manner, neither the Plaisters of Maftick, Olibanum, or red Lead, which in those of full growth are observed to Rop the Rheum. Others apply small Epilpaftick Plaifters behind the Ears, which perhaps compel back the matter that breeds the pain in the Teeth. But neither do we interpole our judgement concerning these things. Only when Universals are unavailable, we have recourse to Hypnotical Remedies, which indeed by outward application profit little, but being taken inwards they are very helpful, especially being rightly prepared and duly corrected. Therefore when want of reft and watchings beget moleftation, thus we proceed. Take

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Take Diafcordium seven grains; Syr. de Meconio, one dram and an half, or two drams; Posset Drink made of Milk and white Wine, with a little Saffron, one ounce or ten drams; mingle them and give it at Bed-1 00 rime the next night following after the Purgation. etittie

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Take Laudanum, according to the London Difpenfatory, half a grain; the Cordial Powder of the Claws The of Crabs ten grains; Conferve of Clove-gilliflowers lome one scruple, with a sufficient quantity of Syrup of Balm make a Bolus to be swallowed in the evening at fleeping time. Thus much of fuch things as correct the Symptomes. Coral

### CHAP. XXXV.

#### External Remedies.

Aying finished the Disquisition of the matter and kinds of Internal Remedies, we Thall now direct our Discourse to external Remedies. Which indeed we have referved for the last place, not because they must perpetually be last put in execution, but because they are altogether of a different kind from the internal : now the Universals are to be administred immediately after Evacuants, or at least after those that are electively Purgant, and withall with the Specifical Alterants, unto which kind they belong, although indeed as they are external, they differ from them. Now we defire that we may here be underftood by external Remedies to fignific and intend every kind ot

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of Medicament which cannot properly be referred to Chyrurgery, or those things that are inwardly taken, provided that they have their use in the Cure of this effect. regard

Therefore we divide it into two Kinds, namely, The manner of Excreise, and things externally Applicable.

#### The Manner, or Kinds of Exercife.

All kinds of Exercife, unto which Children are accuftomed, may be useful in their time and sealon. But becaute Children who are molefted with the Rachites are fomewhat averle from motion and by realon of their weaknels of Spirit, and unaccustomed use of Exercise do fcarce after the beginning of the cure, or indeed not at all endure violent motions; therefore they must begin perpetually with gentle Exercises, and afterwards proceed by degrees to ftronger; in like manner at hilt they mult continue but a fhort time, but afterwards a longer space without any intermifion.

We therefore diffinguish Exercises into gentle, and vehement or Malculine. The gentle we referr first to the manner of lying down. Secondly, To the agitation of the Body in the Cradle. Thirdly, To the carrying them about in the Nurles Arms. Fourthly, To fedentary paftimes.

First, Lying upon the Back among all the postures of the Body doth chiefly recede from Exercise, and is almost only allowable in the extreme weakness of the Spirits, as in acute Feavers when the Spirits are ipent, likewife in many cafes of the Cheft and Hypochondriacal parts, as trequently in an inflammation of the Liver, Spleen, Lungs, in a Pleurifie, in the growing of the Lungs with the Pleura, and an Imposthume, &c.

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The lying upon one fide either right or left cometh eareft to the Supine Position, and participates very litle of the Nature of Exercise. Wherefore it is also alowable in any great weakness of the Spirits, at least in egard of altering the posture of the Body, as also when a profound fleep is not expected. Moreover, it s fomewhat profitable to strong Bodies in the time of he first or fecond fleep, after just intervals full chaning fides. But afterwards pernaps it is not so agreeble unto, nor beneficial for them, especially when he Body is fully refreshed with fleep. For then that posture is best which draweth nearest to the Nature of Exercise.

The Simple Lateral Position containeth fomewhat nore of Exercise, and is inconvenient for weak Bodies and such as are not used to it in the time of profound leep: but otherwise it may be made familiar, if for a while they will accustome themselves unto it. It is atall times good for strong Bodies, provided that a due care be had to alter and vary it.

The lying on one fide towards the Belly is laborious and troublefome, and not to be continued long by firong and robultious Bodies that are not used to it. But the moleftation being overcome by cuftom, it is more eafily tolerated : and because it easeth the pains in the Head, helpeth the Coacoction of the Stomach, mitigateth the pains of the Collick; and loosneth a coflive Body, it may be sometimes useful when Nature is throughly fatisfied with fleep; and in this affect may supply the place of Exercise. For it sometimes hapneths in this Discase, that Children for some time are not without disadvantage trusted to their own Feet; yez many times they gain more by reft then walking up and down. For walking rather confirmeth than cureth the bended

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of the bended Joynes; but lying down, when the parts are ats in well iwathed, conduceth not a little to their crection. the tol Then again, lying down helpeth very much to fretch tro ; al and lengthen the fhort parts, as may be perceived by the growth of the parts in length after a Dilease. Thirdthat the ly, Lying down, in regard of the common Coverings of Allo the the whole Body, advanceth an equal dispersion of the ward up heat through all the parts. Laftly, lying down, if you one noi observe a right way of placing and making the Bed, may two laf contribute very much to correct the Crookning of the rection Back-bone and the whole Body, for when they lie upon if the H the gibbous and bunched Side, a little bag made for the same purpose may be laid under the parts flicking out, and fo made fit that the gibbous parts may in a manner drawn. ther ha fuftain the weight of the whole Body, and fo they may litting be compelled as it were to a straightnels. But when Children roul to the other fice, the Bed should be for made, that if the little Pillow or Bay be taken away the nang hollow part thould fearce touch the Bed unlefs he conform himfelf to a straight line, that by his weight it may to the g be depressed to a straightness.

Head I Secondly, That kind of exercise which is performed by the rocking of the Cradle somewhat emulates this lying Raint tec. down. The Cradles are inftained upon two Arches, or Child two parts of the Circle: now the more they have of a Circle, the more effectually they exercise the Infant. oting De not This motion in time of fleep must be intermitted, or at least remitted ; but whilst the Child waketh it must and for be sometimes intended, and sometimes remitted. It is most Watten proficable for weak Infants that can fearce ftand upon ef the aclo m their Feet, or are otherwise hindred from waking.

Thirdly, The bearing them about in the Numfes Arms is almost agreeable to the fme Children, and under profital the fame conditions : in like manner the rejoycing the Ray

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man of the Child whilst the Nurle fingeth, either as it fits in her Lap, or is held up in her Hands, as allo the tofling of it up and down, and waving of it to and fro, and if the Child be ftrong by holding it gently up by the Hands, if it be weak, under the Arms, yet fo that the Thighs and the whole Body may hang down. Alfo the drawing of the Children backward and forward upon a Bed or a Table between two Nurfes, the one holding it by a Hand, the other by a Foot. The two last motions feem to contribute fomewhat to the erection of the crooked or bended Back-bone, especially if the Hand which is laid upon the depressed Shoulder, and the Foot which is belonging to the elevated Hip be drawn with more firength and vehemence than the other hand or foot. To the fame end also tendeth the lifting up of the Child, taking him by his Feet only, fo that the trunk of his Body and his Head may for a time hang down in an inverted pofture ; although indeed this action may also feem in some manner to relate unto the growing to of the Liver, if any fuch at that time be : as allo that convolution of the Body , whereby the Head Being lowermost the Feet are listed up; and then again the Head being lifted up the whole Body is inverted. Hitherto allo may be referred that rouling of the Child, which fome use upon a Bed or Table, the Body being laterally declined : which we more approve if It be not rouled quite round about, but only backwards and forwards, laying a little hard Cuthion underneath, whereon the gibbous part may reft, and fuftain the weight of the Body. This exercise being rightly practifed doth help much to ftraighten the Body.

Fourthly, Sedentery Games and pastimes are the least profitable among all exercises for Children that have the Rachites, and indeed they are only allowable to ftill 2114

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and quiet them. But the more beneficial will be to tempt them to a frequent use of their Feet by playing some little Ball or Cat before them that they may be often kicking them. But if the Body of the Child be crookca, fuch sports must be invented as may allure him to move his body to the contrary fide. When therefore one Shoulder is higher than another hold up some Gewgaw or Rattle before the Child that he may firetch out the Hand belonging to the lowest Shoulder to reach after the offered object. But a thousand such like inventions may be found out, and we leave them to the Nurses industry.

The Masculine Exercises of greater note we reduce to these three Titles.

I. To Going. 2. To an Artificial hanging of the Pody. 3. To Friction, rubbing, and controctation of the Hjpochondries and the Abdomer.

First, Oftentation or waking may be numbred amongst the more noble Exercifes. For Children that are big and ftrong, and uled to run up and down every day ; do by walking and ftirring about, the more eafily rid away this D.fedle. But this kind of Exercise must be refused unto them whole Joynts are not knit and confirmed, and whole Ankles, Knees and Back are fo weak that they cannot fuftain the Body. For when Children by the negligence of their Nurses are too foon committed to their Feet, it eafily comes to pais, that they fuffer those Joynts to be bended either inwards or outwards, backwards or forwards, and confequently they are the occafion of that deformity which befalleth the Bodies of most men and women. Moreover, Those Children which have already contracted fuch a bending in their joynts, either by the natural weakness and loolness of the Ligaments, or by the bad usage or indiligence of their

#### [363] their Nurses must be trusted to exercise their Legs, till 細此 some splents or other instruments be provided, which lene may be able to creet the bended Joynts, and to keep them Often in an crefted pofture. The driving of Children up and CTOOKdown in their Coaches or Chariors is much to the fame OJ IBU purpole, provided that they be fo contrived, that there 0000 be no danger of fumbling or overthrowing. W23W

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Secondly, The artificial fuspension of the Body is performed by the help of an Inftrument cunningly made with Swathing-Bands, first croffing the Breft and coming under the Armpits, then about the Head and under the Chin, and then receiving the hands by two handles, so that it is a pleasure to fee the Child hanging pendulous in the Air, and moved to and fro by the Spe-Aators. This kind of Exercife is thought to be many waies conducible in this Affect, for it helpeth to reftore. the crooked Bones, to erect the bended Joynts, and to leng hen the fort Stature of the Body. Morcover, it rebig exciteth the vital Hear, and withall allureth a plentiful distribution of the Nourishmeur to the external and first affected parts : and in the mean time it is rather a pleasure then a trouble to the Child. Some that the parts may the more be fretched, hang Leaden Shooes upon the Feet, and faften weights to the Body, that the parts may the more eafily be extended to an equal length. But this exercise is only proper for those that are ftrong.

Thirdly, Fristion or rubbing may in fome manner. be likewise referred to Masculine Exercises : not inesed in respect of any active motion in the Child requifite to the administration thereof (for it is performed by an action of the Nurse rather than of the Child) but in respect of a like force and efficacy which it hath in the caring of this Affect. Now Friction feemeth to be 911 Bb

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twofold, as partly belonging to the kind of Exercife, and partly to those things which are outwardly to be applied, for which cause we have referved it unto this place, that it might be the laft in the number of the Exercises, and immediately precede the external applications, This must be done (at leaft in the Winter time) by a warm fire, the Child being in all relpects well fortified from the injuries of the weather, and the violence of the cold Ayr. Seme Nurfes administer this Friction with a hot hand, others with Linnen Cloathes dried and heated ; others with Woollen Cloathes; and others again with a little Brufh; and indeed lome do most commend the Brush, and prefers it before the other waies, but because there seemeth to be to little difference in all the wayes, we approve them all, and leave the choice to the Nurles wildom. But let them begin this Friction at the Back bone, the Child being laid upon his Belly, and let them ftir their Hands now upwards, now downwards, now on each fide, then to the Thighs, Hips, Legs, Ankles, the Soals of the Feet, and all the parts of the Body, those excepted where there is a flicking out of the Bones, and there let them rub the hollow part of them. This action must not be continued beyond a moderate ruddinels raifed in the parts, leaft the Natural heat should be scattered, rather then cherified. This kind of exercise is most agreeable to weak Children, and fuch as are fcarce able to ftand or go. For it supplieth the defect of running up and down, exciteth the Natural heat, fummoneth the Vital, and attracteth the Nourithment to the affected parts. Yet we grant, that Friction doth not fo powerfully fummon the heat and nourifhment to the Flesh of the Muscles, although perhaps it doth more to the Skin, as exercise doth properly so called, and confequently that it must yield in dignity and nature to true exercises. To Friction also belongeth that contrecta-CIOD)

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tion of the Belly, or of the Abdomen and the Hypochondries, sometimes lifting up the Bowels, fometimes depreffing them, fometimes removing them towards the right, sometimes towards the left hand, and sometimes thrufting in the tops of the Fingers under the Baftard tibs. And Phylitians hope, and not without realon, that by this action they may deliver the Liver from any preternatural growing with the Peritoneum, if any fuch thould chance to be. And here we note by the way, that fuch growing of that Bowel may cafily happen in this affect by reason of the greatness of the Liver, and the Bretching of the Hypochondriacal parts, whereupon the Peritoneum and the Membrane of the Liver are molt hearly and firifily conjoyned, and being conjoyned, may remain long in the fame Polition, and fo by the help of time they may cafily grow together. This growing toperher in as much as it dependeth (as we have faid) upon the ftretching of the Hypochondrics, and the bignels of the Liver, it may not incongruoufly be referred to the fecondary Effence of this Difeafe, namely, to the organical parts vitlated, among which it deferves to be reckoned, although above we chanced to omjt it in its proper place, and therefore we thought good to mention it here. Thus much of Exercife, now follow the External Applications.

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### CHAP. XXXVI.

## Things to be Externally Applied.

Thefe remedies (as we have faid) do not only prerequire Friction, but for the most part they are administred with a gentle Friction. Now they are either General or Universal, respecting all parts alike, or Parneular, and dedicated to certain Regions of the Body. The matter of the Universals is almost the fame with that which we have propounded above in the Chapter of Specifical Alterant Remedies: but the matter of the particulars must be diffinguished according to the variety of the Regions of the Body unto which they are applied. The forms of either kind seem to be common, and they are five in number, Liquors, Oyls, Liniments, Oyntments, Plaisters : although Plaisters are dedicated rather to certain parts, and never at once applied to the whole Body.

Liquors that have been commended by long experience in this Affect are almost all kinds of Wine; but especially Maskadine. But some do prefer the Pruisan Beer, which indeed may help much to ftrengthen and confolidate the Parts, but very little or nothing at all te effect the equation of the Blood, or an equal diffribution of it. The same judgment is also to be made of Aligant, as also of red Wine. Some instead of Wine also ordinary Aqua vite, which is believed to be sothing

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thing interior to Wine, Decoctions allo may be prepared for the fame ule. As,

Take the Roots of Royal Ofmond, the Leaves of Sase, the Flowers of Marigolas, the Leaves of Bay-tree, Pauls Betony, Hartftoigue, of each balf an bandful; Rofima y, red Rofes dried, of each ose pugil; boyl them in Fountain-Water, and ordinary Aqua vita, of each a pound, to the co fumption of the third part ; (train it, and keep for your afc. Or

Take the roots of the male Fernbrake one ownee, the leaves of royal Ofmond, Clivy, Bay-tree, Sage, Pauls Betony, of ea lo b If a b adfut, is fife them in some Wine, and kiep this fix ined l' q sor for your ufc.

But theie Liquors are feldom or never administred alone, but must be mixt with equal parts of Oyls, "Linmonts or Oyntments ; and indeed they must be used before a warm fire, and rubbed on with a hot hand till they be dry.

Compound Oyls, fuch as are approved in this Affect are very few, and those ineffectual': but there are un ny Simple Oyls, as Oyls of Earth-wornts, Chamomil, Marygold-flowers, Pau's Betony, Neats-foot Oyl, unto which you may also add Oyl of Foxes, Oyl of Whelps, Oyl o Swallows, provided that these last be prepared Simply by themfelves without any commixture of extream not ingredients.

Oyl of Exeter, alchough fome Practitioners ule ir, and though it be a little hotter then is fit to be used alone to fo tender an age 2s is troubled with this Difeafe, and for are other things which are vulgarly uled, as Oyl of Castoreum, or Facobs de Manlus, and ung. Antipar lyticis, and other Oyntments, as de Nerviro, Martia o, Aragos, aid the like. And the reason is, because such a numnels afflicts not these as it doth such as are Paralitical, not inc Bb .

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the fame Defect of Vital Spirits, nor the fame unequal distribution of nourifhment. But because this is a new Disease, if any defire Oyls, Oyntments or Liniments proper to the Eyil, let him make use of a right Method, an able Physician, a specifical way either of Oyls or Oyntments, as we shall shew you by these examples :

Take the leaves of red Sage, Betony, Pimpernel, Marygold-flowers, of each two handfuls: the roots of royal Ofmond fix ounces, May Butter three pound, white Wine half a pound : cut the Herbs, bruife the Roots, and boyl them according to art till the Wine be confirmed : Afterwards strain them being yet bot, and put to them Oyl of Nutmegs drawn by expression one onnce and an half, mingle them diligently, and after setling, casting away the dregs, make your Oyntment, which you may referve in a glass Vessel

Take the leaves of Brooklime, Chamomil, Watercreffes, garden Scurvy-Grafs, Pauls-Betony, Motherwort, Maidenhair, Hartstongue, Ceterach, Bay-leaves, the tops of Mint, red Sage, Rosemary, Ivy-berries, of cach half a handful : the Roots of royal Osmond sour ounces, Mascadel half a pound, May Butter three pound : cut the Leaves, bruise the Berries, and bail them all to the consumption of the Wine, strain it whils it is bot, and separating the pure substance from the setlings, make an Oyntment according to art. Or,

Take the leaves of red Sage, Pauls-Betony, Hartstongue, stinking Gladon, of each two bandfuls: the roots of royal Osmond six ounces, the tops of Lavender, Rosemary, Bay-'eaves, of each a bandful: common Aqua vitæ one pound, Oyl of Neats-Feet and Foxes, of each balf a pound, Deers-suel, or the suel of an Ox, Oyl of Worms, of each one pound: boyl them to the consumption of the Aqua vitæ: steain out the Oyntment whils it is hot, and miking

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fe. Fourthly, Take the green leaves of royal Ofmond fix randfuls : Pimpernel, Marygold-flowers, the leaves of ed Sage, Clary, Mother-wort, Brook-lime, Watercreffes, of each a handful : the leaves of Rofemary, Bay, of each balf a handful : chop them together very small, and beat them diligently in a Marble or Wooden-Mortar, with a wooden Peftle, with fix pound of unfalted Batter, and to 1 t them fland fourteen dayes, then melt them gently in a Bath, and as foon as they begin to be bot, frain them, and then put in a new quantity of Hirbs as b fore : at length strain and purifie your Oyntment, and keep it for occafions.

To theie general external Remedies fome particular ones relating to fome certain parts of the Body may be fub-joyned : as if the region of the Abiomen, especially the Hypocondria be ftretched, hard and fwelled, and this fretching hardnefs, and fwelling, would not yield to a Purgation though rightly administred, then you must proceed to Local Remedies : As,

Take Oyl of Capers, Wormwood, Elder, of each one ounce : of the general Oyntment first described, one ounce and an ball; mingle them, and make a Liniment.

Or,

Take Oyntment of the opening juyces, Foefins three ounces, the first general Oyntment two ounces ; mix them together. and make them one Oyatment : allo Oyl of Saxafrage made of a manifold infusion, and boyling of the bruised Herb in common Oyl is much to be commended to be mixed with it.

In the time of using it, this and the like Liniments ce Unguents may be mingled for penetration-fake with fome appropriate liquor : As, Take

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Take the flowers of Elder, the flowers of red Sage, Baybernies bruised, white Sanders flightly beaten to powder, of each two drams; white Wine two pound, steep them for three dayes is a cold place in a glass Kessel accurately stopt with Cork, and shake it twice a day: when you use it strain as much as will scrue your present occasio; then stop your Vessel again. Or, if you defire a stronger;

Take the roots of white Briony well dryed and fliced, B y-berries, Goof dung, of cach two drams: Cumminfeeas one dram: the leaves of red Sage, the flowers of Elder, of each one pugil; boil them in one pound and a balf of Rhemish-w ne to a pound; keep the Decostion in a cold place diligen ly flopped.

The'e and the like Liquors mingled with the Oyntment, and heated at the fire, mult be rubbed upon the Abdomen, and effectially the Hypochondries, even to drinefs. Let the Nurfe alfo having well warmed her hands, handle those parts gently, fometimes preffing the Bowels upwards, fometimes downwards, fometimes to the right hand, and fometimes to the left, according to our former Directions.

The most gallant thing of all is the Ballom of Tolu mixed with any Oyntment or Plasser, and so applied to the Region of the Back either in form of an Oyntment or Plasser.

PLifters alfo feem to contribute fomething. As T

Take three ounces of Ceratum fastalianm; Gum Ammoniacum diffolved in Rhonifb-Wine, or in fome other meettated wing above deferibed, purified and boyled again to a thickneffe, one ounse e make your Plaifler according to art. Spread part of this upon Leather, and lay is upon the right Hyperbond 9, or elfe the left, if the hordnefs be there most fenfible, which indeed is very feldom. Or

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Take the Juyces of Brooklime, Watercreifes, Garden? Souroygrafs, Wormwood, the bark of Elder, the roots of the male Fernbrake, of each one ounce: Let the Juyces be purified with a gentle beat, and being extracted, reduce them to a thick body, then add one dram and an half of Mace, and two drams of yellow Sanders in powder.

Take of this Mixture one ounce and an half: Gum Ammoniack diffolued in Wine, and boyled to a body four ounces. Minghe them hot, and ftir them continually till they begin to wax cool and hard, and make a Plaister to be applied as the former.

Morcover, when the Lungs are ill affected, many times a peculiar pectoral Plaister is very uleful. As

The Oyl of Violets, white Lillies, and the Oyntment of Orange flowers, of each one ounce: Mingle them and make a Liniment to be rubbed with a hot band upon the Breft, laying a Lawn Paper over it lined with Wooll or linnen cloth. To this Liniment you may add a small quantity of Natural Balfom. Or

Take two ounces of unguent. Pectorale ; an ounce and an half of simple Oyntment of Liquoris : one ounce of Oyl of Violets. Mingle them and make a Liniment to be used after the same manaer.

The Oyntment of Liquoris is thus made.

Fake new and Faicy Liquoris four ounces: new unfalt d Butter washt in Rose-water one pound : slice the Liquoris, and beat it well with the Butter is a stone Mortar, esterwards fry them, then strain and squeeze them, and r peas the same labor thrice with a new quantity of Liquorist

Again, Some Plaisters may be prepared proper against the weakness of the Back, which very frequently hapneth in this Affect. In the Shops you may have the Plister of B.tony and Diacalcitheos, unto which nevertheless

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Verthelels when you use them, you must add Mastich and Olibanum in powder, of each half a dram: the Plaister also which is called Flos Unguentum may hither be referred, provided that you omit the Camphire, in like manner also Emplastrum Nervi um. Or

Take two ounces of the first general Oyatment, five of the Herbs that are contained in that Composition, out and chapped very small, yellow max four ounces, the purch Rosin eight ounces: the Oyatment, Rosin and wax being melted, and the Herbs, and according to art make a Plaister. Or

Take fifteen ounces of the third general Oyntment, Litharge of Gold beaten small and fifted nine ounces; boyl them together, continually stirring them to the consistence of a Plaister; then add Wax, Burgundy-Pitch, of each three ounces; Oyl of Nutmegs by expression three drams; Mastich, Olibanum, Mirrh, of each one dram and an half; Castorium half a dram, white Vitriol in powder half an ounce; make your Plaister according to art.

The Practitioners in Phyfick differ in the Figure, and about the Application of these Plaisters. Sone chuse a longish and narrow Figure, and apply it according to the length of the Back-bone. Others approve a broa-

difh and almost fuch as you fee tend it from the upon the Os fautmost end therelower parts of the fo the Knees and those parts which from the lower triangular Figure, here, and they ex-Loyns downward crum, even to the of. But when the Back-bone, as al-Legs, namely, borrow their nervs part of the Spine, Inli

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are weaker than the Superior, we do not judge this later to be a convenient form; but when the upper parts of the Back-bone feem to be the weaker, we suppose the former longish form to be the more agreeable.

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In like manner, some commend : Liniment for the weaknels of the Back-bone which confifteth of Jelly of Harts-born, made with such things as strengthen the Sinews. rading the Flowers of Sage, and the Roots of our Ladics-Seal. In the time of anointing, mingle therewith a little Oyl of Nutmegs by expression, or Oyl of worms, or Manse Grease. And thus much of external Remedice.

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