

A rational practice of chyrurgery: or, chyrurgical observations resolved according to the solid fundamentals of true philosophy ... In five decades ... / [Jan Muys].

Contributors

Muys, Jan, 1654-
J. W., active 17th century

Publication/Creation

London : Printed by F. Collins for Sam. Crouch, 1686.

Persistent URL

<https://wellcomecollection.org/works/j4gamwne>

License and attribution

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>





PRACTICE
OF
CHYRURGERY
—
J. MUYS.



1686







~~XII~~ X

XVIII

The Library of the
Wellcome Institute for
the History of Medicine

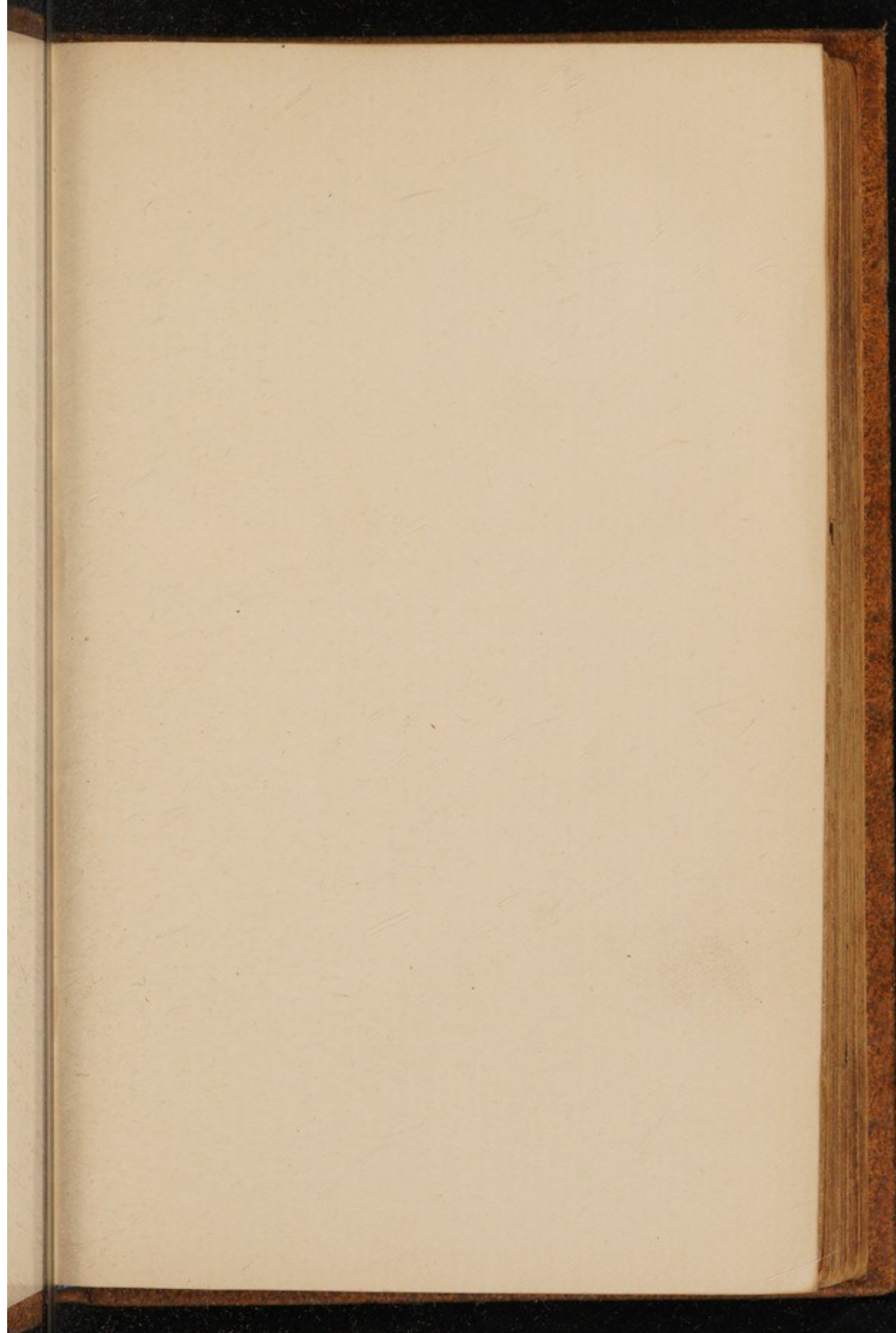
MEDICAL SOCIETY
OF LONDON

Accession Number

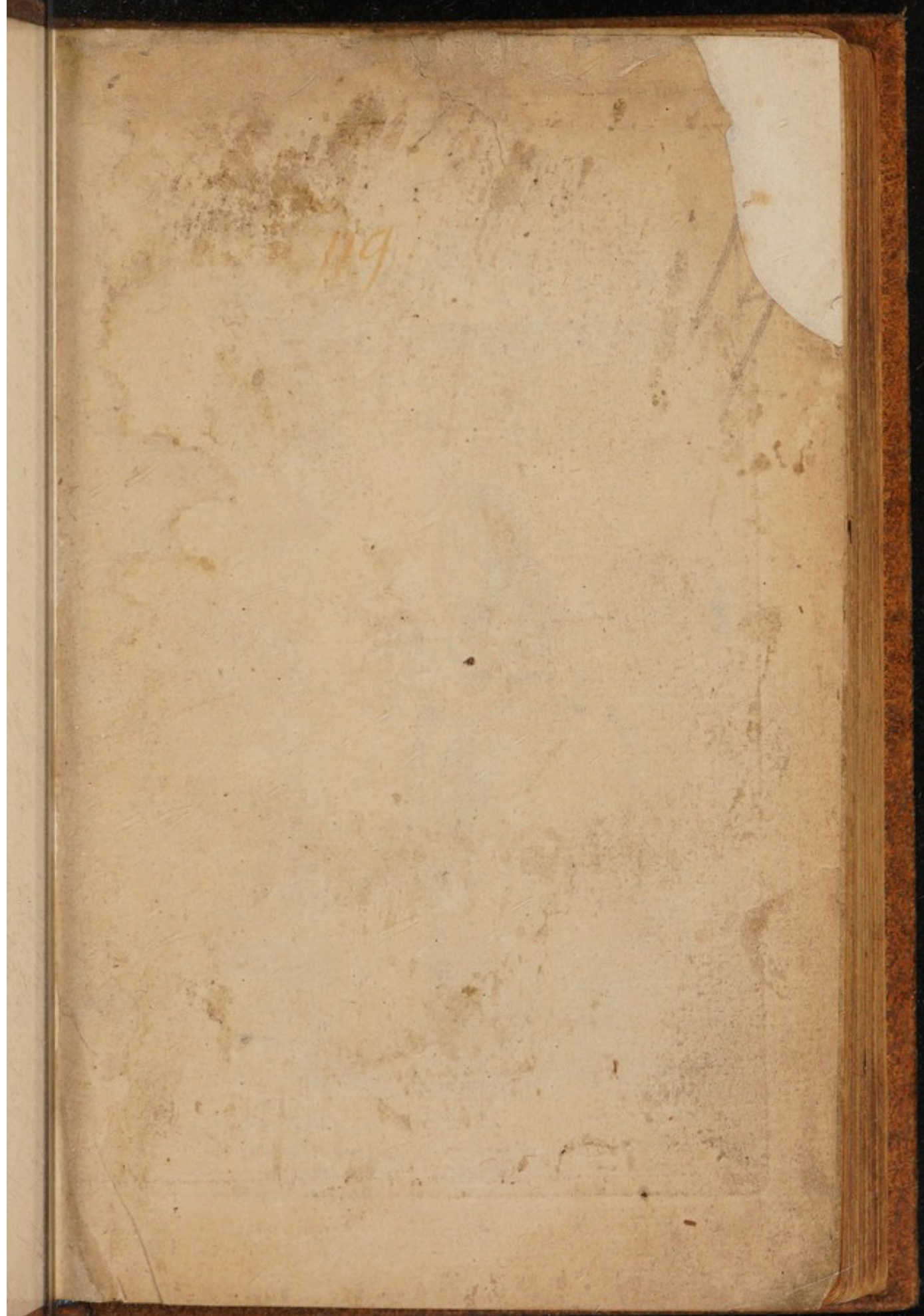
Press Mark

MUYS, J.

65615/A



XVIII 6





*The Spirit Divine is an Alkalý Stout
which Conquers the D— the World throughout*

A
RATIONAL PRACTICE
OF
Chyrurgery :

OR,
Chyrurgical Observations

Resolved according to the
Solid FUNDAMENTALS
OF TRUE
PHILOSOPHY.

By *JOHN MUYTS*, Doctor of
Physick in ARNHEIM.

In Five DECADES.

LICENSED,

Novemb. 12, 1685.

Rob. Midgley.

L O N D O N :

Printed by *F. Collins* for *Sam. Crouch*, at the
Flower-de-Luce at the Corner of *Popes-*
head-Alley in *Cornhil.* 1686.

LONDON MEDICAL SOCIETY

J. J. J.

1843

R

T

ling
Gent
could
Dre
form
Real
Latin
of pe
harm
it hat
good
been
World

Ba
a
s

TO THE
READER.

Courteous Reader,

THe following Treatise of *Chyrurgick Observations* coming casually to my hand, and finding it pathetical to what my proper Genius hath of late years led me to, I could not let it pass without an *English Dress*, that thereby all those that are born with a Genius fit to understand Reason (though not instructed in the Latine Tongue) may have the advantage of perusing the Judgement of another harmoniously concurring with theirs. For it hath not seldom happened that many good Apprehensions of things have been quickned, and Midwifed into the World by such *Publications* as these of

To the Reader.

our Author, which (otherwise) would never have seen the Light; but have died and perished with the Womb in which they were conceived.

That the following *Observations* are (in my Judgement) likely to prove serviceable to my Native Country, appears plainly by this my Undertaking: For I doubt not, but that (after perusal) they will be found Consonant to the Reason and Experience of every Rational, Unbyassed and Unprejudiced Chyrurgeon; but more especially to such, the Foundation of whose Practice is grounded upon Reason and Experience onely; not upon a Parrot-like, Emperical, and Pore-blind Doctrine.

In Phyfick and Chyrurgy the Case is the same, as in Divinity. For there are some whose Faith is so streight-laced, that if you ask them the Grounds thereof, their Answer will be; They believe as the Church believes; and so there's an end of the Argument. But
others;

To the Reader.

others there are who are not contented with this Implicite Faith, their Religion being grounded on right Reason and Experience. Such is the true Chyrurgeon, that maketh not the least Application to any part or Member of the Body, but can give a Reason Anatomically (or distinctly) why and wherefore he doth the same: otherwise he deserves not so much as the Name of a Surgeon.

But that this Author was a true *Medico-Chyrurgeon*, is plainly apparent by his curiously delineated Observations, which (I am sure) are neither obscure nor dark to the Ingenious. For his highly-to-be-commended Doctrine of the power of *Alcalies* over *Acidums*, is of so great use and energy, that all Ingenious Practitioners will confess (if they have made any Observations on their own Practice) that there is no Dolour whatsoever, incident to the Body of Man, that hath been by them subdued, but the Remedy thereof hath been of an Alcalic-nature; it being

To the Reader.

apparent to all genuine Artists, that Diseases generally take beginning from Darknes, Anger, Terrour, or Madnes, from which all *Acidums* do arise; and that the onely means for pacifying these Furies are Light, Sweet, Soft, Smooth and Friendly Medicaments, the Nature of which is comprised under that general Word *Alcali*.

All that I know the Artist hath to do, is in the first place to consider and learn what those things are which fall under his Observation, that are more con-
less of an Alcalizate Nature; and secondly, to understand their Power and Operation on *Acidums*; that thence he may be ascertained of their true Mixtion and Dose: as in case of the *Loadstone*, a piece of a Pound weight which is capable to draw and hold fast a piece of Iron of an Ounce or two, but not of a Pound or two. Even so Errours often happen, not so much in the Medicine it self, as in the mis-application of the same either in Quality or in Dose. Thirdly

To the Reader.

Thirdly, he should consider the Patient or Accident, or both; for *Acidums* are of divers natures, and therefore require *Alcalies* equally differing for their subversion.

In the last place he should likewise consider how to eschew and relinquish all such things as promote Acidity, and excite Anguish, as generally do *Catharticks* too frequently used, Tents and Dorfils in Wounds, making of large Orifices in Imposthumes, subjecting Wounds and Ulcers to the Air, and all sorts of unctuous Medicines.

More might here be added, but to avoid Prolixity I forbear, least the entrance prove too large for the House, concluding with the Authors Apology for what I have done; onely adding that golden Saying of *Van Helmont*.

Whatsoever thou wouldest do to the Sick, do first to thy self, and in thy Medicine separate the Pure from the Impure;
by

To the Reader.

*by which means thou art made a fit Agent
for the Administration of those peculiar
Gifts and Endowments of Healing, grante
ted onely to them that are Alchalizated
to the Fear of God : Which that we may
all be, is the hearty Prayer of thy read
Friend,*

J. W.

The

THE
AUTHOR'S
PREFACE.

IN the solid Judgment of a generous Mind, all the Goods of Fortune are out-weighed by Truth, which is the true Food of the Soul; which, though most sweet, and an hundred times tasted of, yet never creates any loathing, as Corporeal Foods are wont to do; which the sweeter they are, the sooner (if often eaten) prove displeasing to the Palat.

He that buys Venison of another, and eats the same well and delicately drest, doth (I confess) conceive and find in his mind a certain Pleasure and Delight. But he who exerciseth Hunting himself, follows, pursues, and at length takes an Hart, Boar, Hare, or other Wild Beast, he is not onely de-

The Author's Preface.

delighted, in eating of the same well dressed; but also (and indeed more especially) is filled with very great pleasure, whilst he follows the flying Beast, and (after various labours and difficulties overcome) takes the same.

Even so the matter is with Truth, which indeed (when tasted) is savoury and grateful to him who receives the same from another; but he who employs himself in pursuit of Verity, and in his pursuit at length takes the same, must needs be filled with greater pleasure in his pursuing and taking it, than when he feeds upon it.

He who would rightly exercise this hunting of Verity, he ought by serious Meditation, and an attent Obedience to pure Reason, apply to the Chase, and warily follow and take the same by Experience. If any Physical or Medicinal Verities (by me pursued) in all these Five Decades, have fallen into my Nets, I must needs freely acknowledge them to be obtained by the means aforesaid.

*In the four first Treatises I chiefly speak of Simple Cases; but in the Fifth Decade I proceed to Histories of Affects more
compoun-*

The Author's Preface.

compounded. For it seemed good to me thus to make progression; as in Arithmetick we begin with the number of Unity, and so are devolved to Numbers very much compounded. After the same manner in the Mathematick Science, we begin with a Point, and then proceed to a Circle, Triangle, and other Figures.

How compounded and perilous those Cases are, which I have treated of in the Fifth Decade, and how badly they are (for the most part) handled by others, I forbear here to mention, entirely leaving the censure of this matter to the well-meaning Reader.

But I already seem to hear some of my intimate friends saying to me; Friend, why do you proceed thus in Writing? Cease, forbear, and bid adieu to your Studies, by which you can scarcely effect any thing, except it be very great molestation to your self, from Physicians, Chyrurgeons, and others.

To these I answer: I have not written to satisfie others; for I judge that to be wholly impossible, seeing the Sacred Volumes which were written by the Instinct
of

The Author's Preface.

of GOD himself, are traduced by several Impious and wicked men; which way then shall I that am a mere man, and judge nothing that is Humane alien from my self, be able to expose any thing to publick view, which shall please, content, and satisfie all?

From what motive then am I induced thus to write? I answer: I had attained to the Degree of Doctor in Medicine, and was sometimes sent for to Sick Persons; and, notwithstanding this, in the mean while, I was conscious to my self with how great Prejudices and Ignorance in the Medicinal Science my Mind was affected; I was ignorant of many things, and doubted of more. My tender Conscience daily suggested these Words to me: Either wholly reject the Medicinal Practice, or with all thy might drive from thee thy own Ignorance, Either one or the other must be done, if thou intendest to enjoy Tranquility of Mind. What could I do, being constituted in such a Labirynth? I turned over and perused the Books of ancient Physicians, but there found very little that could satisfie my Mind coveting true knowledge.

The Author's Preface.

ledge. I familiarly discoursed with the Chyrurgeons of this Age; but from them I reaped little or no benefit; for they either could not or would not instruct me. Therefore, urged by extream necessity, I was compelled my self to dissipate the Clouds of my own Mind, remove the Prejudices, with which I was blinded, and become my own Instructor. And this Instruction of my self is onely by me here proposed in my Writing. This is what according to my Wish I have obtained. No other thing did I promise my self before, nor do I at this time expect any other.

Wherefore let the Malevolent abstain from their Calumnies, with which (without cause) they endeavour to blast my Repute. I hurt no man, I offend no man, I teach my self, I learn of my self, I am Teacher and Learner in the same person, I am Teacher and Learner of my self. If I be a Physician, it is lawful for me to heal my own Diseases; and by consequence also my Ignorance and Prejudices, which are Diseases of the Mind sufficiently perilous, and had already taken so deep root in my Mind, as it would be great imprudence longer to defer the Eradication of them.

There-

The Author's Preface.

Therefore take in good part these Five Decades of Chyrurgic Observations, which (if G O D permit) shall hereafter be followed with more.

Well-meaning Reader, Thine

John Muys.

ADVERTISEMENT S.

A *Physical Dictionary*, in which all the Terms relating either to Anatomy, Chyrurgery, Pharmacy, or Chymistry are very accurately explained. By *Stephen Blanchard M. D.* and Physick Professor at *Middleburg in Zeeland.* Price 2 s. 6 d.

Youths Introduction to Trade: Shewing them the way of Contracting and *Writing Short* most English Words; Of making Receipts, Releases, Bills of Debt, and Bills of Parcels, incident to most Trades; with Forms of Apprentices Letters, in answer to Country - Chapmen on several occasions; with an Appendix of Arithmetical Questions, very useful and necessary for a Scholars Practice, by which they will be enabled to apply their *Writing* and *Arithmetick* to business when they come to serve their Masters, either as Merchants, Shop-keepers, or other inferiour Trades. By *John Ayres.* Price 1 s. Both Printed for *S. Crouch* at the *Flower-de-Luce* in *Cornhil.*

The CONTENTS.

DECADE I.

O <i>F an Ophthalmy induced by a Fungus.</i>	I
<i>Of the use of an Issue, and its way of O-</i> <i>perating.</i>	6
<i>Of a Gangrene.</i>	12
<i>Of a Sphacelus of the Foot.</i>	16
<i>Of an Erysipelas of the Leg.</i>	21
<i>Of Varicous Ulcers of the Legs.</i>	23
<i>Of a Wound of the Eye.</i>	34
<i>Of a Suppurated Tumor and Rotenneß of the</i> <i>Bone.</i>	48
<i>Of a Fracture of the Shin-bone.</i>	61
<i>Of a Dislocation of the Shoulder.</i>	65.

DECADE II.

<i>Of the Puncture of a Nerve.</i>	70
<i>Of Dolour of the Head</i>	75
<i>Of the Contracture of a Tendon, after a Fracture</i> <i>of the Shoulder-bone.</i>	80
<i>Of a Vein cut.</i>	83
<i>Of the cracking of a Tendon.</i>	88
<i>Of an Hemorrhagia, from a varicous Ulcer of</i> <i>the Tibia.</i>	90
<i>Of a vast Contusion of the Arm.</i>	92
<i>Of a Ganglion in the Hand.</i>	98
<i>Of a movable round Tumor of the Lower-lip.</i>	100
<i>Of an affect of the Mouth, vulgarly called De</i> <i>Water-Kanker.</i>	103.

DECADE III.

<i>Of a Coadnate Tumor of the Forehead.</i>	108
<i>Of an Ulcer with Rottenneß of the Bone.</i>	112
<i>Of a Wound of the Leg inflicted by Gunshot.</i>	118
<i>Of</i>	

The Contents.

<i>Of a very strange Ulcer.</i>	123
<i>Of a vast Tumor of the Neck.</i>	128
<i>Of a wonderful Abscess.</i>	130
<i>Of a small Stone contained in the Urinary Passage.</i>	133
<i>Of an hard Tumor of the Abdomen.</i>	138
<i>Of the Scurvey.</i>	140.

DECADE IV.

<i>Concerning the Indisposition of the Gum</i>	144
<i>Of an Ambustion.</i>	147
<i>Of the Hernia.</i>	151
<i>Of a Suppurated Tumor of the Breast.</i>	157
<i>Of an hard Tumor of the Breast dissolved.</i>	159
<i>Of a very great Tumor of the Abdomen.</i>	161
<i>Of a Bleeding Teat.</i>	163
<i>Of an exceeding great dolour of the Ear.</i>	165
<i>Of the Cubit displaced by Relaxation of the Ligaments.</i>	168
<i>Of a Gonorrhœa contracted from impure Contact.</i>	171.

DECADE V.

<i>Of a Wound of the Head.</i>	175
<i>Of a Wound penetrating the Thorax.</i>	191
<i>Of a penetrating Wound of the Abdomen.</i>	205
<i>Of an Artery of the Arm wounded.</i>	218
<i>Of a Fracture of the Tibia with a Wound.</i>	222
<i>Of a Dislocation of the Talus, or Ankle-bone, with a Wound.</i>	232
<i>Of a Nose hurt by Winters Cold.</i>	237
<i>Of an Atrophica, Imbecillity of Motion, and an Algor of the Arm.</i>	241
<i>Of the Uvula and Tonsils evilly disposed.</i>	244
<i>Of an Hair-Lip.</i>	246.

Decade

John Muys

His Rational Practice of SURGERY.

OBSERVATION I.

Of an Ophthalmy induced by a Fungus.

IN the year 1680, on the first day of *August*, a Boy about Twelve years of Age, playing with another, received into his Eyes (through the hollow stalk of a Mully-puff or Fuz-ball, which in the Dutch Idiom is called *een boevyst*) a Fume or Dust blown by that other Boy, by which in less than Two hours space his Eye-lids were so swelled, that he could not open his Eyes. His Eyes waxed red all o-
B ver,

ver, no otherwise than as if they had been covered with a red Cloth, and so coloured did the interior Superficies of his Eye-lids also appear; which Symptoms were attended with very great dolour. The Patient neglected the use of Remedies for two days, and in the meanwhile the aforesaid Symptoms increased; and besides these, there was a continual Flux of sharp Tears.

A thing to be admired indeed, and which I cannot call to mind I have any where read of. But which way could that Fume excite such horrid *Phænomena's*? *Answer*, Thus: The Stalk being hollow within, and perforated onely with a very small hole, and also outwardly compressed on every side by the Boys hand, the more volatile and less cohering Particles, were forced from within outward; but seeing all those could not at once pass out together, the one urged the other, and so were driven out far more swiftly: No otherwise than as we see Water forced out of a Syringe, though the *Pistil* be but gently (or very slowly) thrust forwards: or as we discern by an easie compression of the sides of Bellows, the Air through the Pipe (or Nose) thereof is driven out with very great force.

But some one may perhaps ask me, of what nature those dusty Particles are?

To

To him I answer, They are *Accido-corrosive*, and sharply cutting. That such Acid-Particles are in this Stalk is sufficiently evident, by the frequent use thereof in stopping Blood. For when a small part of this Stalk is put into a sanguiferous Vessel wounded, the Blood is stayed, partly by reason of the stringy Particles folded one within the other, and closing the Orifice of the open Vessel; and partly by reason of the Acid-Particles of that hollow Stalk, which coagulate the Blood, as Milk is coagulated by an Acididity infused.

Therefore these Acid-Particles, with great force driven through the aforesaid Stalk, deeply penetrated into the Pores of the Eyes, and interior-Superficies of the Eye-lids; and so, with their cutting sides excited the Nervous Fibres (there dispersed) to a motion more vehement; by which Vehemency the Mind first perceived the sense of pain, which was augmented by that Distention, which took beginning thus: The Pores being obstructed by the Particles of that Stalk, the Vapours wanted their natural Exit, and so were collected within the small Pipes of the Membranes in the form of *Humour*, which in a very short time waxed sowre, by reason of the Acid-particles of the said Stalk, acting as a Ferment, no otherwise than as we see any sowre Ferment

(taken in a small quantity) to convert: great mass of Dough into its own Nature.

These Acid-Particles (I say) with the acuteness of their sides, forcibly striking upon the Nervous-Fibres, drew to those parts a more copious influx of Animal Spirits than usual; whence arose certain slight Contractions, which notwithstanding proved sufficient in some measure, to impede the Circulation of the Blood and Humours, circulating through the small Veins of those circulating parts. For these were, in this case, helped by the Vapours within the Veins of those parts converted into Water.

When the Blood contained in the Capillary Vessels, and the Humours in the Veins were thus stagnized, they likewise (in the aforesaid manner) waxed slow and were coagulated, and by that means rendered more unapt for Circulation. Hence it is sufficiently manifest, whence the Redness and Tumour of the Eyes and Eyelids had their Original.

But whence proceeded that continual efflux of sharp Tears? From the aforesaid the true cause thereof is easily gathered and it is thus. Certain Acid-Particles, forced from within that hollow Stalk, have entered the Pores of the *Glandules* and *Lachrymal Vessels*, and there, by their irritation

tion, exciting certain Convulsions, did continually force out Tears: But whence were they imbibed with a more than usual sharpness? There is no mortal Man, who (by the taste onely) finds not Tears to be Saline; wherefore these, in their passage with the acid Particles there inherent, were invaded with a certain sudden Effervescency.

These things being by me for some small time considered of, I soon ceased to admire that that Fume should be the cause of so great Evils thence ensuing; and also at that time discerned, that the Cure would not be difficult: For I knew that hot Milk coagulated by an Acidity, if digested with some fit Salt, would again be dissolved in the space of one hour. Likewise I knew Vinegar was easily deprived of its sharpness, by infusing *Crabs-Eyes* or *Lithargyry* therein: Also I understood the reason of that Effervescency which is excited by commixion of the Saline Oyl of *Tartar* with the Acid Oyl of *Vitriol*.

Hence I concluded, that the Bloud coagulated by Acidity, might again be made fluid, and the sowreness tempered by *Crabs-Eyes*, *Lithargyry*, and many other Medicines containing much Salt; such are *White-Vitriol*, *Gum Ammoniac*, *Sagapenum*, *Gambanum*, &c.

Therefore I (being called the third day
B 3 after

after the Boy was hurt) instilled hot into his Eyes some Drops of a certain *Collyrium* compounded of *White-Vitriol*, and other things mixt with convenient Waters; and upon the Eye I applied a Plaister of *Gum Ammoniac*, *Galbanum*, *Sagapenum*, *Lithargyry* &c. spread upon a Linnen-cloth. This I changed daily twice, and commanded the Boy should be kept in a dark place; by which means, in the space of two Weeks he recovered his pristine Sanity.

OBSERVAT. II.

Of the use of an Issue, and its way of Operating.

A Young Maid Thirteen years of age, had for several years been afflicted with dolour and redness of her Eyes, and tumour of her Eye-lids, which (after sleep) were closed together by a viscous Humour, concreted into a Rosin-like matter. This *Ophthalmy*, for a long tract of time, was attempted to be cured by two Surgeons, but not overcome.

I being afterwards sent for, judged the cause of the Disease to be the too great Acidity

acidity of the Blood, and a Ferment of the same nature produced from that Blood, and firmly inherent in the Pores of the Eyes and Eye-lids, there causing the Blood in the Capillary Vessels, and the Humours in the small Veins, to become too acid, and be coagulated and stagnized: For from these few signs it was not difficult to judge of the aforesaid apparent Symptoms.

Moreover, I firmly perswaded my self that the Maid might soon be cured, provided that Acidity could be tempered and expelled by the Pores of the Eyes and Eye-lids, and that acid Blood purged out of the Body; wherefore I used a *Collyrium*, consisting of Medicaments containing much Salt, and besides that applied to the Eyes a Plaister made of like things.

But I did little good by this method; for, so soon as any part of that Ferment was rendered temperate and cast out, shortly after a new Ferment, arising from the Blood, succeeded in place of the former: Seeing this, I for several weeks purg'd the maid twice a week, but in vain: At length I found the Assertion of the famous *Silvius*, which is written in the first Book of his *Praxis*, Chap. 2. in the 26 Section, to be most true, *viz.* That there are scarcely any purging Remedies (at least known to us) which can purge out acid Humours from the Blood.

Finding the matter thus, I judged it high time to betake my self to the searching out of better Remedies; and whilst I was occupied in consideration thereof, the following Experiment came seasonably into my mind, and it is this:

When you have a Compound of Water and Oyl mixt, and would separate the one from the other, proceed thus. If you would have the Oyl to pass through a Filter of Paper, the Water remaining in the Filter, you must first anoint the Paper with Oyl; but if you would filter the Water onely, and have the Oyl remain in the Paper, then you must first well moisten the Paper with Water.

But what is the cause of this *Phænomenon*? The Pores in Oyl are otherwise figured than in Water; therefore that most subtile matter of the World, which flows through the branched particles of the Oyl, much differs from that which passeth through the moist and smooth particles of the Water. Suppose to your self Water put into Paper first imbibed with Oyl, and you will easily discern that the same must necessarily be debarred entrance, by that most subtile matter, proceeding from the Oyl contained in the Pores of the Paper, and not able to enter through the Pores of the Water (otherwise disposed) as also by the most subtile matter of the Water

ter unable to enter the Pores of the Oyl inherent in the Paper. But if Oyl hasten to pass through Paper, before moistned with Oyl, then the most subtile matter of either of them holds parallel, and what passeth out from one part, enters through another, and on the contrary. So Oyl approacheth to Paper anointed with Oyl, and is filtred through it; and if it happen that any aqueous Particles poured in should in any measure obstruct this Filtration, they must be removed to the sides, and so taken away.

Often pondering this Experiment in my mind, and the reason thereof, I at length cut a small Wound (called a *Fontinel* or *Issue*) in the sick Maids Arm, and kept it open by a Pea put in and daily renewed; and by this means many Humours freely circulating through the Veins of the Arms, by reason of those passages interrupted by the Wound made, concentrated in that Issue, were changed into *Pus*, and by long staying there waxed acid, and like a sower Ferment infected the Pores of the Veins nigh to the Issue.

Therefore, whensoever certain bitter, sweet, or other Particles of the Bloud, endeavoured to enter the aforesaid passages, the Pores of which were filled with that acid Ferment, they were repelled by a most subtile Matter, every way unlike themselves,

selves, no otherwise than as in the above-recited Experiment, we have even now explained; but when the acid Particles of the Bloud approached, they had access without repulse, and entred the passages nigh the Issue, which were before infected with the acid Ferment; but if Particles of another nature intruded themselves, they were repelled by the same most subtile Matter, which admitted the acid Particles (like it self) to enter those passages imbued with Acidity; no otherwise than as one Magnet is seen to approach to another, by reason of particular Rays, which proceeding from one Magnet, enter the other without impediment, and so exclude all intermediate Air.

By this means I happily effected that, which I had before in vain attempted by *Catharticks*. For the Bloud was daily disburthened of a large quantity of Acidity by the Issue; and this Evacuation the better succeeded, because what was in the mean time externally applied, rendred the acid Ferment more temperate, and attracted it through the Pores of the Eyes and Eye-lids, which (being too much enlarged and distorted) were again restored to their natural state by gentle Astringents. This last work I effected with a *Cataplasm*, prepared onely of *Wild-Tansy* or *Silver-weed*, boiled unto softness in Water.

For

[11]

For this Herb contains in it self much volatile Salt, which first evaporating from the *Cataplasm*, did temperate the acid Ferment, and attract it through the Pores; but the more gross and astringent Particles which (besides its volatile Salt) this Herb possesseth, came forth last, and being gently Astringent, closed the Pores of the Eyes and Eye-lids as was fit; almost after the same manner as we see Cinnamon and Nutmeg in a *Diarrhæa*, by their volatile and aromatick Salt, first to temperate and extract from the Pores of the Bowels, the acid and irritating Ferment; and afterward, by their more gross Particles, with gentle force to constringe the (too much dilated) Pores of the Bowels and Vessels.

Thus this young Maid, within one month after her Issue was made, recovered her pristine state of health, and so remains to this day. After this Maids Cure was in this manner compleated, I cured many others according to my wish.

OBSER-

OBSERVAT. III.

Of a Gangrene.

IN the year 1680, September 7. A Woman Sixty years of age was suddenly afflicted in her Back, Breast, and left Arm, with many Blisters rising, containing a limpid Water, and very painful; yet in the mean while she could eat well, and was not sensible of any internal dolour. Therefore she neglected Remedies for two days, which being elapsed I was called. Then I opened the Blisters, and found the subjacent Skin and Flesh black and gangrenate.

For that very acid and corrosive Ferment lay hid unmoved, and indeed very deep within the Pores of those parts; and whilst it lay so unmoved it could infer no dolour, because pain is excited by motion of the Fibres of the Nerves more than usual; and the Body being unmoved, another part cannot move.

But when that acid corrosive Ferment was expelled from its own Pores, by the Humours (issuing from the Pores of the Arteries)

Arteries, and circulating through the Veins of the Parts) very great dolour was suddenly excited, and the Humours circulating were speedily coagulated, and by that Ferment changed into a corrosive Acidity.

Now, the more slippery, flexible, and smaller Particles of those coagulated Humours, were (by the Humours following them) driven up to the Superficies of the external *Cutis*, which (because the Pores were constricted by the cold Air) they could not penetrate, therefore elevated the same on high in form of Blisters; but the more gross, more acid, and more ponderous Particles remained in the bottom, and so corroded the small Fibres of those parts, that the circulating Humours could no more enter into them; and hence the Gangrene of those parts took beginning.

It being now obvious to me, that the aforesaid corrosive Acidity was peccant in this case, I could readily conclude what Remedies were fit to be applyed, viz. Such as I had known to render like Acidities more temperate: And, because I knew that Spirit of Nitre, and the Acidity of Salt, would wax sweet by Spirit of Wine adjoyned, therefore I made a *Lavament* of Spirit of Wine, to which I added *Lethargyry*, *Crabs-eyes*, *Spirit of Scurvy-grass*, *Chalk*, and other things resisting Acidity. I often in a day
ap-

applied this *Lavament* with a Linnen-cloth four double ; and in the mean time the Patient every two hours took two Spoonfuls of the following Mixture (temperating Acidity) that part of that coming through the Arteries to the parts affected, might contribute help to the Remedies externally applied.

Rx *Water of Bawm*, ℥iij.

Treacle-water.

Mathiolus his Aqua Vitæ, of each ℥i.

Sugar Perlat. ℥iij.

White Coral prepared, ℥j.

Crabs-Eyes prepared, ℥j. ff.

Bezoardic Dinerale, ℥j. ff.

Spir. Harts horn, xx Drops.

Oleaginous Volatile Salt, xxv drops.

Make a Mixture.

Using this *Lavament* for one day, and finding little benefit by the use thereof, I scarrified the parts affected, and washed them with *Unguentum Egyptiacum* mixt with Spirit of Wine ; I did not at all fear any damage to accrew from the Vinegar which is put into this Unguent, because in the boiling that is all evaporated. Also I anointed the exterior Circumferences of the

the affected parts with *Oyl of Tyles*, called *Oyl of Philosophers*. Lastly, I applied a *Cataplasme* of *Rue*, *Wormwood*, *Dittany of Crete*, *Root of Galangal*, and *Calamus Aromaticus*, *Flower of Lupines*, *Metheglin*, and other things temperating Acidity.

By use of these aforesaid Remedies good *Pus* began to be generated, which (by its gently cutting Particles) brake in sunder the remaining intermediate Fibres, which as yet had retained the dead and living flesh together, and by this means the parts affected with the Gangrene were separated. Seeing this, I applied *Common Turpentine*, mixt with *Basilicon* and the White of an Egg, by which all the viscus Particles were removed, which were otherwise wont to obstruct the Pores of the Arteries, and cavities of the Veins. By this means several Particles came forth from the Arteries, and adhered to the Ulcers, by reason of the similitude of their Superficies; and soon after all the Ulcers were discerned to be filled with flesh: then I applied dry Lint scraped, and in a short time induced an *Eschar* by that onely. For that imbibed all the *Pus* which otherwise would have corroded, and wholly closed the Orifices of those tender Vessels.

Thus our Patient was compleatly restored to her pristine sanity, *Octob. 21.*

OBSER.

OBSERVAT. IV.

Of a Sphacelus of the Foot.

A Man of Seventy years of age, that had all his life-time devoted himself to *Wine* and *Venery*, and by frequent intervals was afflicted with a *Spasmus* of his right Leg, in the year 1681, *February 22*, was invaded with a small Fever not vehement. On the 26th day of *February* his prostrated appetite seemed to return, wherefore on that day he twice eat a great quantity of very sowre Butter-milk, and the same day (about nine at night) he began to complain of a very great pain of his right Foot, and (soon after) of a *Stupor* and great coldness of the same; and the same *Dolour*, *Stupor*, and *Algor*, in two hours space ascended above the Knee. The 28th of *February* I was called, and by Scarification found, that the *Sphacelus* had ascended an hands breadth above the Knee; for so far was present that extream Cold and Rotteness, and in Scarification no sign of *Dolour* appeared, nor did any Bloud issue out, except a very little very black and coagula-

coagulated, breaking out in one part or other.

Very attentively considering all these things, I concluded, that the abuse of Wine and Venery, had rendred the Bloud of this Man (its more subtile and more volatile part being absumed) too viscous and acid ; and when certain acid and viscous Particles of this Bloud , were by Circulation come to the right Foot, perhaps they there stagnized, and afterward pertinaceously adhered, and by their stay there acquired greater sharpness.

These Particles inferred no Dolour so long as they remained unmoved ; but when by intervals they were forced from their residence by the Humours circulating, and by them excited to motion , then they became the cause of the *Spasmus* of the right Leg, irritating and cutting the small Fibres of those parts, and so gave occasion to a greater afflux of the animal Spirits.

But the continued excess of Wine and Venery had left scarce any thing in the Bloud of this man, except a *Caput-mort* (as I may call it) that is, nothing besides Bloud very viscous and acid, which could no longer duly exercise its proper effervescency in the Heart, nor circulate through the parts ; yet this Bloud, when it had by a small Fever received greater motion, and was rarified more than usual, did sufficient-

ly open the Pores of the Arteries, so that many acid and viscous Particles issued out, and stayed without ; and this hapned rather in the right Foot than elsewhere, because there resided the acid and viscous Ferment, which caused the Acidity and Viscosity contained in the Bloud , to draw nigh to it self in such a way as we explained in the Second *Observation* ; and perhaps a great cause was that abundance of acid Butter-milk eaten because this happened the 27th day of *February*, rather than at any other time.

Those acid and viscous Particles that passed out from the Pores of the Arteries on the 27th of *February*, settled in the Veins of the right Foot, and conjoynd themselves with the acid Ferment therein contained, and there (by the acuteness of their sides) impressed on the small Fibres a very vehement motion, and so produced that Dolour ; but the small Fibres, being no longer able to sustain that violence, were soon after wholly cut in sunder , and by that means the sense of pain, notwithstanding the Scarification then made , was totally annihilated, and the broken Fibres (infolding themselves each within the other) had so obstructed the veiny passage of the right Foot, that the Bloud and Animal Spirits could not enter ; this was occasioned by the coagulation of Humours in the Foot, produced by the aforesaid Acidity.

ty. Hence I discerned the Original of the *Sphacelus* of his right Foot: also that it must needs take beginning from Acidity, is confirmed by that black and coagulated Bloud which in scarifying had its Exit: For every man knows, that the Bloud waxeth black and is coagulated by Acidity.

This *Sphacelus* had by this time transcended the Knee, and soon after (a little above the part affected) the Patient felt an intolerable pain.

I, considering with my self the forepassed deffolute Life of the Sick-man, his Age, his Leg above the Knee infected with this *Sphacelus*, and his whole Mass of Bloud grievously tainted; and moreover calling to mind that I never knew any Old men infected with this Disease to escape, did boldly predict the inevitable death of the Patient; yet in the mean while I promised I would mitigate the dolour as much as I could, and (if possible) prevent the further ascent of the evil.

In order hereunto, I commanded the Patient should every two hours take two spoonfuls of a mixture tempering Acidity, consisting of *Borrage* and *Bugloss-water*, *Treacle-water*, *Sugar-perlate*, *Crabs-Eyes*, *Coral*, *Mineral Bezoardic*, and other things infringing Acidity, and attenuating Viscosity.

*

C 2

Also

Also I caused a Decoction to be made consisting of *Water*, *Wine*, *Roots of Calamander Aromaticus*, and *Enula Campana*, with *Rue*, *Dittany of Crete*, *Wormwood*, *Flower of Lavender*, &c. which I applied hot with a double Cloath; by which Application some easie of pain was induced: For the Acidity, inducing dolour by its accuteness, was thereby rendred more temperate. Therefore when the Cloath was dry, I again moistned it in the same Liquor; and this reiterated Application I continued for severall days.

Now, when the 7th day of *March* was come, I saw that Down or Mossy Lanugo (which is vulgarly called *Mouldiness* or *Murcor*) dispersed through the whole internal part of the Leg, from the Ankle to the Knee; and had I at that time had at hand a good *Microscope*, I might have there discerned many Plants, with their Stalks, Leaves, and Flowers, in excellent order disposed, springing up from the Leg of the man yet living, no otherwise than as a *Fungus* (or *Mushroom*) is wont to arise from the Earth.

The Sick-man in the mean while eat not any thing, and was every day afflicted with a Fever often coming and vanishing. At length on the 14th day of *March*, at four in the Morning he slept well, his Pulse before death often intermitting, which also
may

may easily be understood to proceed from Acidity.

But his whole Mass of Bloud was infected, therefore here *Phlebotomy* could in no wise be admitted; for three days before the Sick-man died, his left Foot also (from the great Toe to the Ankle) was infected with a *Sphacelus*; and both his hands for 24 hours before his death were cold as Ice, though after return of the Fever they again waxed warm.

Now, that to this Evil I applied convenient Remedies, will (I suppose) be very apparent by this, *viz.* that the *Sphacelus*, which at first (good advice being neglected) had, in four hours space ascended from the great Toe to above the Knee, after the application of my Remedies, had not ascended in the space of two Weeks above one hands breadth.

OBSERVAT. V.

Of an Erysipelas of the Leg.

A Man Forty years of age was invaded with a Fever, which vanished the 12th hour after the Assault; then the Sick-man began to complain of pain and redness of his right Leg. C 3 In

In some solid part of this man lay hid a certain acid Ferment, which (by some cause or other) was thence expelled and forced into the Mass of Blood, in which it excited that Inimical Fermentation, which is known by the name of a Fever.

But when that Ferment was circulated with the Blood, perhaps certain Particles thereof stagnized, and inhered within the *Cutis* of the right Leg; which Particles in a short time, compelled all the other Particles of that acid Ferment to recede from the Blood and approach to them, almost after the same manner as one Magnet causeth another to approach to it self.

Those Particles there inherent, and sufficiently corroding the small Fibres, excited dolour in the Leg: But the Redness took beginning from the Blood stagnized in the Capillary Veins, by reason of the coagulation beginning and proceeding from Acidity; as we perceive a sufficiently intense redness in the Face, when the Neck and Veins there contained are by a Collar (or any other thing) too much constricted.

To this affect we give the name *Erysipelas*. But how came the Fever so soon to vanish when the *Erysipelas* appeared? I answer: Because at that time the Sanguinous Mass was freed from that acid Ferment,

ment, which then passed into the Leg.

This Disease I entirely cured in two days space, with one onely *Lavament* (temperating the Acidity) which consisted of *Spirit of Wine, Camphire, Lithargyry, Chalk, Salt-prunella, &c.* being firmly perswaded, that these *Phænomena's* had derived their Original from Acidity.

OBSERVAT. VI.

Of Varicous Ulcers of the Leg.

A Virgin aged Forty years, having for a long series of time devoted her self to an ill habit of Diet; and, among other inimical Foods, she too much delighted to eat things viscous, Vinegar, and other sowre things, in the Summer-season also often putting her Feet into cold Water; she had now for Fifteen years been afflicted with a *Varix* of her left Leg, extending it self from the Sole of the Foot up to the Knee; and also with two Ulcers (nigh the inward Ankle of the same Leg) deep, sordid, and very dolorous, and for the most part filled up to the top with a certain sharp and thin matter, and often having round about them

an *Erysipelas* attending. Many Physicians and Chyrurgeons, for a long time in vain attempted the cure of these Ulcers ; yeas, also that most famous Practitioner of *Feiur* Lord of *Cranenburg*.

From the too great quantity of acid and viscous Meats assumed, the Bloud of this Maid was rendred gross and apt to stagnize ; wherefore a certain portion thereof conveyed to the left Leg, there stayered and resided about the small Valves of some Vein, the Membranes of which, by a great abundance of Bloud (there congested) were so distended, that the Humours passing out from the small Arteries, dispersed among the Membranes of that Vein (found among the Membranes of the Veins, you may by a *Microscope* discover small Arteries, Veins, and Nerves, and undoubtedly there are also present small *Lymphatick* Vessels) and wandering through the small Cavities of the same Membranes, could not freely pass, but stagnized there, and thrust themselves between the *Interstitiums* of the small Fibres, in so great abundance, that they not onely enlarged those *Interstitiums*, but also denied passage to the Animal Spirits from the small Nerves, gliding into the aforesaid small Cavities, and otherwise in some sort constringing the Vein, and in it producing a certain *Peristaltick motion*, for promoting the Circulation of the Bloud.

in the Vein; and so the Bloud in that Vein (in some sort) stagnizing , and above measure distending the Membranes thereof was the cause of the aforesaid *Varix*.

But why should that *Varix* rather present it self to sight in the Leg than elsewhere ? I answer : Because the Veiny-bloud must there ascend , by a Perpendicular way, to the Horizon ; and besides, this way is in some measure closed up by the Garters we are wont to use to retain and keep up our Stockings ; so also the same was here occasioned by this Maids too often putting her Feet into cold Water.

Therefore the Bloud, in greater abundance than was fit, congested in this Vein, distended the less resisting parts of the Membranes of the same more than other more gross parts, and so formed to itself certain Recesses, and especially about the small Valves, in which the Bloud (now of its own nature become much too acid) contracted to it self a greater *Acor*, because it stay'd too long there without Circulation.

But many of the more acid Particles of this Bloud penetrated the more distended (and consequently more rare) parts of the *Varix* ; that is, through those Recesses, and so the small Fibres being there irritated,

ted and afterwards cut in sunder, great do-
lour was excited, and soon after two very
painful Ulcers, which by the breaking of
more small Fibres, were rendred very
deep.

Those acid Particles, pertinaciously ad-
hering in the pores of the Lips and bot-
tomes of the Ulcers, they converted the as
yet sincere Humours into acid; which be-
ing unable to continue their Circulation,
were (by the Humours continually fol-
lowing them) forced outwards into the
Cavities of the Ulcers, which they usually
filled almost up with a sharp acid and thin
Humour; yet not so thin, but that (in the
mean while) certain more viscous and
more stringy Particles were mixt there-
with; which, with their strings (entan-
gled each within the other, and sticking in
the Superficies of the Ulcers) rendred them
very sordid.

Thus far we have explained how certain
and acid Particles have passed through the
aforesaid Recesses unto the near adjacent
Flesh; now 'tis time to observe that many
more acid Particles were, from those Re-
cesses, forced into the sanguineous Mass, cir-
culating with which they entred into the
Ulcers, rather than into other parts, by
reason of the acid Ferment lurking there,
after the same manner as we shewed in
the Second *Observation*: Thus was the a-
bundance

bundance of acid Humour (filling the Ulcers, and from them proceeding) augmented.

The *Erysipelas*, which for the most part surrounded the Ulcers, derived its Original also from the Acidity there inherent.

When I had for some time well weighed all these things in my mind, I at length converted my endeavour to the cure of the *Varix*, (as the first Original of the Evil) which, if in things profitable it be lawful to use the Terms of Art, may be called the *Procatartick* or primitive Cause; therefore from the *Varix*, opened with a Lancet, I drew forth several ounces of stagnized Bloud, acid and black.

Then I proceeded to the sanguineous Mass, infected with the acid Ferment, which may be called the antecedent Cause (according to the subtilty of the Wits of our time, which more regards the Pomp of vain Words, than things themselves) and by a good Diet instituted began to correct that (prohibiting all things viscous and acid) by a Powder temperating Acidity daily taken, consisting of ℥j. of *Crabs-eyes*, and the same quantity of *White Coral*.

After this I set about the Ulcers themselves, in the bottoms and Lips whereof lay hid an acid Ferment, which (if it be the pleasure of some) may be called by the

the Name of a Conjoyned Cause.

The principal thing that remained for me to do, was to temperate and remove that Ferment, and gradually and without sense to depress the Lips of the Ulcers to the bottom; for from this last business I promised to my self a threefold Utility.

First, I knew that the cavities of these Ulcers being thus removed, none of that acid, and at least in some part Viscous Humour could be there collected, which by reason of its viscous and stringy Particles, had before rendred the Ulcers sordid and (through its acid and cutting Particles) daily more and more excavated them; there being always in the Cavities of them a great abundance thereof continually congested. But if this Humour have access to the Ulcers, it must be cast out presently after its coming there, to the sides of the Ulcers, their Lips being strongly depressed by some hard and heavy Body superposited.

Secondly, I was certain by this means to restore the Circulation of the Blood and Humours, in which is sited a great part of the cure of Ulcers: For the Lips of the Ulcers being not prominent (as before: over the Superficies of the bottoms, I could discern it was possible to be effected, that the Humours (circulating through the small passages contained in the Lips of the
Ulcers)

Ulcers) which before, by reason of those passages obstructed , did flow into the Cavities of the Ulcers, would now find out their own way through other passages in the bottoms of the Ulcers, and so again renew their Circulation, which cannot (as before) be impeded by the ambient Air, because that is sufficiently repelled by the same body which depresseth the Lips of the Ulcers , that being sufficiently thick, solid, and hard, to answer my purpose.

Thirdly, In cure of *Ulcers* and Wounds, I have often observed, that an *Eschar* to be generated never took beginning from the Center or any adjacent parts of *Ulcers* or Wounds; but always begun from the extremity of the ambient *Cutis*, by reason of the similitude of Superficies which is found between the *Cutis* and the *Eschar*. Hence I firmly perswaded my self , that the *Ulcers*, first freed from their acid Ferments and Filths, and rendred plain in the afore-said manner, (their pristine *Circulation* being restored) would in a short time be covered with an *Eschar*.

Therefore I prepared certain fit Medicaments (temperating Acidity) to resist the peccant Ferment , lying hid in the *Ulcers*; and that(as the saying is) I might with one Brush whiten too Walls, I formed of them two Cakes, sufficiently hard and thick, and somewhat larger than the *Ulcers*, so that they

they would also cover a small part of the Lips, and those I laid upon the Ulcers, and with a sufficiently strict *Ligature* firmly bound them on, and left them so for 12 hours; which being elapsed, I could soon discern, that the hope I had of them conceived failed me not: For I found the Ulcers wholly plain, freed from all filth, and conspicuous, with a pleasing redness, and little or nothing painful. Whereby, being almost wrapt into admiration, I concluded that the acid Ferment in the Ulcers for the most part was, and the remainder would in a short time be tempered.

After a few days, Circulation being restored, certain well-known Particles, passing out through the Pores of the ambient *Cutis*, firmly adhered to the extremity thereof, having a like Superficies with the *Cutis* it self. Thus we plainly understood the certain Rudiment of that *Eschar*, which had in the space of five Weeks fully closed either Ulcer; for it every day increased more and more.

Afterward I every year once opened the aforesaid *Varix*, and drew from it *lib. j.* of Bloud, by which means those Ulcers never after opened any more.

In the mean while, to the *Erysipelas* which I had almost forgot, I applied a four-doubled Cloath moistned in a mixture prepared with *Water of Elder-Flowers*, *Spirit of Wine*,

Cam-

Camphire, and *Saccharum Saturni*, for temperating the peccant Acidity, which being effected, all Symptoms of the *Erysipelas* ceased, together with the burning before induced by the acid Particles, when with the acuteness of their sides they, oftner than usual, invade the small Fibres.

But whence was it that these Ulcers could not be healed in so great a space of time, by so many Physicians and Chyrurgeons, though men well in years? I answer: Those men, by reason of their age, contemning the solid Reasonings of others, would never approve of any thing but their own experience.

Experience without true Reason can profit little: For as among a thousand humane Faces, no one is found exactly in all things like to another; so among so many *Diseases* there is not one which in all things wholly agrees with another. Moreover it is very credible, that the Bloud and internal Parts of one man do no less differ from the Bloud and internal Parts of another than the External. Whence again ariseth the various Temperament of men, the variety of which requires various Remedies, and (besides *Experience*) sound Judgement in the Physician; that he may know how to make choice of this or that, and other Remedies instead of either.

Now, plainly to shew the *Case* as it is,
those

those Physicians and Chirurgeons, directing their Conceptions according to a certain vain and unprofitable *Theory* and *Philosophy*, could neither find out the Cause of the *Varius* nor its Effects, much less the Remedy off the same.

For they deduced almost all Diseases from their *Four Humours*, viz. *Choler*, *Phlegm*, *Bloud*, and *Melancholy*; though in the meane time they understood not what any one off them is, or of what Particles it consisted. Hence it came to pass, that it was impossible for them to find out true Remedies. They had much more prudently acted, if they had in a special manner had respect to the various Particles of the Bloud, which differ each from other in Figure, Magnitude, and Motion; as also to the Acidity and Salt (as well as they might have done) whether of these holds dominion in the Bloud: If it were Acidity, then Purgations by the Belly could in no wise be thought convenient.

In like manner, they too much confounded their Conceptions, when they thought those Ulcers were first to be cleansed by certain peculiar Medicaments, then by others incarnated: lastly, that (again) by others the *Eschar* must necessarily be induced. Now that this too anxious distinction is very unprofitable, will be plainly evident by this, viz. That I, with my once onely

onely *Placentula* in a short time cured both
Ulcers.

Likewise they in the Cure had respect
to their own *Axiom*, which saith, *Contraries*
must be cured by Contraries; and discerning
great heat in the *Erysipelas* surrounding the
Ulcers, they endeavoured to expel that by
cold things which stopped the Bloud and
Humours, and by that means did in no
small measure augment the burning heat
of the *Erysipelas*: But these men were a-
bused by their own *Axiom*; which had
they endeavoured to make a right use of,
they should first have considered that bur-
ning Heat to be onely the Effect, and own-
ed for the Cause certain acid Particles, by
reason of Obstruction inherent about the
Ulcer, which (with their cutting sides)
struck the Nervous Fibres with a more than
usual trembling, and then they had more
rightly cured *Contraries* with *Contraries*, viz.
applying such things which they had by
experience found fit to resist the corroding
Acidity, and remove the Viscosity obstru-
cting.

D

OBSER.

OBSERVAT. VII.

Of a Wound of the Eye.

IN the year 1680, on the 21th day of November, I was commanded to be sent for by a young Nobleman leading a Militant life, who three days before was wounded with a Leaden-Bullet, in that part of the left Eye which is between the *Iris* and *Pupil*; so that the Bullet had penetrated even into the Eye, and soon after the Wound made, no small quantity of aqueous Humour flowed out. I found the Orifice of the Wound closed with a certain fibrous and white Matter. The *Iris* with the *Pupil* wounded waxed very livid, and the remaining part of the Eye (thus hurt) was intensely red and swell'n, attended with burning Heat, and a proflux of sharp Tears. The dolour was continual, except that it was more remis, when the Patient held his head backward; but as oft as he held his head down the pain augmented. The Sight of the Eye hurt was wholly lost, and the right Eye (though it remained untouched) was red and much pained. A cer-

tain

tain *Chirurgion* to that matter, closing the Wound, had applied sharp things, and to the remaining part of the Eye cold things: This was done three days before I was called.

It will perhaps seem strange to some, that all the aqueous Humour issued not out by the Wound; but their wonder will soon cease after they have well weighed and considered the following Reasons.

First, Let them consider, that the Bullet (in its inferiour part) was more strongly forced into the Eye than in its superiour part; and so it broke the inferiour part of the Membrane of the Eye, the superiour part of that Membrane remaining entire. By this means part of the Membrane broken turning inward, formed a certain *Aperture*, through which part of the aqueous Humour issued out, and in its efflux again turned outward the before turning inward Membrane, which then like a *Valve*, turning from without to within, not from within outward, again closed the *Aperture* of the Wound, and so impeded the outflowing of the aqueous Humour from the Eye.

Secondly, That fibrous and white shining Matter closing up the Orifice of the Wound, falls under our consideration. But whence had this Matter its Original? Should I now, with the Company of vul-

garly-learned men, fly to the accustomed
Asylum of Ignorance, I could readily sub-
 joyn a Reply, saying onely, that Nature:
 was so provident in this case, that she in a
 short time filled up the hole with fit Mat-
 ter; not onely that all the aqueous Hu-
 mour might not issue out, but also that the
 most cold ambient Air might not pene-
 trate to the parts and endamage them.
 But such an Answer seems to me no less
 ridiculous, than if I should ask; why in
 boyling hot Broath exposed to the Air a
 thin Skin is generated on the Superficies?
 And another should answer; The nature:
 of the Broath is so provident, that it pre-
 sently forms a *Pellicle* on the Superficies off
 the hot Broath, lest the cold Air, having
 access to the internal Particles, should hurt
 them; and that the heat in the Broath
 might be longer preserved, and (the other-
 wise flying) Vapours retained and con-
 stringed within the Broath by the superpo-
 sited Membrane; whereas he should ra-
 ther have said, that many of the more thin
 parts of the Broath, apt for motion, ha-
 ving figures fit for the same, easily evapo-
 rated into the Air, and in their flight car-
 ried with themselves up to the Superficies off
 the Broath, certain Particles more gross,
 stringy, and less fit for motion, which
 (their motion being terminated by the
 ambient Air) acquiesced in the Superfi-
 cies

cies of the Broath ; where, with their small Fibres , folded one within another, they concreted into that *Cuticle* which covered the Broath.

But, returning to our purpose, we shall by a better right answer in this manner : Some *Particles* passed out from the Pores of the Arteries, and circulating in the small passages of the Membranes of the Eye, were carried to the end of those passages interrupted by the Wound, and so indeed the more thin parts evaporated , but certain more stringy Particles, prolapsed without the said passages, their motion (by the extream coldness of the Air at that season) being taken away, by their stringy Fibres infolded themselves one within the other, and so concreted into a certain fibrous and white Matter ; not unlike to that, which is often seen in that Water, into which flows the Bloud from a Vein of the Foot or Hand.

That leaden Bullet could not enter into the Eye , but very much contused it, and broak certain small sanguiferous Vessels, from which the Bloud flowing (by reason of the cold was stagnized) and infected the *Iris* and *Pupil* with a livid colour.

This Wound could not be made in the Eye but many small Fibres must needs be broken , and being broke, retire together into Curls , and so obstruct many passages,

in which the circulating Humours (accumulated) did press the sanguiferous Vessels nigh, so that the Blood in the Vessels stagnized, whence the tumour and redness almost all over the Eye had their beginning.

The Blood stagnizing in the Capillary Vessels, especially that which lay extravasated in a short time assumed Acidity, and then (with its cutting Particles) sooner than usual, and more vehemently shook the small Fibres nigh, whence that burning heat and dolour derived their Original.

Moreover, the acid Particles of the same stagnized and coagulated Blood, by their irritation excited certain light Concussions in the Glandules of the Eye; whence those Liquors contained in them, *viz.* Tears, were expelled almost continually, which were more sharp than usual: For they, being saline, in their efflux excited a certain suddain effervescency, with the acid Particles of the Blood stagnized inherent in those passages.

But the Dolour, of which I spake, did not onely proceed from the acid and cutting Particles, but also from the Leadem Bullet within the Eye, turned now hither and then thither again; and this was that Dolour which remitted when the Patient held his head backward; because then that

Bullet

Bullet lay unmoved, and rested upon the *Bony Orbit* of the Eye: But when the Patient inclined his Head to his Breast, then very acute *dolour* was perceived, because the *Bullet* was again moved and pressed the wounded part of the Eye.

A great part of the *Pupil* was covered with that fibrous and white Matter, so that *Lobuli Cœlestes* the Cœlestial Globes could not enter through the *Pupil* to excite the small Fibres of the *Optick Nerve* (dispersed through the bottom of the Eye) therefore no man hath cause to wonder that the Patient was wholly deprived of the sight of his wounded Eye.

But it may rather be cause of admiration, that the right Eye, which was not hurt by the *Bullet*, should in the mean while be vexed with redness and *dolour*; yet I shall endeavour to remove this cause of Wonder.

There is no man but sometimes experimentally finds in himself, that one Eye being moved, he can scarcely retain the other unmoved. The reason of this is, because the Animal Spirits suddenly passing from the Brain, through the Nerves, into the Muscles of one Eye, can scarcely be terminated, but some of them will (at the same moment of time) pass into the Muscles of the other Eye. Whence it is manifest, that when one Eye is pained;

that is, when in it is present a more vehement agitation of the small Fibres than usual, then I say, a greater abundance of Animal Spirits (by reason of the Pores in the Brain then more open) must necessarily flow, not onely into the Eye affected, but also into the sound Eye, in which, by these means, are produced certain light *Contusions*, which in some measure constrict the small *Passages* and sanguiferous Vessels and by that means the *Circulation* of the Blood and Humours is in some sort obstructed, so that they in a short time wax acid and by their cutting Particles infer dolour which is attended with *Redness*, proceeding from the Blood stagnized in the Capillary Vessels.

Things standing thus, I predicted to this sick Noble-man, an impossibility of recovering the sight of his wounded Eye, in which he readily acquiesced, saying, He would give me eternal thanks, provided I could preserve the sight of his other Eye. This I suddenly promised him.

Therefore, proceeding to the Cure of this Wound, I judged my principal work was to restore the *Circulation* of the Blood and Humours impeded, and then to repress the external Air, and temperate the Acidity.

In order to this, I first, for temperating the Acidity, instilled hot into both his Eyes
form

some few drops of the following *Collyrium*
twice a day.

Rx. Water of Eye-bright,
Of Celandine, of each ℥ij.
Of Hysop ℥j.
Crabs-eyes prepared
Coral prepared, of each ℥j.
Troches alb. Rhafis ℥ij. ꝑ.
Saccarum Saturni ℥j. ꝑ.
Tutia prepared ℥ij.
Make a Collyrium.

Then I applied to the Eyes two small
Bags, filled with *Fænugreek*, *Hysop*, *Lavender-*
flowers, and other things abounding with
volatile Salt; afterward, instead of these,
I applied Plaisters containing much Salt;
such as is found in *Gum Ammoniac*, *Sagape-*
num, &c.

And at length I so bound both Eyes,
that they remained unmoved, and kept the
Patient in an hot and dark place.

But, to take away all occasion of won-
der, which some one or other may perhaps
conceive, because I had so much trouble to
cure the right Eye, which was not woun-
ded, I purpose here to subjoyn Reasons
(which I judge) sufficiently valid.

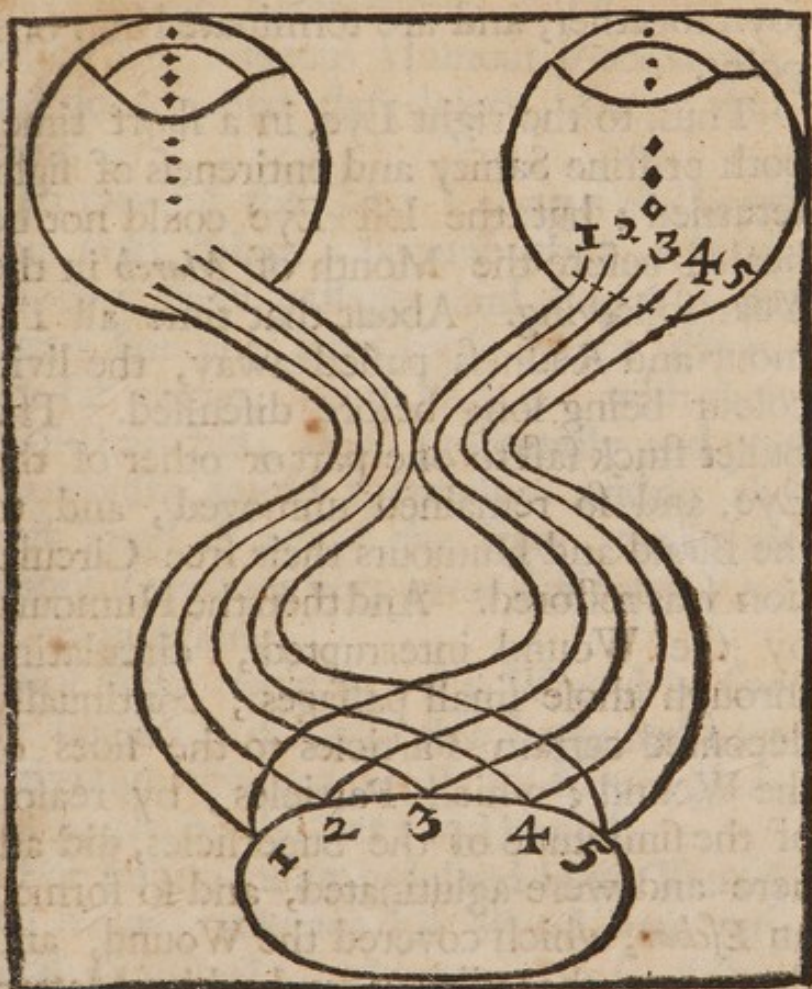
I did not this that I have done so much in
respect

respect of the right Eye as of the left. For if the right Eye had remained open, the sick man would often have moved it, and seen with the same.

That external motion of the right Eye scarcely ever happened but the left Eye was also moved; and hence how much the dolour in the wounded Eye would have been exasperated, he can easily conjecture, who hath at any time experienced with how great dolour a wounded Hand or Foot is moved from place to place.

Moreover, if the right Eye had not been closed, without doubt it would with the sight have touched many Objects at one time or other; and that could not have been without the producing of some internal motion *de novo* (by the Celestial Globes) in the small Fibres of the Optick Nerve; because indeed the least fibre in the optick nerve in the right Eye cannot be moved, but at the same time the small Fiber of the same Order in the *Optick Nerve* of the left Eye, must necessarily be moved also. This is evidently apparent by the following Figure, which the famous *Robaultius* also used in his *Physical Treatise*, (never to be sufficiently commended) but for an end far other than mine. He shews the way by which two Images (whereof one is described in the right Eye, the other in the left) when they come to the Brain, might
give

give Conception to the Mind of one onely Image.



In this Figure each Eye hath delineated onely five small Fibres, that thereby the matter may be more easily conceived. But what is here spoken of five small Fibres, may be understood of many more, *viz.* that there is no small Fiber of the Optick Nerve of the right Eye can be moved, but the

the Fiber of the same Order in the left Optick Nerve will presently be moved also. The reason is, because these Fibress joyn together, and are terminated into one point.

Thus, to the right Eye, in a short time, both pristine Sanity and entireness of sight returned; but the left Eye could not be healed before the Month of *March* in the Year following. About that time all Tumour and Redness passed away, the livid colour being long before discussed. The Bullet stuck fast to one part or other of the Eye, and so remained unmoved, and to the Blood and Humours their free Circulation was restored. And then the Humours, by the Wound interrupted, circulating through those small passages, continually deposited certain Particles to the sides of the Wound; which Particles, by reason of the similitude of the Superficies, did adhere and were agglutinated, and so formed an *Eschar*, which covered the Wound, and drove out that fibrous and white Matter. But because it was so thick that it prohibited the Celestial Lights, therefore the sight of that wounded Eye remained lost.

But in the mean while this Eye (as to bulk) scarcely differed from the right Eye, though it had cast out no small part of the aqueous Humour when the Wound was first inflicted, because certain smooth
and

and slippery Particles flowed through the Pores of the Arteries into that Cavity, in which the aqueous Humour is contained, and so supplied the defect of that Humour.

In time of the Cure I always abstained from cold things, because they obstruct the very small passages and Pores of the Eyes: For the same cause I here also reject fat things, being such as, with their small Branches, do so profoundly and pertinaciously infold themselves within the most small Pores of the Eyes, that you cannot (without very great difficulty) expel them again.

But why could not this Wound be sooner healed? I affirm this happened partly through the error of the Chyrurgeon, and partly of the sick Lord himself.

For he too much indulged both Venery and Wine, whence his Bloud was very much disturbed; and what was so disturbed (in no small quantity) ascended upwards, as by a more strait path, and there struck upon the obstructions of the wounded Eye; which notwithstanding (by reason of their pertinacy) it could not break, and by this means the dolour increased.

Besides, in most deep Snow falling from the exceeding cold Air of that Season, he would sometimes ride on hunting whole days

days with his right Eye (against my will) co-
pen; and hence the *Obstructions* were rendred
yet more pertinaceous and numerous.

The *Chyrurgeon*, who for the first three
days, applied Medicines to the Wound, er-
red in this, *viz.* that to that fibrous matter
which impeded the afflux of the aqueous
Humour (and therefore should not have
been taken away) he applied sharp things
which the Eye it self cannot bear; also
to the remaining part of the Eye he ap-
plied cold things to stay the afflux of Bloud
and Humours, as he himself said. But, are
you ignorant (good Sir) that this afflux
of Bloud and Humours is to the Eye, and
also to other parts, both natural and ne-
cessary? and had your Medicaments ope-
rated according to your wish, a *Gangreen*
would certainly have immediately follow-
ed. You see Bloud and Humours (in
greater abundance than is fit) to be pre-
sent in the Eye; but you reason amiss
when you think this to be caused from a
greater afflux than usual; whereas it ra-
ther proceeds from *Obstructions* which pro-
hibit the reflux of Bloud through the Veins,
and of Humours through the Lymphatick
Vessels, whence the Bloud and Humours
were, in greater abundance, collected into
the Eye, stagnized and waxed acid. Where-
fore you should rather have applied things
temperating Acidity, which would also
have

have been convenient for taking away the lividness of the *Iris* and *Pupil*, produced by the clotted Blood: For it is certain, that clotted and coagulated Blood cannot be restored by cold things, but are unavoidably rendered more gross, and the peccant *Obstructions* (by this means) not removed, but augmented.

But before I put an end to this *Observation* there remains yet one *Phænomenon* to be discoursed of relating to Wounds.

It is undoubtedly true, *That the Cause being taken away, the Effect ceaseth.* But why then the *Sword*, *Knife*, or any other thing wounding, being taken away, is not the dolour in the wound presently removed, but sometimes persists very long? Dolour in the part hurt is not, unless there be a Concussion of the small Fibres, more vehement than usual, which cannot be unless by another body put into motion. Therefore what shall I say of the dolour, which sometimes is portracted whole days, yea, whole weeks after the Wound is inflicted, when the *Sword*, *Knife*, or any other thing wounding, hath been long before laid aside? Let me circumspectly consider, whether I can find any thing that can excite the small *Fibres* of the wounded part to a greater agitation than usual. Behold! I have found it. When certain small Fibres are cut in sunder by a *Sword*, then suddenly

ly they crisp up on heaps, and obstruct the small passages of the wounded parts, so that the Humours cannot freely circulate, but strike upon those *Obstructions*; whence is excited dolour, which still increaseth, when those Humours begin to wax acid, and (with their cutting Particles) yett more and more irritate. Besides, many small Fibres, which before were covered with skin, after the Wound inflicted, are exposed to the ambient Air, which affects them with more vehement trembling than is fit, whilst it communicates somewhat to them from its own motion, by which indeed it is continually and powerfully enough agitated.

OBSERVAT. VIII.

Of a Suppurated Tumour; also of Rottenness of a Bone.

A Young Maid ten years of Age, afflicted with a burning Fever, soon after the Fever felt a pain, and (quickly after that) a Tumour in her Shoulder, which was of the same colour with the skin and somewhat hard. The

The Bloud more than usually agitated by the Fever, from the recesses of this or that solid part, washed off many acid and viscus *Particles*, which circulating with the bloud, did part of them pass out from the pores of the Arteries, at that time too much dilated (by reason of the heat of the Fever) into the small passages about the *Shoulder*, sited far within the *Cutis*; in which passages they adhered and excited colour, whilst with their pricking sides they more vehemently than usual made a commotion, and by this means in some measure distorted the bordering passages; hence also the Humours there stagnized, which (though they were before pure) for a small delay there, waxed acid; hence so the Bloud stagnized in many Capillary Vessels, but so deeply sited within the *Cutis*, that the redness could not be apparent through the skin, and therefore appeared of the same colour with the *Cutis*.

But whence was that hardness of the tumour? for it was Liquor that was contained therein; and such Liquor, as (being fluid) and gently touched with the hand, offering no resistance, could not be judged either hard or soft.

A great quantity of Liquor is contained in an Apple, and may be pressed from it; yet in the mean while it is found to be somewhat hard, because that Liquor is

E

very

very much divided, and abides separate in several small passages and Pores of the Apple, distinct each from other. Therefore the hand touching the Apple meets with the first small passage; whence the Particles of Liquor (in that contained) do indeed in some measure recede; but as approaching to the subjacent passages they find resistance. Hence the hardness of the Apple is made manifest, and by consequence also the hardness of the Tumor.

Therefore, being perswaded that in this case the viscous Particles obstructing, and the acid, cutting, and irritating, I judged nothing could be more conducent for entering them than things aperient and tempering Acidity. Wherefore to the Tumor I applied *Paracelsus* his *Stiptick Plaster* but (I am willing briefly to note this) the Magnet in it seemed to me superfluous in this case, that being added onely to attract things hurtful to it self. Yet the Magnet cannot draw to it self all bodies without distinction, but another Magnet and Iron onely; and it wholly loseth this attractive power, when reduced to powder (as *Robaultus* found by experience) because then the striate Pores are broken. This same *Robaultus* reduced a very good Magnet to powder, which he put into Lint, and rubbed the powder well in to joyn with the same; and by Application found the

pristina

pristine vertues in the Magnet to be totally vanished.

But to return to our purpose, I left the aforesaid Plaister several days upon the Tumor, hoping by this means the Acidity would be tempered, and the viscosity so attenuated, that it might be partly restored to its pristine Circulation, and partly evaporated through the Pores of the Skin; but the evil was too pertinacious, and frustrated my hope. What was to be done then? The Acidity, with its cutting Particles, had broke the small Fibres, and several concave passages, so that the Liquor in the Tumor contained, flowed all into one place; then the Tumor was no more hard but soft, no otherwise than as the Liquor before expressed out of an hard Apple, and received into some Vessel, exhibits it self soft to the touch. In that I judge the *Suppuration* made in the Tumor to consist.

Now I seem to hear our vulgarly-learned men exclaiming against me, saying, I proceeded not in cure of this diseased Girl according to Art; that is, according to their false and unprofitable *Theory*, which commands first of all to apply to Tumors repelling Medicines. But this clamour is easily silenced by onely saying, that the cause of almost all Tumors is Obstruction, which (according to their proper Axiom, *viz.*

that *Contraries are cured with Contraries* must be removed by *Aperients*, but not multiplied by repelling Medicaments (vulgarly so called) viz. by cold and astringent Remedies.

But what if I should beat the *Adversaries* with their own Weapons, and convince them by two Arguments, that repelling Medicaments (vulgarly so called) in the beginning of almost all Tumors, very rarely, yea never, can be profitably useful. I will at least attempt it.

Their will is, that repelling Remedies be applied in the beginning of Tumors, yea they except two Cases. The *first* is when the Tumor is made by Congestion. The *second*, when it is found in an *Emunctory*.

As to the first, it is known to every man (not plainly blinded with prejudice) that no Tumor is made by a Fluxion, as such provided it be natural; but every Tumor is made by Congestion; that is, when the flowing of Blood and Humours is impeded by *Obstruction*, by reason of which the Blood and Humours must be somewhere congested and accumulated; hence it most evidently follows, that repelling Medicaments can never be available in Tumors.

As to the other, for brevity sake, let us take one onely *Emunctory*, by them vulgarly

y so called. They affirm repelling Medi-
 caments not safe in Tumors of the Groin,
 because that is the *Emunctory* of the Li-
 ver; that is to say, because by it the impu-
 rities of the Liver are expelled; but this
 is a truth is a most false reason: For the
 Lymphatick Vessels conveigh their con-
 tained Liquor upwards from the Groin,
 so that nothing remains but Nerves and
 Arteries, through which the Excrements
 of the Liver are deposited; but though the
 Nerves eject some Excrements by the Groin,
 yet it doth not follow that that is the *E-*
munctory of the Liver, but rather of the
 Brain and *Spinal Marrow*: For the Nerves,
 of which there are very few found in the
 Liver, receive nothing from it; and al-
 though by the Arteries (which also re-
 ceive nothing from the Liver) certain Re-
 crements are driven into the Groin, and
 by that expelled; the Groin doth not
 therefore deserve to be called the *Emun-*
ctory of the Liver, but rather of the whole
 Mass of Blood. Therefore if repelling
 Medicaments be not to be applied to Tu-
 mors of the Groin, because that is the *E-*
munctory of the Blood; then by conse-
 quence, it will be unsafe to repel in any
 other part of the Body; because every
 where many Particles of the Blood are e-
 vacuated and exhale through the Pores of
 the Body.

But it is now time we should return to the, purpose from which we have too far digressed.

Because the Tumor was ripe, and the Pus contained therein, so deeply sited, that it could not break through the superposited Skin and Flesh, I therefore made an Apertion in that part of the Tumor, which appeared more soft and more eminent; this being done, not a little Pus issued out. Behold! I then found a black and putrid Subject (rendred such by the Acidity contained in the Tumor) which had cut its way under the small Fibres of the *Periosteum* and after that had corroded the Bone itself, and corrupted its volatile Salt, which is natural to Bones, and is found abounding in them, as is evident by the distillation of the *Humane Cranium*, from which is forced out much Spirit, and no small quantity of Volatile Salt in a dry form.

But if any man be not as yet fully satisfied with these my Reasonings, let him apply to his Teeth Oyl of *Vitriol* (which is very acid) and he will by proper experience find them not onely to rot, but also to fall out by picce-meal.

Yea, this was well understood by *Fabritius Hildanus*, that most famous and highly experienced *Chyrurgic-Physician*; therefore he, in rottenness of the Bone, condemns nothing more than acid Oyl of *Vitriol*, Oyl of Sulphur

Sulphur, Aqua Fortis, &c. and indeed deservedly.

I long since knew, that *Ulcers* attended with rottenness of the Bone, could not be healed, unless by restoring the Bone first to its pristine condition; therefore I here first took in hand to cure the perished Bone.

I also was not ignorant, that *Fat* things were very hurtful to the Bones, because they (with their stringy Particles) do easily obstruct the small Pores and passages of them, and indeed pertinaciously enough. For which cause I here shunned all *Fat* things, worse than I would a Dog or Snake, and upon the putrified Bone I strewed *Powder of Euphorbium*, which contains much *Volatile Salt*, and that indeed very tart. By this means, in a short time all the rottenness was gradually removed from the Ulcer in form of an impalpable Powder.

That the *Fatness* of *Euphorbium* is not acid, as some perhaps may conjecture, but saline, is manifest by this, *viz.* because it so vehemently excites *Sternutation*, no otherwise than as *Spirit of Sal Armoniack*, which every man owns to be saline. On the contrary, apply to your Nostrils the acid *Spirits* of *Nitre, Vitriol, Salt*, and *Sulphur*, and you will find them, though most sharp, yet not to excite *Sternutation*.

Now, that with *External Medicaments* I

might help the Internal, whilst I was using the *Euphorbium*, I gave to the sick a Decoction made with *China*, *Sarsaparilla*, and other things containing much Volatile Salt.

When I saw the rottenness would not give place to these, I applied red-hot Iron which is by some called an *Actual Caution*, to distinguish it from that which is called a *Potential Caution*, but very improperly; For there is no such thing as a *Potential Caution*. Every *Caution*; that is, every thing that burns acts. If that may deservedly be called *Potential Caution*, which though it cannot presently burn, yet in a short time will effect the same; then Ice, by a better right, shall be accounted a *Caution*, because that may be reduced into boiling Water, but how improper such a saying is, I leave to the judgement of others.

But burning Iron in rottenness of a Bone for two causes helps. *First*, it communicates so much by its own motion to the Acido-corrosive Ferment (inherent in the Bone) that it can evaporate as *Spirit of Vitriol* is (in distilling) by Fire elevated on high. *Secondly*, it can temperate that part of the Acido-corrosive Ferment, which is left in the rotten Bone. For Iron egregiously resists Acidity, as is evident in the preparation of *Vitriol* and *Mars*; in which is excited a sufficiently manifest Fermentation.

tion, when the *Spirit of Vitriol* is infused upon the *Filings of Steel*; and so in a short space of time the *Spirit of Vitriol* loseth much of its acor and corrosive force; yea, it waxeth sweet.

The rottenness of the Bone removed, the remaining Ulcer was in a short time filled up with flesh onely by *Common Turpentine* applied with the *White of an Egg*; and *Skin* was induced by dry Lint onely, that continually imbibed the *Pus*, which (left in the Ulcer) did not a little hinder the generation of the same.

There are many that suppose, that Arteries and Veins partly cut off can never be regenerated, because they are *Spermatick* parts, (so by them vulgarly called) but they are deceived. Why may not the Bloud, issuing from a small Artery cut off, thrust to the sides certain Particles stringy and less apt for motion (infolding themselves each within the other) there form the rudiment of some *Tunick*, which may deserve the name of a small Artery? and why may not the same Bloud in its course, impeded by somewhat offending, be reflected, and so the stringy Particles being again cast to the sides, there produce the rudiments of some Vein? no otherwise than as may be seen in an Egg (after Incubation for some days) in which both Arteries and Veins after the same manner proceed

ceed from the liquid matter of the same Egg? This case is indeed very easie to be understood.

Yea, a very light contact of that tender flesh, with which the Ulcer is filled, presently causeth Bloud to issue out, which certainly could not be, were not the Arteries and Veins so far prolonged.

But if there be yet found any one that shall be so incredulous as not to belive what I have written, him I refer to the *Medico-Physical Collections* of the industrious *Blankart*, wherein he declares, that either himself or some other man, in Ulcers first hollow and afterward filled up with new flesh, hath (by a *Microscope*) discovered Veins and Arteries; yea, by his Eyes onely, without a *Myroscope*, if the part healed was first sucked for a little time.

Thus far proceeding, I have now (as I judge) so clearly explained the *Phænomenons* occurrent in this little Maid, that her Case may by all be understood; having acted far otherwise than the anxious Sectors of old Authors were wont to do. For should I ask them, Whence that Tumour of the Shoulder (of which I spake even now) derived its original in the sick Maid? They would presently answer, Nature had discharged her self in that place. But I judge this equally as absurd as if I should ask why Beer newly boiled

casts

casts up its Dreg through the Bung of the Cask? and another should answer. The nature of the Beer, in that place, and by that means, frees it self from its burthen; whereas it should rather be said, the Beer ferments; that is, there is a certain intestine motion in the small Particles of the Beer, and by them the stringy and other Particles, not sufficiently apt for like motion, are thrust out by the Bung, where they are not compelled to a motion so swift.

Moreover, should I ask them why that Tumor rather exposed it self to sight in the Shoulder than elsewhere? they would readily thus answer: This hapned by reason of the debility of the *expulsive* Faculty in the Shoulder. An excellent way of reasoning indeed! containing as many *Chimæra's* as words.

If any one from a large Vessel pour any Liquor, with a small and equally continued Ray, through a small Tunnel into a narrow-mouth'd Bottle, and see the Liquor to pass out with the same celerity as it was poured into the Tunnel, but afterwards observes the Liquor in the Tunnel to be more and more accumulated, doth he not egregiously expose himself to the derision of every man; if he produce as a cause of this the debility of the Expulsive Faculty in the Tunnel; whereas the cause is some obstruction (in the inferiour small Pipe of the Tun-

Tunnel, or in the narrow Neck of the Bottle) induced by some more gross body by chance contained in the Liquor? Whoever shall diligently weigh all these things in his mind, will find the matter to hold parallel in either case, and discern the reason of either side alleadged to be equally ridiculous.

Before I put an end to this *Observation*, there remains yet one Problem to be discussed by me, and it is this, *viz.* Whether an Ulcer or hollow wound may not be filled up with some other Flesh, whether that Flesh be taken from some other part of the same man, or else from another *man*, or from some Beast? especially seeing we often find that the Spurs which Cocks use in fighting one with the other, cut from their Legs are not onely agglutinated to the head, but also largely increase in a short time; as we daily see the like when Cocks are castrated; yea, almost every man hath (at some time or other) seen how a Branch cut from one Tree, doth grow together and unite with another.

But the reason here is far unlike; for the passages (or Pores) existing in the Spurs of Cocks, and Branches of Trees, are constant, so that the Section of them distorts them not; wherefore the circulation of Liquors through them is easily renewed, although inserted into another
part

part or another Body. In our flesh it is otherwise, the small passages there are very tender, so that by Section or any other force, they are presently distorted, and their sides (by this means) do almost close together, and so at that time the circulation of Humours through the same is wholly impeded.

OBSERVAT. IX.

Of a Fracture of the Shin-bone.

A Man Thirty years of Age leaping out of a Coach, suffered an oblique Fracture almost in the middle of his *Shin-Bone*, which was attended with inequality of the Leg, grating of the Bone, dolour and imbecility of motion.

For one extremity of the Shin-bone, by reason of the Fracture, tended this way, the other that way, (whence was the inequality of the Leg) and when those two extremities hit upon each other, the grating of the Bone was heard; and when they with their sharpness pressed the *Periosteum* and adjoining parts, the first cause of dolour discovered itself; but the second cause, when

when the extremities of the broken Bone and by their pressure, compelled the Humours in the small passages of the bordering parts to stagnize, wax acid, and irritate the small Fibres.

But when the Fibrils were thus disturbed by the points of the Bones and acci- Humours, the Animal Spirits could not be determinated rather into this than into that Muscle, but without distinction, rush- ed into all disturbed parts ; and if (though but in a small quantity) they approached nigh to certain Muscles, they could not enter and flow in, by reason of the passage of those Muscles obstructed by the stagnizing Humours. And although some Spirits had flowed into the same Muscles, yet all their tendency was was to move one extremity of the cutting broken Bone to the part, the other to another ; whence proceeded nothing but *Vellication*, *Pressure*, and *Renovation* of the dolour. Hence the cause of the imbecility of motion is sufficiently manifest.

I, being called presently, set the Broken Bones, and then my principal end was to restore the circulation of the *Bloud* and *Humours* ; for without doubt the Bloud was here and there stagnized. Therefore, to temperate the peccant Acidity, I washed the affected part with *Spirit of Wine*, which a little *Gum Ammoniac* was dissolved

and for the same end I applied a Plaister composed of *Diapalma*, *Bolus*, *Spirit of Wine*, and *Oyl of Camomil*: Then for retaining the Bones so lately set, I used *Ligatures* and other things fit, renewing these by certain intervals; and so the Patient in six weeks time could again walk.

I am not willing in this place to say, that a Fracture made transverse may more easily be retained than an oblique Fracture; nor that it is for the most part accounted a good sign of restriction, if the great Toe of the Foot directly respect the Knee, seeing these things are well known. Nor shall I endeavour to render a reason why the dolour is mitigated after the Bone is set; because it is known that this is effected by removal of the first cause of the Dolour of which I so lately spake. But, before I conclude, I purpose to shew how the *Callus* is induced which conglutinates the fractured Bones.

When the *Circulation* of the Bloud and Humours is again restored, as well in the fractured Bone as elsewhere, then certain Particles, issuing from the Pores of the Arteries, pass through the small passages of the Bone; and when they come to the extremity thereof, they can proceed no further by a right Line, because the passages were interrupted by the Fracture; therefore they turn to the sides, where (adhering

ring to the Bone, and each to other constitute a *Callus*, which again cover the Bones.

This *Callus* in the aged and weak is difficultly generated, by reason of the gross and viscous Blood, which cannot pass through the streight passages of the Bones. Therefore, in such a case, the more gross Particles of the Blood must be attenuated by 3j. of the Stone *Osteocolla* daily taken. Yea, it will not be injurious, if powdered the same stone be mixed with the Plaister that is externally applied.

But in our Patient the matter was farther otherwise: For the *Callus* extended it to a very unseemly bulk; wherefore I applied a Plaister of *Frogs* with *Mercury*, to the end that this Plaister should so attenuate certain Particles of the *Callus*, that they might fly away; and also a good *Ligature* that it might so compress the *Callus*, as nothing new might have access thereunto.

Thus I put an end to this *Observation* after I shall have told you, that I commanded the Sick-man's Leg always to lie extended; and took care that the Sole of the Foot might rest upon a small Pillow, in the middle of which was an hole. For otherwise (as experience testifies) a *Gangrene* might have invaded the bottom of the

because the Vessels and small parts
and for the parts are vehemently compressed
and lying.

and there are some who in a Fracture of
the tibia (as this was) commend viscos
ings, which I reject as noxious; because
a body without exercise *Obstructions* do
not a little augment, which (on the con-
trary) should rather be diminished.

OBSERVAT. X.

Of a Dislocation of the Shoulder.

A Man Thirty two years of Age, fall-
ing from a Coach, suffered a Dislo-
cation in his left Shoulder, so that the head
of the Bone, fallen into the inferiour part,
was the cause of a certain eminency there;
whilst, on the contrary, in the superiour
part, was discerned an unusual Cavity. The
patient complained of very great pain, and
could not move his hand by the anterior
part to his Forehead, nor by the posterior
part to his Neck.

For the Bone, fallen from its seat, com-
pressed the *Periosteum* and adjoining parts,
whence arose pain, which was augmented,

F

be

because in the small passages of the parts compressed and distorted, the Humour stagnized, waxed acid, and shook the small Fibres.

He could not move his Arm as formerly, because the head of the Bone, thrust from its former Cavity, no longer (as before) enjoyed an hollow and slippery place, requisite for its motion ; also hence was the occasion that the Animal Spirit could not enter (through the small passages obstructed by the stagnizing Humour and compressed by the dislocated Bone) into the Muscles and excite them ; hence it happened that no motion could be, because the head of the Bone did more and more compress the parts adjoining ; whence arose a new excitation of dolour, which also induced no small impediment to the due performance of motion.

I, being called to the Sick, repositied the dislocated Bone, and then the motion presently returned ; there was indeed some dolour present, because the acid Humour stagnizing did (as yet) in some measure irritate the Fibrils ; nevertheless the pain was very much diminished, because the head of the Bone, now contained in its proper Cavity, did no longer press upon the sensible parts.

The Bone being set, I endeavoured (by things temperating Acidity) to dissolve the stagnating

agnizing Humours, and restore to them
 their due Circulation; wherefore I washed
 the affected part with *Spirit of Wine*, in
 which *Gum Ammoniac* was dissolved; and
 applied a Plaister, (composed of *Spirit of*
Vine, *Bolus*, *Diapalma*, and *Oyl of Camomil*)
 and then put Lint wrapt up like a Ball, un-
 der the Arm-pit; and by this means the
 patient was healed in a short space of
 me.

Peter Pigræus a French Author, and Chy-
 rurgeon worthy of praise, commends *A-*
stringents to a Bone lately repositied; but
 be it spoken with the leave of so famous
 man) in this he is egregiously deceived:
 for *Astringents* augment *Obstructions*, which
 should rather be diminished.

Paulus Berbette wills, that the influx of
 Humours (in this case) be prohibited, but
 improperly; because that influx being na-
 tural, should not be stopped. That man
 undoubtedly saw in *Dislocations*, the near
 adjoining parts often elevated into a Tu-
 mour. Also he observed by frequent expe-
 rience, that *Frankincense*, *Mastich*, *Bolus*, and
 the like, removed this Tumour: But when
 he judged this Tumour to be produced
 from an influx more copious than usual;
 and when, according to this stated opinion,
 he thought his Medicaments did therefore
 help, because they prohibited that Influx,
 then (I say) he erred. For *Obstructions*

were the cause that the Humours were coacervated and elevated into a Tumour and so waxed acid ; and the said Medicaments onely profit , because they remove the Obstructions, and temperate the Acidity.

Having now spoken of the *Dislocation* of the Shoulder suddenly happening ; there is yet another *Dislocation* slowly invading and more slowly sanable, *viz.* when by External force the *Ligaments* of the Shoulder are contused, so that the small passages are distorted, whence the Humours (circulating through the *Ligaments*) do there subsist, and in process of time insinuate themselves into the Pores of the *Fibria* (of which the *Ligaments* consists) and extend those Pores, not according to the breadth, but according to the length of the *Ligaments*. For the *Ligaments*, whose motion is, are often extended in length even so, the *Ligaments*, which otherwise were wont to contain the head of the Bone in its Cavity, are now so far prolonged, that the Bone falls out of its proper seat.

This *Dislocation* is easily restored, but the Bone repositied is very difficultly retained in its place.

External Medicaments, helpful to retain the Bone reduced to its place, are such as consist of much Volatile Salt ; because Volatile

le Salt can attenuate the Particles inherent in the Pores of the Ligaments, and so force them out, and restore the circulation of Humours. But the cure will be rendred more easie, and in less time accomplished; we contribute help to the external Medicaments, by a Decoction to be inwardly taken, consisting of *Lign. Guaiacum*, Root of *arsaparilla*, *China*, and other Medicaments bounding with much Volatile Salt.

*The end of the first Decade of Chyrurgick
Observations.*

F 3

DECADE

D E C A D E I

OBSERVAT. I.

Of the Puncture of a Nerve.

A Young Man aged Twenty years exercised in Chyrurgery, with the Puncture of a Lancet hurt the middle Finger of his left Hand, about the middle Article; whence arose pain at first not very great, but by the next morning it was vastly augmented; and besides redness invaded the whole Finger, attended with burning heat and swelling, and the Callosities (in places nigh the Wound) was separated, pallid, and insensible.

After I had accurately considered the *Phænomena's*, I concluded the Nerve to be hurt by the Razor, whence at first arose but a small pain.

But by reason of the small passages bordering on the wounded Nerve, Humours (interrupted by that small Wound) otherwise freely circulating, were constrained to subsist about the Wound, and there

caus

same acid, and so by the Humours following them were driven to the wounded Nerve, where (permixt with the Animal spirits hastning through the Nerve) they excited a certain effervescency, by reason of the Volatile Salt, contained in those Animal Spirits; and by this means the acid Particles (constituted in motion great enough) with the acuteness of their sides, egregiously vellicated the Fibrils of the wounded Nerve, and so excited that grievous dolour I even now spake of.

The acid Humours thus forced into an effervescency with the Animal Spirits, not only irritated and disturbed the Fibrils of the wounded Nerve, but also the Fibrils of the adjacent parts (yea of the whole Finger) whence many small passages were so distorted, that the Bloud and Humours settled in them, and (by a short delay here) assumed the nature of Acidity, whence the heat and tumour of the whole Finger, or inflammation of the same, were readily induced.

The same acid Particles, exercising their Effervescency, had wholly cut in sunder those Fibrils which knit the Skin, sited round about the Wound, together with the subjected part, and so the *Cutis* was separated, pallid, and insensible; because those (often-cited) acid and cutting Particles had cut in sunder very many Fibrils con-

stituting the same *Cutis*; which Fibrils crimping on heaps produced so many and so pertinacious Obstructions, that the circulation of the Blood, Humours, and Spirit through the *Cutis* was totally impeded.

Things being thus, I judged the Wound sufficiently dangerous, and therefore the cure thereof to be diligently set about; having long before seen a French Souldier whose Nerve about the Cubit of the Arm was but lightly prickt with a Sword; who after a long series of time, and many difficulties overcome, was with very great care and pains at last restored to his pristine state of health: Yea, I also saw an Husbandman, the Nerve of whose Thigh was wounded with a Leaden-bullet shot out of a Gun; this man (a Convulsion being excited) died in a short time after the wound was inflicted.

I had often before mixed Oyl of *Turpentine* with the acid Oyl of *Vitriol*, and saw an Effervescency to arise thence; yea, with my hands I have felt sufficient heat, produced in the Glass containing those Liquors. Hence I did without difficulty perceive how powerfully Oyl of *Turpentine* did resist Acidity, and (by consequence) how excellently serviceable it would prove in this our case; wherefore I poured Oyl of *Turpentine* (before made sufficiently hot) into the Wound, that so the Particles thereof

of (put into greater motion) might more easily and more profoundly penetrate, and consequently act more powerfully in tempering the peccant Acidity. Then I applied *Paracelsus* his *Stiptick Plaister*, which also temperates Acidity. Afterward on the *Finger*, and indeed all over the *Hand*, I laid a doubled Cloath moistned with a Lavament consisting of *Spirit of Wine*, *Water of Elder*, *Camphire*, and *Salt-prunella*; changing these twice a day, and with an Instrument removing the *Cutis*, already separated from the subjacent flesh: Thus our Young man was cured in a short time.

In the mean while it is worthy observation, that I saw a necessity of being industriously careful to prevent the access of the ambient Air; because that contains in it self Acidity, which is apparent thus, *viz.* because it coagulates *Milk*; yea *Bloud* it self, when extravasate, is in a short time coagulated by the Air; whereas the same is found to persist in its wonted Fluidness for several days, if it remain in the Vessels of any *Carkass* where it is free from the ambient Air.

By the aforesaid it is sufficiently manifest, why there is much less dolour in a Nerve wholly cut off than in that which is onely prickt, or but lightly wounded: for when a Nerve is totally cut in sunder, one Extreimity is retracted to this part, the other

ther to another, and is absconded by the flesh, so that the acid Humour (inherent in the Wound) and the ambient Air, cannot have access to the Nerve.

The famous *Sylvius* deduceth extreame dolour, and other *Phænomena's* occurring in a Wound of the Nerve, from a far other cause than I do. For he thinks some of the Fibrils in the Nerve being cut, the other (as yet intire) suffer so much the more by a continued stretching produced by the Animal Spirits; and that hence arises *Dolour*, Convulsion, and other Evils frequently observed in such cases: But (with the leave of so great a man) this Cause pleaseth me not, seeing from it I cannot conclude that the pallid and insensible *Cutis* is frequently separated from the adjacent part. This Cause of his is repugnant to Experience, which teacheth that the Puncture of a Nerve is more dangerous than if the Nerve were cut to the midst: For in a Nerve cut to the midst many more Fibrils are cut, than in a Nerve prickt, in which often but a few Fibrils onely are hurt. But it is certain that *Sylvius* did himself believe his own reason not sufficient, seeing in the same Twenty third Chapter of his Second Book he saith, that *Phænomenons* exhibiting themselves in the Puncture of a Nerve, seem to him more like a Dream, than to any observation made by the Senses.

There

Therefore, that I may put an end to this *Observation*, I say, that in the wound of a Nerve Acidity is peccant, and that such Medicaments should be applied as infringe Acidity: For this Cause is commended *Oyl of Wax*, and *Ear-wax*; but acid things are not fit here to be used, which was well observed by *Felix Plaiterus*, who (in his Book of Observations, page 468) saith, Acidity is very inimical to the Nerves.

OBSERVAT. II.

Of Dolour of the Head.

A Man Forty two years of Age was vexed with a most vehement dolour of his Head, and indeed that only about the Temple of one side, where it remained fixed; which *Affect* if any one will for this cause insigne with the name of a *Clavus*, let him for me.

I judged the cause of this Dolour to be an Acido-corrosive Humor, there lying hid and stagnizing by reason of Obstruction very pertinaceous.

There was one (studious of Medicine) present, who perswaded himself that the
cure

cure of this Affect would be best performed by *Sudorificks*; which, by reason of the pertinacy of the Obstruction in this Disease, I judged equally as impossible as in the *Panaritium*, which I never heard to have been healed by *Sudorificks*, though the same Affect derives its original from an Acido-corrosive Humor: for it is but a very small portion of the *Sudorifick* that can arrive to the pained part.

Therefore I rather applied to the affected part *Powder of Cantharides* (with his own Spittle formed into a *Vesicatory*) about the evening, and left it on all night.

The famous *Sylvius* to *Cantharides* addeth *Vinegar*, thinking there would thence arise a certain Fermentation, and so the *Vesicatory* operate the better. Yea the most Learned *Willis* also adjoyns acid things to many forms of *Vesicatories*; which I my self have often imitated, but as often observed, that after the space of a whole day no Blisters have been raised by the *Cantharides*, when I mixed them with *Vinegar*, viz. for this reason, because the Volatile Salt of the *Cantharides* was enervated by the *Vinegar*, in which Salt the principal Virtue of them consists.

Coming the next day, I beheld a large Blister raised by the *Cantharides*, and understood that the sick-man was wholly eased of his pain.

But I could not perswade my self that this

this dolour was removed by the Blister raised, and by reason of the Water flowing from the same when opened. For the Water that issued out, was neither sharp of taste, nor could be such; because had it been so, it must needs have inferred some dolour on the subjected skin before apertion of the Blister, which notwithstanding it did not, although the *Cutis* (the *Epidermis* being by this means removed) be of it self sufficiently sensible, as is apparent, because it is often hurt, and feels pain, by the ambient Air.

What was it then that removed that Dolour? The Volatile Salt of the *Cantharides*, which (by the Vapours passing out through the skin) stirred up to a sufficiently swift motion, penetrated to the Acid-corrosive humor, and tempered and cut the same, and took away the obstruction.

But whence then did the Blister derive its original? I say, that in the mean time, when the more volatile Particles of the *Cantharides* had penetrated far enough for correcting the peccant Humor, other more grosse and more acid Particles subsisted about the *Cutis*, in which they brake certain Fibrils, which (crisping up together) did so obstruct the small passages, that the Humors in circulation were partly impeded, and so gathered together in the Superficies of the *Cutis*, and elevated the
Cuticle

Cuticle into the form of a Blister ; which might easily happen , because the Fibrils ; which joyn the *Cutis* with the Cuticle were now broken in sunder by the aforesaid more gross and more acid Particles of the *Cantharides*.

But some one may perhaps here say, that that Water should not have been there : congregated, but rather have passed out by the Pores of the Cuticle, by which we so often see Sweats to issue out. To him I answer, the most gross Parts of the *Cantharides* remained and adhered about the Cuticle, and very much constringed the Pores thereof ; which should seem strange to no man, who (even but once in his lifetime) hath seen how easily by heat of fire Parchments may be crumpled up, and that the common Fire which so crumples them, doth also sometimes excite small Blisters, wholly like those that are raised by *Cantharides* ; but because the Pores of the Cuticle were so closed, therefore the Vapours (otherwise freely exhaling) were accumulated , and augmented the abundance of Humor contained in the Blister.

If any man, not as yet plainly convinced by our way of reasoning, believes that the long lying on of the *Cantharides* (by reason of the Blisters raised) helps until his mind be altered by the Authority of some approved Writer , I would have him go

to *Lazarus Riverius*, who (in his *Third Century, Observation 4.*) declares, that a *Vesicatory* left on but a quarter of an hour, had in that time wholly removed the dolour of a Bees sting, no Blisters being raised by reason of so short delay.

Francis Redi, in a Treatise of Insects, affirms, that he had seen a white shining Humor (undoubtedly Acido-corrosive) flowing out from the Stings of Scorpions; and it is very probable, that such an humor (in the Punctures of Bees) doth in like manner flow from their Stings, which is the cause of dolour. Hence it is now manifest, that the dolour, of which *Riverius* speaks, vanished, because the acid Humor which flowed out from the Bees Sting and excited dolour, was tempered by the Volatile Salt of the *Cantharides*.

But that the Stings of Bees are hollow, no man will wonder, who hath at any time seen the Glass-Pipes made by Art, which are used for examining and beholding the Bloud and other Liquors through a *Microscope*; seeing they, though small as an Hair, do notwithstanding enjoy a certain Cavity.

OBSER-

OBSERVAT. III.

Of the Contracture of a Tendon after a Fracture of the Shoulder Bone.

A Young man, aged Twenty two years after a Fracture of the Shoulder bone healed, could not extend his inbowed and rigid Arm.

The more remote cause of this Evil was the Surgeon's negligence, who left the Arm inbowed for five or six Weeks; whereas he should, as often as, and every time he bourn up the Fracture, have frequently extended the same, as a thing of special note in *Chirurgical Practice*.

But this is not therefore a wonder, seeing we daily see a Bow which hath for some time remained unbowed, not to be easily bowed again: Yea, who doth not sometimes experience in himself, how difficultly he is able to go and extend his feet, after he hath sat unmoved in a Coach but for one onely day.

But forasmuch as this Comparison doth

need

not as yet sufficiently illustrate the matter, my purpose is somewhat more narrowly to search out the cause of the same.

When the Arm was inbowed about the Cubit, the Tendon of the two-headed Muscle, bowing the Cubit, was contracted (but what is here spoken of the Tendon of the two-headed Muscle, may be understood of other Tendons of Muscles bowing the Cubit) and so the Pores of the Fibrils, of which the Tendon consists, before round, are changed into oval, so that the greater Diameter of the Pores hath respect to the Latitude of the Fibrils.

In the mean while the Humors passed out from the Pores of the Arteries, which (by reason of motion often instituted) freely perfected their circulation, now (by reason of rest) did in some sort subsist in the Tendon. Yea, in a short space of time, certain gross Particles of those Humors, deeply insinuated themselves into those Oval Pores of the Fibrils, and conserved and confirmed them in that oblong Figure; and in process of time those recited Particles so pertinaciously adhered in the above-named Pores, that they could not by any means be expelled thence: Hence the Tendon of the two-headed Muscle was made shorter; no otherwise than as we see new Ropes, or new Cloath, sprinkled with Water to shrink.

G

Hence

Hence also the said Tendon appeared hard and rigid; whence it is (as I judge) sufficiently manifest why the Arm could not be extended: for the Muscles, extending the Arm, could not perform their wonted action, being before contracted; these could not be contracted, but the Tendon with its two-headed Muscle must needs begin to cease acting. This was impossible; by reason of the Pores of the Fibrils (obstructed by the aforesaid Particles) by which the Tendon was tanned.

The cause of this *Phænomenon*, by this means found out, the method of curing was without difficulty understood, viz. that it was behooful to expel the Particles obstructing the Pores; wherefore I used a Fomentation of Wine, in which were boiled Herbs, and other things abounding with much Volatile Salt; and then I applied a Plaister of Frogs with *Mercury*, and (after I had continued that for several days) I often commanded the Patient to hold some weight in his hand, that so the Particles inherent in the obstructed Pores, and by the aforesaid Medicaments in some measure macerated (in the Dutch Idiom *los geweyckt*) might by a certain force be ejected. By this means the Patient recovered his pristine Sanity in a short time.

OBSERVAT. IV.

Of a Vein Cut.

A Man, aged Thirty six years, commanded a Vein to be cut in the Flexure of his Arm; the next day several Ounces of Limpid Humor flowed out from the Orifice of the Vein cut, and that Efflux continued for several days after; but the Arm in the mean while was neither affected with dolour nor with redness. A rare *Phænomenon* indeed! which I cannot remember ever to have hapned in all my Practice.

Perhaps some small Lymphatick-Vessel lay above the Vein to be cut, which in cutting the Vein was wounded, and (by certain Particles stagnizing and waxing acid high the Orifice of the small wound made) irritated and continually gently convulsed, sent forth this abundance of Lymphid Humidity. I tempered the peccant Acidity high the Lymphatick-Vessel with Oyl of Turpentine poured in hot; and so compelled the Aperture to close, and the Lymphid Humor (in a short time) to subsist,

sist, or rather again to circulate by a natural way.

I likewise knew a certain *Tyro* in *Chyrurgy*, who in Section of the Median-Vein,, wounded a subjected Tendon, whence arose dolour and redness, which being removed, at length was inferred so great a Contracture of the Tendon of the two-headed Muscle, that the Arm having now for a long time been inbowed, could not be extended by the Patient, whose Cure was effected even after the same manner as I shewed in the foregoing *Observation*.

That is to say, some Humors stagnizing about the wounded Tendon, waxed acid and (irritating that Tendon) caused the Animal Spirits to flow in greater abundance than usual; by which means the Tendon (with the Muscle annexed) was contracted, and the Arm incurvated, which afterward remained so inbowed, by reason of certain Particles which obstructed the Pores of the Fibrils in the Tendon, after the same manner as I (in the preceding *Observation*) have largely explained.

But dolour and redness, which often attend the Puncture of a Tendon, acknowledge the same Cause, and require the same Cure that I proposed in the Puncture of a Nerve.

Many Chyrurgeons, when they would evacuate gross Bloud, make a large Orific

Orifice of the Vein; and when they purpose to let out Blood more subtile, a lesser Orifice; but evily. For if the gross Particles of the Blood (mixt with the more subtile) can accurately enough circulate through the Arteries and Capillary Veins, is it not more clear than the Sun that no Orifice (in the cutting of a Vein) can be made so very small, but that with the more subtile part of the Blood, that which is more gross may be expelled by the same. Which the most acute *Bayle* (perhaps *Boyl*) did well observe.

The famous Mr. *Leeuwenhoeck*, by a *Microscope*, discovered Humane Blood to consist of small red Globes floating in a Chrystalline Humor; which, when the Blood (after cutting of a Vein) received in a Porringer, was coagulated, their motion being lost, descended to the bottom, the Chrystalline Humor (through which they were before moved) floating above.

Certainly a strange and pleasant Invention, but of no use in the *Medicinal Practice*. For they, who (from this ground) endeavour to deduce the Causes and Cures of *Fevers*, and other Diseases, seem to me to trifle out the time, and lose all their labour; whereas rather, had they respect to Acidity, Salt, Bitterness, Sweetness, and other properties (undoubtedly contained in the Blood) they would certainly thence

reap far greater understanding in cure of the sick.

Many Authors prescribe the opening of the *Cephalic-Vein*, rather than of the *Median* or *Basilic*; but unadvisedly. For I have often found by experience, that that Vein easily recedes from its proper place, and so when it is cutting shuns the wound intended.

I have often observed in fat Boys a Vein (presently after the usual Ligature) to be sufficiently tumid and manifest; but if not quickly opened hath soon disappeared, viz. when the Blood pressed downwards the subjected and readily-yielding Fatness, that so (notwithstanding the Ligature) it might again freely pass through the Vein.

After the cutting of a Vein, when the Vein seemed sufficiently closed, I have often beheld the Blood issuing out thence with great violence; and indeed from no other cause, than that the *Chyrurgeons* first applied their Ligature and Lint compressing, and afterward inbowed the Arm: For by this means, the Lips of the Orifice, which before (in the extension of the Arm) were conjoyned, again separated each from other when the Arm was inbowed.

Oftentimes a certain Lividness is found left after the cutting of a Vein, the cause of which is too frequently the evil use of
Vine-

Vinegar, in which is imbibed the Lint compressing, which is put upon the Aperture of the Vein; whereas it is indeed sufficiently manifest, that the Bloud is coagulated by Acidity, and acquires a Livid and black colour.

Before I put an end to this *Observation*, I think fit to add the counsel of *Peter Pi-græus*, that we may thence (if possible) reap some further benefit.

That very famous and most dexterous Chyrurgeon commands, that after the cutting of a Vein, the Aperture should be appointed with Oyl, if it be intended again to extract Bloud the same day from the same Orifice without a new made Aperture.

But if Oyl can, though for a short time applied, hinder the closure of the Orifice of a Vein cut, how evilly do they act, who use Oyl in the cure of Wounds; and for no other reason, than because they have seen the same thing done by their Masters? As for Example: *Oyl of Saint-Johns-Wort*: For if *Saint-Johns-Wort* profits Wounds, by reason of its Volatile Salt temperating Acidity, why do they not rather extract the *Tincture of Saint-Johns-Wort* by *Spirit of Wine*? into which it much more easily and more copiously transfers its Volatile Salt, than into Oyl, which hurts Wounds; because that obstructing the Pores and Passages, stops

the Circulation of the Blood and Humors: whereas that Circulation should rather be excited, to which excitation *Spirit of Wine* is not a little available. For it egregiously temperates Acidity, which usually coagulates the Blood and Humors in Woundss, and renders them unfit for Circulation. But least I should be found too prolix in this matter, I here put an end to this *Observation*.

OBSERVAT. V.

Of the Cracking of a Tendon.

A Woman, aged Forty three years, after greater Labour than usual, in her right Hand suffered an impotency to motion, with Tumor and Dolour; and when the Tendon, sited in the Hand, was pressed with the Finger, it gave a sound.

This is an Affect, which often occurs in the Practice of Chyrurgy, though it hath hitherto been treated of by no man, (that I have heard of) therefore I shall call it *Crepitus Tendinis*, or the Cracking of a Tendon.

By this Woman's unaccustomed Labour, the

the Fibrils of the Tendon were so distorted, that the Humors (impeded in their Circulation) there subsisted and were coagulated; whence the Impotency of Motion, Tumor, Dolour, and Cracking of the Tendon, were most readily induced.

I feared, that the Humors stagnizing in the Tendon, would be daily more and more coagulated, and thence that Tumor take beginning, which is known to many by the name of a *Ganglion*.

Yea, I suspected that certain Particles of the subsisting Humors would be received within the Pores of the Fibrils, compounding the Tendon, and obstruct them so, as (in the Third *Observation* of this *Decade*) we shewed to be apt to render them too propense to induce both *Contracture* and rigidity of the Tendon.

Wherefore, judging it high time to set about the Cure, I ordered *Spirit of Wine* to be enkindled in such wise, that the Vapour arising thence might surround the hand affected; and this being done, commanded a Plaister of *Frogs*, with *Mercury*, to be applied. By this means the coagulated Humors were dissolved, the Obstructions removed, and the Patient (in a few days) restored to her pristine state of health.

OBSER-

OBSERVAT. VI.

Of an Hæmorrhagia, from a Varicous Ulcer of the Tibia.

IN the right *Tibia* of a Woman aged Forty years, from an Internal cause, an Ulcer was formed upon a sufficiently large *Varix*, which yielded to no Remedies. This Evil was also attended with a Tumor, and a large *Erysipelas* very troublesome, which in like manner could not be removed by any Medicaments.

After a few days the *Varix* was unexpectedly opened (by the Acido-corrosive Humor there inherent) from which issued out at least *lib. ij.* of black and (as the standers by affirmed) very stinking Blood.

I ordered that *Placentula* (in a form somewhat hard) composed of Medicaments temperating Acidity, which I commended in the Sixth Observation of the First Decade, to be applied by the Chyrurgeon, and so not onely closed up the *Varix*, but also tempered that Acidity inherent in the Ulcer, which otherwise (by its corrosion))

posion) would easily again have opened the *Varix*, and besides have much impeded the cure of the Ulcer.

It was wonderful to see, that after the *Varix* (unexpectedly opened) had cast out so great abundance of Blood, the *Erysipelas* and other Symptoms soon vanished, and the Ulcer daily shewed it self in a state more and more meliorated; so that within the space of three Weeks (by the only help of the aforesaid *Placentula*) it wholly closed.

I now intend not here to treat of the Original and Cure of the *Varix*, Ulcer, and *Erysipelas*, having accurately enough discoursed of that in the Sixth Observation of the First Decade; because a dish of Crambe twice cocted was always deadly to me, if to any other man.

But my intention here, is to confirm what I have spoken by Experience, and hath been before by me treated of (in the said Sixth Observation of the First Decade) viz. to shew that undoubtedly the *Erysipelas* and Ulcer derived their Original from Acidity, and likewise how opportunely I instituted the Section of the *Varix* in that varicous Ulcer of the *Tibia*.

But from the Example before-alleadged these Conclusions may easily be drawn: for neither the *Erysipelas* nor the Ulcer would give place to any Remedies, so long as

as that *Varix* was replete with so great abundance of black and (undoubtedly by its long delay) acid Bloud, which no sooner issued out , but the *Erysipelas* vanished and the Ulcer closed in a short time after.

OBSERVAT. VII.

Of a vast Contusion of the Arm.

A Matron, aged Fifty six years, after a Fall from on high, complained of an unaptness to motion, and very great dolour of her left Arm, which appeared very much swoln, although of the same colour with the sound skin. I perceived by the Pulse a more than usual swiftness of motion in the Bloud, viz. by reason of the Terror which the Patient had conceived by the Fall.

After we had very accurately inquired into the cause of the Evil, we could not (through the whole length of the Arm) find either Fracture or Dislocation, but a very great *Contusion* of the whole Arm, so that much of the Extravasate Bloud, and also of the Humors (adhering in the small passages)

passages of the Arm distorted by the *Con-*
sion) stagnized, and in a short time wax-
 acid ; whence that Imbecility, Tumor,
 and *Dolour*, may rationally be concluded to
 have derived their Original.

Some, to render the motion of the Bloud
 more pleasing, do here presently cut a Vein ;
 whereas I, on the contrary omitted the open-
 ing of a Vein, & gave to the Patient an *Ano-*
ine Tincture (prepared of *Opium* and o-
 ther things) which much more securely,
 and with greater Utility diminished the
 motion of the Bloud.

After some few hours, I exhibited to the
 sick a sudorifick Powder, which would al-
 so temperate the Acidity of the Extrava-
 gate Bloud and stagnizing Humors ; this I
 repeated the two following nights with
 good success. This Powder consisted of
Diaphoretick Antimony, *Crabs-eyes* prepared,
Salt-prunella Antimoniat, and other things ;
 and hereby the dolour was in no small
 measure remitted, and the Extravasate
 Bloud was driven out to the *Cutis*, which
 then (all over the Arm) from the Shoul-
 der to the Fingers was very livid, yea wax-
 ed black.

The Chyrurgeons, that were present
 with me, did in the beginning of the Cure
 (without my consent) anoint the whole
 Arm with *Oyl of Roses*, which hurts not so
 much by reason of the *Roses*, as by reason
 of

of the *Oyl-Olive*. For although this might do some good, yet it could not profit, unless it could have penetrated to that place where the Extravasate Blood and stagnizing Humours lay; but so far it could not penetrate, unless in form of Vapour, and the heat of our Bodies is too weak to convert *Oyl-Olive* into such Vapours; seeing indeed a sufficiently strong Fire made of Wood and Coals, is not of force sufficient to reduce the Particles of *Oyl-Olive* (put into a Pot) into the form of Vapours.

Therefore the *Oyl-Olive* was so far from doing good, that (as I judged) it rather did hurt, because by its stringy Particles it augmented the Obstructions, and so caused the Blood and Humors yet more to stagnize; and besides (by its closing the Pores of the Skin) it hindered the access of other Medicaments to the place affected.

If common *Roses* be cold as many think, I should reject them in this case; but because from their bitterness and penetrating Odour the contrary may be judged by those who (laying aside their prejudices) will rather follow Verity than Antiquity. Therefore I in this case condemn *Oyl of Roses*, by reason of the *Oyl-olive*, but not by reason of some Particles of the *Roses* mixed therewith.

The same Chyrurgeons applied to the whole Arm (anointed with *Oyl of Roses*) that:

that *Defensive Plaister*, the description of which is found in the *Ultrajectine Pharmacopæia*; which indeed I do not here wholly reject, because it containeth many Ingredients temperating Acidity; as *Bolus*, *Terra Sigillata*, *Lithargyry*, and other things; but to what end should here be added *Myrr-Berries*, *Oyl of Myrtles*, and *Austere Red-tine*? These indeed bind up the Pores of the Skin, and so wholly impede the penetration of other fit Ingredients to the affected part.

Experience did in a short time confirm the truth of my Assertion, when many Pustules (dispersed through the whole Arm) came in sight.

Wherefore I prescribed the following *Unguent*, which I substituted instead of the *Oyl and Plaister*, as being a Medicament that would powerfully resist Acidity, and consequently well dissolve the coagulated Blood and Humors.

Roots, Of the *Flower de Luce*.
Of *Calamus Aromaticus*,
Of *Bryony*, of each \mathfrak{z} ss.

Herbs, *Rosemary*,
Betony,
Sage, of each M. ss.

Berries, Of *Juniper*,
Of *Bays*, of each \mathfrak{z} iij.

Boyl

Boyl these in a close Vessel with *French-Wine*, and to two pound of the Colaturee add

Of Gum Ammoniac ʒij.

Of Salt of Tartar ʒj. *Make a Lavament.*

By this means the Pustles vanished, the Dolour was diminished, the motion of the Arm gradually returned, and the *Livida* colour was turned yellow.

Then (the Chyrurgeons willing the Medicaments should be changed) instead of the *Defensive Plaister*, which they again proposed, I prescribed a Fumigation temperating Acidity, which consisted of *Bay-Berries*, *Juniper-Berries*, *Frankincense*, *Mastick*, *Myrrh*, and other things. For if these latter could help in the aforesaid Plaister where they lay bound up by the Suet and Wax, they must needs be much more profitable, when (in the form of Fume) they could fly up and surround the Arm, its superiour part being covered; and so, being forcibly enough agitated, could enter the Pores of the Arm, by that time well opened by the heat.

After this I commanded *Spirit of Wine* to be burnt, the Vapour of which ascending to the Arm, and entring through the Pores

Pores infringed the Acidity, which had in no small measure coagulated the Bloud and Humours ; and by that means the Patient was healed, the dolour and yellowness removed, and the motion of the Arm restored.

I most assuredly perswade my self, that the Contusion would not have been so great, if a Fracture of the Bone in the Patients Arm had also been concomitant : For the Bone when broken, recedes and confuseth no more ; but when the Bone remains entire, and consequently (by reason of its hardness) makes strenuous resistance, and when there is (on the other part) a solid Body contusing, then the interstanding Flesh is no otherwise pressed on either part, than as if it were put under a Press, and so it is in a strange manner contused.

And this is no more than what our daily practice confirms ; in which I have often observed a Contusion, where the Bone hath been broken, to be much less than where the Bone hath remained unhurt.

In this Cure my fear was, that the Extravasate Bloud should be so much coagulated, that it could not be afterwards dissolved ; and so might at length become so very acid and corrosive, as to infect the adjacent parts with a Gangrene. For it was not long before that I was called to a

* H *

young

young Man, who had for eight days neglected a Contusion of the *Tibia* ; after that I was called , and (seeing how it was) compelled to open the contused part with a Lancet, I perceived many sufficiently large Clots of Blood, firmly coagulated black and putrid , which had (in some sort) infected the Cavity in which they were contained, with a Gangrene ; which notwithstanding I in a short time removed by washing it with *Spirit of Wine*, and by inspersing the Pouders of *Myrrh* and *loes*.

OBSERVAT. VIII.

Of a Ganglion in the Hand.

A Youth, aged Sixteen years, complained of a Tumour hard and painful which (sited in the upper part of his right Hand) in magnitude equallized an Hazee Nut, and was of the same colour with the *Cutis* ; and there was now near three Months passed since the Patient (by unaccustomed labour) was affected with this Evil.

The Tendon lay in the upper part

the Hand, the small passages of which were by that unusual labour) so distorted, that the Humors in their circulation meeting with many Obstructions, stagnized in those passages of the Tendon, and then by the Humors following them) were forced up to that Membrane, which invests the Tendon; where, having formed a Cavity for themselves, they were collected, and the more viscous Particles were (in some sort) concreted, the more thin Particles in the mean while passing out. Hence the Tumor (of which I here treat, and is by many distinguished by the Name of a *Ganglion*) derived its original.

I, with my Thumb, strongly compressed this Tumor, and saw it, by this means, suddenly to vanish, viz. when the Humors constituting the Tumour) were again thrust out on every side through those small passages of the Tendon. But because the Obstructions could not be so removed, I feared their return: therefore (for attenuating the Viscous Humors, and removing the remaining Obstructions) I applied a Plaister of *Frogs* with *Mercury*, and upon that a sufficiently strait Ligature, which prevented the Viscous Humors, from gathering again (as before) in the aforesaid Cavity.

But when this Tumor had continued for some years, then it could not be removed by pressure of the Thumb; but I was constrained

streined to use a Wooden *Ferula*, not differing from that which School-masters use in chastizing Boys, (onely that in the middle thereof a certain portion of Lead lay infixed) and with one onely stroak of such *Ferula* (the Patients Face being turned backwards from his affected hand) I saw the *Ganglion* wholly to vanish, which had full three years vexed the Patient, whose Cure was then compleated in a short time after, by the aforesaid Plaister, and a strick Ligature.

OBSERVAT. IX.

Of a moveable round Tumour of the Lower-Lip.

A Young man Twenty three years of age, shewed to me a round Tumor on his Lower-Lip, movable and somewhat painful, which (in the mean while) was not a little troublesome by reason of its bulk, that equalized one of those Balls with which Children are wont to play, but its colour differed not from the colour of the Lip.

This Patient, three Months before, had

with his Teeth bit his Lower Lip, and from
 at time he perceived this Tumor. Now
 ere is scarcely any man (skill'd in Chy-
 rgy) that knows not how many very
 small Glandules are inserted, not onely in
 the other parts of the Mouth, but also
 the Lower Lip; one of which was un-
 doubtedly so hurt, that the Humors (pas-
 sing out from the small Artery, their pas-
 sage being shut up) settled in the Glandu-
 le, and by that means the small Glandule
 increased to such a large Tumour, as is here
 in this *Observation*) by me described.

Although this Tumour often occurs in
 the practice of our Art, yet I know no man
 that hath explained the *Cause* thereof, and
 but One onely that hath by Example
 described the *Cure* of the same, viz. *Job*
n Meeckeren Chyrurgeon of *Amsterdam*,
 who (if my memory fail me not) to this
 effect gave a name, which (in the Dutch
 tongue) is **een steen knoop**.

But why do you wonder? that so very
 small a Glandule should be extended to so
 great a magnitude? Consider, I pray,
 how much the magnitude of one and the
 same Womb differs in a Virgin, and in a
 Woman with Child. Peruse the Disputa-
 tion, which the most famous *John Mun-*
cks (*Ultra-jectine Professor*) published No-
 vember 20, in the year 1678. in which he
 declares, that the Womb of a certain maid

was so largely extended that it did contain
112 Pounds of Water.

Why do you yet doubt ? I shall here
offer yet one Experiment which comes much
near to our purpose. I my self, when I was
at any time above measure hurt by Colds
have often found the Glandules about the
Neck (which in a state of health I could
not find by the touch) to increase to
great a bulk, that they have exceeded the
largeness of a Pidgeons-Egg.

But now at last to hasten to the Cure
I say, Medicaments can neither be commodiously
applied nor retained in such a
place ; therefore I took away the whole
Tumour (at one time) by Section with a
Knife, and healed the remaining Wound
with *Honey of Roses* onely.

OBSERVAT. X.

*Of an Affect of the Month, by us
vulgarly called De Water-
Kanker.*

I Not long since saw a Man-child two years old (who had for three whole Months been afflicted with a Quartane Fever) and between his Upper-lip and Gum-I found an Ulcer (which took beginning four days before) sufficiently tending upwards, hollow, hard, painful, blackish, and ill-smelling.

The Bloud of this sick Child, by his acid and sowering Meat and Drink, as also by his long continued Quartane, was become much more acid than was fit, and (being such) did not so much settle any where, as between the Upper-Lip and the Gum ; because the Bloud and Humors are there easily coagulated by the cold Air, (admitted by Inspiration) also by the Reliques of Meats sticking between the Teeth, and by their delay there contracting sharpness.

The Bloud and Humors stagnizing did in time become very corrosive, and so not onely much vellicated the Fibrils of the Lip and Gum, but also broak in sundry many of them; and by this means a deep, hard, hollow, and painful Ulcer took beginning.

But that we may the better find out the reason of the soon-after-induced Blackness, I think good first to declare, that I, not long since, did (by the help of my *Microscope*) look upon a small piece of white Linnen, and all the Fibrils with which these Threads were twisted, appeared transparent as Ice; but every Thred, made of those pellucid Fibrils, were to the sight white; no otherwise than as Water appears pellucid, but the Froath (which consists of many Superficies of the Water, so superposited one above another, that much Air is contained within them) presents itself white to the sight.

But when I had burned this Linnen, not onely all the Threds, but also all the Fibrils of them presented to my sight (strengthened by the *Microscope*) a black colour, viz. because the Pores in the Linnen were much distorted by the force of Fire, and many Particles flew away from the burning Linnen in the form of Smoak, insomuch that the Solar-Rays (suffocated in those Pores) could not be reflected to my Eye.

Now

Now what Fire effected in the Linnen, the same did the Acido-corrosive Particles effect in the Ulcer, when they brake in sunder the Fibrils, and otherwise figured and changed the Pores of them; yea, they compelled many Particles to evaporate from the Ulcer in the form of Vapour, as was manifest by the stink.

But that I may remove from many their cause of wonder, that I should write, that Acidity concurs to the inducing of Blackness, I would have them to examine how good Ink may be made with a Decoction of Galls in Vinegar, in which filings of Steel have been first infused: Or (at least) let them cut a *Pome-citron* with a Knife, and they will soon see the Knife to wax very black.

Now the evil Odour of the Ulcer onely remains to be explained. Wherefore, that the aforesaid Comparison may in this place also be subservient to me, let any man smell to that ungrateful Odour which in burning of Linnen is wont to penetrate his Nostrils. For, what Fire acts in respect of Linnen, the same operates the Acido-corrosive humor in an Ulcer, whilst it corrupts many Particles of the Volatile Salt (which in an healthful state is in great abundance contained in the parts of the Humane Body, and in the parts of the Bodies of other Animals, as Distillation plainly

ly shews) changeth their Figures, and so causeth them, their Bonds with which they were before tied being broken, to fly away; at which time, by the Air, wherewith they mix themselves, forced into the Nostrils, they affect the Fibrils of the Nerves (subservient to *Smelling*) with too great trembling, and so to the Mind is exhibited a conception of evilly-smelling odour.

The *Phaenomenons* of this Disease, so often occurring in the *Praxis*, and by no man (that I know of) as yet sufficiently explained and discoursed of, it will be all one to me, whether (with *Hildanus*) it be called a *Gangreen*; with *Charles Battus* a *Cancer*; or with *Cornelius vander Voorden*, an *Eating Ulcer*; seeing I little regard those mere Disputes about the name, being affected with nothing so much as the matter itself.

This Evil augments very swiftly, and may (in a short time strangle the sick, as I (two Months before) experienced in a Maiden-Child four years old; which was brought to me (the fifth day after the invasion of the Disease) so deformed, as she seemed not to resemble Humane kind. For half her Nose, and a fourth part of her Tongue was already consumed, her left Cheek hard as a stone, perforated with a great hole; by reason of which and other

Sym-

Symptomes, according to my Prognostick,
she died within four days.

Therefore these things being by me seriously considered, I prescribed the following Unguent resisting corrosive Acidity.

Rx *Of Treacle*, ʒij. ʒ.

Of Unguent. Ægyptiac. ʒj. ʒ.

Of Gum Lacca,

Spirit of Salt Armoniac, of each ʒij.

Mix and make an Unguent.

With this, mixt with a little *Spirit of Wine*, I six times a day washed the affected part, and applied thereto scraped Lint moistned in the same Medicine; by which onely Remedy I have happily cured, not this Child onely, but also many others, in a very short time.

The end of the Second Decade.

DECADE

D E C A D E III.

OBSERVAT. I.

Of a Coadnate Tumour of the Forehead.

A Maiden-Infant, Fourteen days old, was deformed with a very red Tumour, void of pain, which she had contracted whilst in the Womb. For the Mother of this Infant, when with child, was wounded in her Forehead. From that Wound, which inferred great dolour, much Blood issued out. Wherefore the Mother, willing to be more certain of her own misfortune, hastned to a Looking-glass, and so was not a little terrified.

Now who knows not how strict the union is between the Mother and her Infant in the Womb? This should not be accounted a wonder, seeing the Circulation of the Blood is common to both.

In the Hospital in *Paris*, a Fool is reported to have lived till Twenty years of age, the Bones of whose Legs, Arms, and other parts

parts were broken from his Nativity. The reason of this was, because his Mother (when with child of him) had, not without terrour, beheld the Bones of a certain Malefactor publickly broken by the common Hangman.

If a pregnant Mother can impress so great evils upon her tender Young, when she sees another afflicted with great dolour, consider what greater evil may happen when she both sees and feels (in her proper body) a bleeding Wound.

But to write of the way how this happens (that being little conducent to the Practick part) I shall in this place forbear. If any man be more curious in this matter, let him peruse *L. de la Forge* his *Annotations* upon *Cartesius* his *Treatise* of Man; also that most acute Author of a certain French *Treatise* (intituled *La Recherche de la Verité*) who very elegantly there discourseth of this Effect, and how it is produced.

Having beheld and observed this Tumor, I applied to it a Corrosive, composed onely of *Calx vive* and *common Soap* mixt together which was extended all over the Tumor, and by that means an Eschar was induced.

Common Soap is made of a strong *Lixivium* and Fatness so long boiled together, as until the many small strings of the fat Particles are broken in sunder; as is evident
by

by this, *viz.* because fatness produceth Spots (in Clothes) pertinaciously inherent by reason of those stringy Particles, with which it infolds it self within the Fibrils of the Cloth, and Soap (on the contrary) is easily washed off with Water only.

Calx vive is an *Alcalick* fixed, and sufficiently acid Salt. Therefore it is mixed with Water, because that (by reason of its effervescency with the *Calx*) infringeth the powers of the same; not with Fatness, which too much obstructs the Pores of the Skin; but with *common Soap* (by its own *Lixivial Salt*) not a little helping the virtues of the *Calx*.

This Corrosive being applied, the Vapours (in their usual manner) passed out from the small Arteries, through the Pores of the *Cutis* into the Air, by which they again forced, into the place they left, a subtile matter, which (in its transit) agitated both the saline Particles of the *Calx*, and the slippery, rigid, and pungent Particles of the Soap, and carried them (with it self) up to the *Cutis*; and indeed according to the *Longitude*, not according to the *Latitude* of the Particles: as an Arrow shot up on high cuts the Air, not transversively, but by its *Longitude*; because thus it finds less resistance and a more easie way in the Air.

These saline Particles driven up to the *Cutis*, and by the subtile matter egregiously agitated

[III.]

agitated there, broke the Fibrils of the *Curtis* in such wise, that the small passages of the same were in so great a measure distorted, that the circulation of the Bloud, Humours and Spirits, was there wholly impeded, & that part died, presenting it self under the form of an Eschar; which being (in a short time) separated, all the Tumor vanished. Seeing this, I applied my *Placentula* (in a form somewhat hard) of which I have often made mention, which compressed the Flesh (otherwise easily luxuriant) and induced a thin *Cicatrice*, which was indeed at first somewhat red; but that redness was afterward wholly taken away, when that thin skin had been several times touched gently with Oyl of Tartar per Deliquium.

The Forehead of this Child being (by these means) happily freed from all Deformity, Chyrurgeons should hence be excited to endeavour the removal of many like deformed Blemishes and Tumors in Infants (impressed whilst they were held captive in the Prison of the Womb) which by many have been accounted insurable.

OBSER.

OBSERVAT. II.

*Of an Ulcer, with Rottenness of
the Jaw-Bone.*

A Matron, aged 28 years, was afflicted with a small, deep, and dolorous Ulcer of her Under-Jaw, from which daily issued out a great abundance of Pus, and spongyous flesh was always luxuriant in the Ulcer, and the Tooth nigh the Ulcer was excavated with rottenness, and besides, no small hardness presented it self to the touch of the finger.

According to the relation of the Patient, this Ulcer derived its Original from a great and large Tumour of the Lower-Jaw, and also of half the Face, which (suppurated and spontaneously opened) emitted much Pus into the cavity of the Mouth; but this Aperture was in a short time healed by the Spittle contained in the Mouth. This External Tumour was opened by the Chyrurgeons Knife, and that Aperture for several Weeks after yielded to no remedies.

Therefore I, being called, gave accurate heed to all Circumstances, and exactly enough

enough examined them, and so at length (shunning all precipitate rashness in Judging) most assuredly perswaded my self, that the Bone of the lower Jaw was rotten; and that was principally evident to me, by that always luxuriant flesh, and by a greater abundance of Pus than the streightness of the Ulcer could contain, had not the Bone been infected with rottenness.

But whence did that fungous flesh in the Ulcer, luxuriating with the rottenness of the Bone, derive its Original? Satisfactorily to answer this Question, those things are to be called to mind which I mentioned in the Eighth *Observation* of the First *Decade*, of which I there at large discoursed, viz. that rottenness of the Bone is induced by an *Acido-Corrosive*: which also may be made more evident by the following Example.

Cast some Bones to be devoured by a Dog, and it will in a short time be evident by his Excrements, that the compactness of the Bones swallowed is thoroughly dissolved by the Ferment contained in the Dogs Stomach, the Acidity of which, I judge there is no man will deny.

Therefore the corrosive Acidity corroded and rotted the Bone, and opened the sanguiferous Vessels more than was fit, from which (then extended in length) the outflowing Humor was formed into spongyous Flesh.

I

+

But

But whence was the so great abundance of *Pus* in the Ulcer, that attended the rottenness? That Ulcer was deep, so that not onely the Humors proceeding from the Skin and Flesh, but also from the *Periosteum* and Bone it self, supplied matter for generating that *Pus*.

This rottenness I did first discern by the Eyes of my Mind, but I desired sensibly all so to be assured of that; and because the streightness of the Ulcer would not admit any Probe of Iron, I therefore used a *Hogs Bristle*, and with that felt the Bone to be naked and rotten.

What was here to be done? the corrosive Acidity was to be tempered, and separation of the rotted Fragments of the Bone to be promoted, and the hardness in the parts adjacent to the Ulcer to be softened.

But first of all I commanded the rotten Tooth to be drawn out, lest it should more infect the Jaw; but the root of the Tooth pulled out appeared uncorrupted.

Then into the Ulcer I put a *Tent* anointed with the following Unguent.

Rx. Turpentine, ℥ij.

Tolk of an Egg,

Aloes, Myrrh, of each ʒj.

Mix these according to Art.

Turpentine resists Acidity, as the *Oyl* thereof (waxing hot with the acid *Oyl* of *Vitriol*)

Sitriol) plainly teacheth ; so also Myrrh.
and Aloes (by their Salt, with which they
bound) do temperate Acidity.

Also sometimes , for the better opening
the Ulcer, I strewed upon the Tent *Crocus*
Metallorum pulverized, which took away
the Luxuriant flesh, or I put in a Tent made
of *Gentian-root* ; but upon the Tent I usual-
ly strewed powder of *Euphorbium*, that it
by its own abounding Volatile Salt) might
temperate the corrosive Acidity, and so not
only prevent the corrupting of the sound
part of the Bone, but also hasten the sepa-
ration of the Fragments affected with rot-
tiness.

Upon the Luxuriant flesh, rising up above
the Ulcer, I often applied *Burnt Allom.*

To remove the hardness in the parts
high the Ulcer, I applied *Paracelsus* his *Stip-
ple Plaister* ; which hardness was by this
means removed in a short time.

After I had for the space of three months
studiously endeavoured the cure of this
Ulcer, three white Fragments (one after
the other) issued out of the Ulcer, the two
first of which were very small, but the third
sufficiently great and broad.

At that time, when some of the Frag-
ments began to be separated, the *Pus* ap-
peared sanguineous , because the sanguife-
rous Vessels were hurt by those Fragments.
But whence the increase of Dolour then

derived its Original needs not here be explained.

Here also it may easily be understood that the moving Fragments gave increase to that abundance of *Pus*, and caused the Flesh to be more luxuriant.

But how came these Fragments to be disjoyned? To explain this, it is not bootiful to call upon Nature for help, which *Empedocles* hath long since exploded in the following words:

*What Mortals now do Nature call,
Just nothing is.*

Indeed I cannot but deride those Physicians who have these words always in their mouth, and are accounted as Oracles.

Nature is the Curatress of Diseases, the Physician Nature's Minister, &c.

Whereas they themselves know not what they would have intended by these words signifying nothing; which notwithstanding they boldly enough utter before their Patients, by whom they are often accounted as Gods, by reason of their mumbling.

Therefore let us bid adieu to this Nature, and call it what in very deed it is, and what may clearly and distinctly be understood by every man: that is to say, the Particles circulating through the four Bones, approached to the rotten and perished Fragments; but could not continue their

their course through them (because the small passages were very much distorted) therefore with united force they daily were often struck upon them, and so (as much as they could) tearing the Fibrils, which had as yet connexed the sound Bone with the corrupted parts; and at length the acutest particles of the Pus (with the acuteness of their sides) cut in sunder these interstancing Fibrils, which did the sooner and more easily happen, because the same Fibrils were very much distended; as we see a Thread stretched out to be most easily cut by a knife, but a Thread hanging loose cannot so readily divided.

After the last of the Fragments was come out of the Ulcer, the abundance of Pus was soon diminished, and the fungous flesh removed by burnt *Allom*) no more increased again; and so the Ulcer was wholly closed in the space of four days, the Cicatrice notwithstanding remaining hollow and hard, which no mortal man can prevent in rottenness of a Bone: because the nourishing Particles which circulate through the small passages of the Bone, and so come to that Superficies of the same Bone, from which the rotten Fragment was separated, are much more solid than fleshy Particles; therefore when there (by reason of the similitude of Superficies) they adhere to the extremity of the Bone, very firmly compacted

ed and connexed each with other, and constitute (as it were) a certain small C

OBSERVAT. III.

Of a Wound of the Leg inflicted Gun shot.

A Young man, aged Twenty four years, complained of a Wound of his Leg (inflicted with a Shot) which was round, blackish, and very painful.

The Leaden-bullet could not perforate this young Man's Leg, but did egregiously contuse the same, whence arose that Dolor and blackness.

It is not my purpose in this place to describe the means by which Gun-powder is flamed, and excited to a motion so vehement and swift, that it can impress a Leaden-bullet force sufficient to produce such a Wound; seeing *Cartesius* hath (so exactly and elegantly enough) writ of this matter, in his Fourth Part of the *Principles of Philosophy*.

Therefore after the Patient came to me, I commanded him to set his Body in

same posture he stood in when he was wounded; and then with a leaden Probe, yea also with a Wax-candle (which we in Dutch call *een was-lichtien*) I sought very industriously for the Bullet, but in vain; because it had descended too deeply, and absconded it self so that I could not draw it out.

If any man be desirous to see instruments fit for extracting Bullets, let him consult *Fabritius Hildanus*, *Sculetus* and others.

What then was here to be done? The Blood and Humors (by reason of the *Contusion*) stagnizing and (by reason of the *Acidity*) coagulated, were to be dissolved by things temperating Acidity; that by such means the Circulation of the Blood and Humors (in such wise impeded) might be again restored, and by that restoration the Fibrils (inherent and plainly dead in the Wound) be separated from the living Flesh, and the Wound again be filled up and repleat with new Flesh, and cured; which, notwithstanding the Leaden-bullet remaining in the Leg, was effected in a short space of time, by applying this Unguent, and superpositing the following Plaster.

R Turpentine, ʒij. White of Egg, No 1.

Myrrh, Aloes, of each ʒ ss.

Oyl of Wax, Drops 10, Make an Unguent.

I 4

R. Em-

Rx. *Emplas. Diapalma*, ℥ij.

Common Chalk, Bolus, of each ℥ss.

Diaphoretick, Antimony, ℥j.

Oyl of Tartar per Deliquium ℥ss.

Of Cammomil, q. s.

Mix according to art and make a Plaister.

But in the mean time we contributed help to the external Remedies, by internall Medicines also given; and often gave to the sick (instead of a *Vulnerary Potion*) once Scruple of *Crabs-Eyes*, and as much of *Whitce Coral*.

The Ancients, about Wounds made by Gun-shot, laboured with great prejudice, thinking them to be venomous; and *Johannes de Vigo* had imbibed the same opinion: for he therefore touched such Wounds with hot Oyl.

No less false is the Opinion of those men, who believe a Leaden-bullet (shot out of a Gun) doth in perforating the Flesh egregiously burn the same: For a Leaden-bullet shot against a Wall, and presently taken up, will exhibit no sensible heat.

But whence is it, that Lead hath often been known to remain in the Humane Body without any sensible hurt for a long series of years; but Brass, Iron, and many other things, from without forced inwards, not so? Do we not daily see in the *Macrocosm* how easily Brass is infected with an

Erugo,

Ærugo, and Iron with Rust, by the Air, Water, Vinegar, and other things; whereas (on the contrary) Lead is infected with no *Rubigo*?

Moreover, Tin is likewise said to be infected with no Rustiness; wherefore this also, may perhaps for a very long time lie hid in our Bodies without damage.

Helmont, *Kenelm Digby*, and others, much glory of the Sympathick cure of Wounds; but they are miserably deceived. Sir *Kenelm Digby* set a Vessel full of Water in a cold place, and in that Water dissolved *common Vitriol*, and then (in that Solution) put a Linnen-cloath, that had before received the Blood issuing from the Wound; and (doing this) thought that many Particles of the *Vitriol* would by the Air be carried to the Patients Wound; but perhaps these Particles, could they be conveyed so far, would do more hurt than good. This seems to be very probable, because those *Effluvijs*, which the Air can convey from the *Vitriol* set in a cold place, must needs be very few.

Before I put an end to this *Observation* there remains one Problem yet to be discussed, *viz.* whether it be true, as many men at this time do firmly perswade themselves, *viz.* that there are such men in the world, who (by reason of a Compact made with the Devil) have Bodies impenetrable
by

by any Bullets, Swords, or other things
impressing Wounds.

Although I have with great scrutiny examined this matter, yet I could never unto this day find any man, who (by proper experience in his own Body) could ascertain me of the truth of this matter.

But it is sufficiently evident to be repugnant to reason, that the Humane Body (which is so very soft) cannot be wounded by Leaden-bullets, Swords, and other Weapons, agitated with very great force, when as a Pellet of Wax, shot out of a Gun, can sufficiently penetrate solid and hard Boards.

Whatsoever is so repugnant to Reason, cannot be consentaneous to the Will of God ; for, otherwise he must needs will somewhat that is repugnant to his own Nature ; seeing *αὐτός* The *WORD* (or Reason) is *G O D* himself.

Whatsoever *G O D* wills not, that the *Devil* cannot effect, therefore I judge this thing to be wholly impossible, and shall never be induced to believe that such men can be any where found.

OBSER.

OBSERVAT. IV.

Of a very strange Ulcer.

OUT of the City *Arnhemium*, beyond the *Rhine*, in that place which in Dutch is called *de Praest*, a Woman of Seventy years of age asked Counsel of my Father (Doctor of Physick and Chyrurgery) whilst he lived, because she was afflicted in that part of the Thigh (which is about six fingers breadth distant from the Groin) with an Ulcer, the Cavity of which exceeded four hands breadths.

From this Ulcer at one time proceeded thirty Eggs full of a limpid Humor ; afterward for several days many other came forth ; all which numbred together , exceeded one hundred : some of which were equal in magnitude to Hens-Eggs , others as large as Pidgeons-Eggs, and some of them no larger than Sparrows-Eggs ; all of them, each apart from the other separated , were enclosed with their proper Membrane , white and as thick as a Playing-card.

These Eggs appeared very like to sub-ventaneous (or windy) Eggs, and lay all
together

together included in a Common, and gross Membrane.

These Eggs being by Intervals thus evacuated from the Ulcers, I used the following (or like) Injection.

Rx. *Root of round Birthwort*, ʒij .

Herb Carduus Benedictus,

Veronica, of each, Mj . ʒj .

Crabs-Eyes, ʒj .

Myrrh, *Aloes*, of each ʒj . ʒj .

Boyl these according to Art in French Wine, and use the Colature.

By this means that common and gross Membrane was gradually consumed, and the Patient at length restored to her pristine sanity.

Many that were present thought this Woman to be bewitched, and therefore affirmed the Devil to be the Author of this Disease, evily attributing that honour and power to the Devil, which ought to be ascribed to the Omnipotent G O D onely. For G O D is the primary cause of Motions, that are made in this *Corporeal Universe*; and according to the rules of these Motions, giving heed onely to the magnitude of Bodies, to the figure and position of them, not onely the *Phænomenons* of this Disease, but also many other (far more wonderful than these) may very accurately be explained.

If you be desirous to know how Plants proceed

proceed from a Grane (or Seed) it will behove you attently to peruse the *Anatomy of Plants* (made by Mr. Grews Microscope) published both in *English* and in *French*. There in the greater Bean, you may behold the Rudiment both of Root and Plant already formed; there you may perceive, how the Juice (strained through the Membranes of the Bean committed to the earth) is fermented in the Body of the Bean; also how there through a small hole of the Bean admittance is given to the Air, and an exit also permitted to the superfluous Vapours; how the Juice thus fermented is constringed into the Rudiment of a Root, and converts that Rudiment into a true Root; which then receiving nutriment from the Earth, repels the other Juice, coming from the other part, upwards to the Rudiment of the Plant, that so at length it may present it self to the sight as a true Plant.

If you desire to know the causes of the stupendious powers in the Magnet, of the *Ignis Fatuus*, *Rainbow* and other things, consult *Cartesius*, who will clearly explain them to you.

The same Philosopher (in his *Treatise of Meteors*) will also there teach you, that Souldiers (sometimes seen) fighting in the Air, touching which the ignorant Vulgar tells so many tales, are no other than certain Clouds.

I know not indeed whence arose this so evily-founded Judgement of the people, by which such cases (as this of ours is) are accounted *Inchantments*, and *Marrowworms* (so frequently ejected from the Bodies of men by *Vomit* and *Seidg*) esteemed meerly natural; whereas the generation of *Marrowworms* is far more wonderful, than that of these Eggs in the Humane Body.

Vigelius, professor of the *Mathematicks*, is reported to have formed an *Horse of Metal*, which in one day (for several hours) could by the help of *Rotula's*, walk like a living Beast.

Rayfelius is reported to have fabricated an Engine like a man, in which a certain Liquor, poured into the mouth, was seen to circulate like our Bloud; the more thin part of which Liquor was expelled by the Yard as *Urine*; but the more gross part as *Dregs* (or *Dung*) of the Belly, by the Fundament.

If Man can do such things, what cannot *GOD* (the supream Architect) effect according to the ordinary rules of Motions?

Therefore how were these Eggs produced in this Woman? I answer. In the Thigh of this Woman, from this or that cause, many Pores of this or that Artery were distorted and enlarged; so that many Humors flowed out, and were collected in

in one place, in which (when they began to be fermented) the Particles, stringy and less apt for motion, were thrust out to the sides, where they were not compelled to so swift a motion; and there cohering and twisting themselves one within the other, were formed into that sufficiently gross Membrane, which did include all the Eggs afterward generated.

But because the Pores of the above-mentioned Artery were diversly distorted, therefore some of the Particles contained in this gross Membrane did in some measure differ from the other in figure and magnitude; and perhaps the Particles like each other, flowed into almost an hundred divers places; and so every of those Particles (besides the Congesture of their like) still exercising a certain kind of Fermentation, did again thrust out the more stringy Particles to the sides; and so were formed the Membranes, in which were included all the Eggs.

Thus, I suppose, I have produced a sufficiently intelligible cause of this *Phænomenon*, which I beheld with my own Eyes.

OBSER-

OBSERVAT. V.

Of a vast Tumor of the Neck.

A Young Maid, aged Fifteen years, being otherwise very well, had (now for six years) sustained an hard round Tumor in her Neck, (of the same colour with the Skin, and void of pain) equalizing in magnitude a white Loaf that is wont to be sold at the price of half a *Sesterce*, and miserably defacing the Patients Countenance.

I judged the humidity of this Tumor to be very viscus, and divided almost after the same manner as we see the Juice in a *Pome-Citron* or *Orange*, contained in many Cells.

By reason of the viscosity of the Humour this Tumor could not be discussed, nor (in the common way) brought to suppuration; therefore I applied a Corrosive, and (the Eschar being removed) put in a Tent anointed with the *Unguent Basilicon* mixt with common *Turpentine*.

By this means some part of the viscus *Pus* issued out daily, and so the Bulk of this horrid Tumor began to be diminished; the

viscus

viscous Humor nearest the hole was first evacuated, and afterward that also which lay far remote from the Ulcer.

But when the small passages round about this hole (made by Art) were obstructed by the viscosity of the Humor, as it often hapned; then, with the Unguent wherewith the Tent was anointed, I mixed some *Crocus Metallorum*, that so an Eschar might be induced; which being separated, the small passages were again opened; and so this young Maid in the space of three Months was wholly freed from this Tumor, and that great deformity attending it.

I shall not in this place speak of the way or manner of the Corrosives operating, having already discoursed of that, in the First *Observation* of this *Third Decade*; nor will I at this time further explain by what means the Eschar is separated; because this may sufficiently be understood by the Second *Observation* of this *Decade*, where I teach, how the rotten Fragments of Bones may be separated from the sound part.

Perhaps some one will wonder that I use Medicaments so few and so little compounded; but to what purpose are so many Simples, and so many composed Forms of Remedies, which many Physicians use at this day, for no other cause than to boast of their vain Learning before the Ignorant?

K

If

If *Gun-powder*, made of *Cole-dust*, *Nitree* and *Sulphur* onely, produceth such stupendious effects in the *Macrocosm*, that (omitting all other) it can blow up into the Air vast and heavy Ships, and also (if put under the Earth) cause the same to tremble and cleave in sunder; why may not a few Medicines, seasonable taken, be sufficient to heal very many Diseases in the *Microcosm*.

I do indeed assent to *Bacon Verulamii* great Chancellor of *England* (who is by some called the *Day-star* of *Cartesius*) thus speaking: *Variety of Medicaments is the daughter of Ignorance.*

OBSERVAT. VI.

Of a wonderful Abscess.

A Man Fifty years of age, was vexed with an *Abscess* arising below his Ear, which was round, painful, waterish, and soft; with this he had been afflicted some days before he came to me.

I, being certainly perswaded, that ripe Pus was contained in this *Abscess*, made an Aperture with my Lancet; and so presently

sently issued out no small quantity of white shining *Pus*, but when I would, by pressure with my finger, in some measure further the efflux of the *Pus*; behold soon after a piece of a Tobacco-pipe (equalizing the length of the Middle-finger) presented it self to sight; which, with an Instrument I drew out of the lately-made Orifice.

The *Pus* being gradually evacuated, I in a short space of time healed this Affect after the manner of other *Abscesses*; so that (in this Cure) nothing hapned worthy of observation.

But the piece of Tobacco-pipe unexpectedly issuing out of this *Abscess*, gave occasion to the By-standers not onely of admiring so rare a *Phænomenon*, but also made them presently to fly to the Devil and his Inchantments.

The Ignorant (and therefore superstitious and miserable) vulgar men, presently hasten to the Devil, the accustomed (but impious) *Asylum* of their ignorance; when any Effect presents it self to them, the like of which they never before saw.

If they see any thing the cause of which they know not, they do not presently ascribe that to the Devil, having often before beheld the same; so the stupendious actions of that Belching out of Fire (which cannot but be known by all the Inhabitants of these Regions) are by them accounted

natural, and not taken for delusions of the Devil, *viz.* because these are such things as they have often seen, though they cannot render a reason of them, being wholly ignorant of the cause.

So, sometime since, there was an *Italian* (at *Lugdunum* in *Batavia*) who after the drinking a great quantity of clear Water, vomited up the same into various Chrystalline Vessels, not limpid as before, but it was (in every of the Vessels) of a diverse colour and taste.

This effect frequently seen, excited the people (ignorant of the cause) to so great admiration, that they uttered not so much as one Whisper about the Devil. But Mr. Overcamp presently found out the cause of this *Phænomenon*, as he relates (*In primogenito Ingenii sui Partu*) *viz.* that in the Chrystalline Vessels he both saw and smelt divers subtile Oyls, which in one Vessel tinged the Water with one colour, in another with another.

Not without reason did *Virgil* say (*Felix qui potuit Rerum cognoscere Causas*;) He was happy that knew the Causes of things: For they being known, we shall not much wonder at *Phænomenons* before seen, much less (with the decieved Vulgar) refer them to a certain imaginary power of the Devil; whereas it is well understood, that the Common people seldom have any regard to the causes of things.

But,

But, omitting these, what was the reason that a piece of a Tobacco-pipe came forth of this Affect whereof we are now writing? When I had well examined the Patient, I by him understood, that (about six Months before) when he walked in the streets taking Tobacco, he fell down, and internally hurt his Jaws with the Pipe, from which hurt abundance of Bloud did often flow out, *viz.* because a piece of the Pipe broken off, deeply forced into his Jaw, first produced this *Hæmorrhagia*, and afterward the above-recited external *Abscess* below the Ear, out of which when opened the piece of Pipe was taken.

OBSERVAT. VII.

Of a small Stone contained in the Urinary Passage.

A Little Boy five years old, suddenly complained of a pain of his Yard, and could not make water. I (as I then judged) with an Iron Probe touched a small stone as big as a Pepper-corn (but very rugged) contained in the *Urinary passage*. How this Stone should infer so vehement
K 3 dolour,

dolour, and stop the Urine, I purpose not
at this time here to explain.

Fit Instruments, by many Authors com-
mended in this case, were now by mee
made use of, but in vain: What then was
to be done?

I presently gave to the sick Child two
spoonfuls of the following Mixture.

Rx. *Antinephretick Water,*
Water of Stone-Parsley,
Of Fennel, of each ℥j.
Fernelius his Syrrup of Althea, ℥℥.
Crabs-eyes, ℥j. Salt Prunella, ℥℥.
Salt of Bean-stalks, ℥j. Mix these

Then I commanded the Mother to ap-
ply her mouth to her young Son's Yarde
and suck (for some time) as much as she
could, and by this means the Stone was
(in a short time) drawn forward to the ex-
treimity of the Ureter, from whence then
it was easily drawn out with the Forceps
and so this little Boy was quickly, safely
and pleasantly freed from this so very pain-
ful Affect.

We must speak with the Vulgar, but not
judge with them according to the com-
mon Proverb. I said, the Mother sucke
though in the mean while I am certainly
perswaded, that Sucking effects little, but
all Motion is made by Pulsion. It is true
the Mother, applying her Mouth to the
Yard

Yard, and strictly closing it round about with her Lips, caused the Belly to swell by contraction of the *Diaphragma*; and so the external Air, by its pressure, forced the small Stone to the extremity of the Yard contained in the mouth of the Mother: which did so much the more easily happen, because that little Air (contained in the Mothers mouth) by the heat there existing rarified; and so being more weak than the external Air, forced from the swelling *Abdomen*, made the less resistance, as rarified Air (contained under a *Cuppin-glass* made hot) prevents not the subjected *Cutis* from being lifted up into a Tumor, the pressure of the external Air contributing thereunto. This Propulsion of the Stone was also not a little furthered by the almost continual agitation of the Tongue commodiously applied.

But no man should here wonder, that the pressure of the Air hath so great force; for this effects many other things much more wonderful, and is the cause that two *Brass-Hemispheres*, from which the Air hath been (in a great measure) removed by a *Wind-Instrument*, do so very firmly adhere each to other, that the weight of a Thousand pounds would not be sufficient to separate them again; whereas they may very easily be disjoyned, when the Air is again introduced; as I with my eyes have beheld (at

Lugdunum in Batavia) in the Laboratory
of *Burcher de Volder*, a most acute Profess-
or of solid Philosophy in that place. If
any man desires to know more of these
things, let him consult the *Magdeburgic Ex-
periments*, adorned with Braſs Figures.

OBSERVAT. VIII.

Of a Contusion suddenly healed.

A Man about Thirty years of age, in
Tennis-Court, received a Ball, with
great force struck by a Racket, just upon
his right Eye, whence exceeding great do-
lour presently arose.

The Patient remembred, that he had seen
others after the same manner hurt, to be
presently healed by cold Water onely, ap-
plied immediately after the stroak, there-
fore he presently to the contused part ap-
plied his *Handkerchief* moistned with col-
d Water, and when that waxed warm, he a-
gain dipped it in other fresh cold Wa-
ter.

The next day after this hurt, his Friend
that had heard of his misfortune, came to
visit him; but seeing both eyes very found-
and

and well, they were amazed, having before firmly perswaded themselves, that the eye which had received so vehement a stroke, must needs be livid and very painful.

But what may hence be inferred? Can cold Water profit in a Contusion? It seems more likely to do hurt; because it incrustates, coagulates and stagnizeth the extravasate Blood. Would not *Spirit of Wine*, and other Medicaments (that increase the motion of the Blood) be more convenient in this case?

That you may the more clearly conceive the solution of this difficulty, it is behooful to know, that in the parts hurt (by the Ball so forcibly driven) certain very small sanguiferous Vessels were opened, which had they (before the Water was applied) poured out the Blood into the small passages of the Parts hurt, then the cold Water would have done hurt; but this cold Water was applied before the Blood issued out, and so not onely (by its coldness) again closed these very small Vessels, but also was the cause that no new Blood could (for a certain space of time) enter the same Vessels. So we see our Face to be red, for no other reason than because, through the *Cutis* of the same very many small Vessels full of Blood lie dispersed; and discern the same to wax pale by the coldness of Water,

ter, Air, and other things ; because such coldness for a time prohibits the Bloud from entring these very small Vessels of the Face.

So we see the pleasant redness of the Lips in a beautiful Virgin , augmented by the kifs of a young man , to be changed into a pallid colour, by Acidity restraining the Bloud from entring the small Vessels distributed throughout the Superficies of the Lips.

But whosoever he be, that will attempt such a way of Cure as this here mentioned , after the small passages of the parts contused shall be replete with extravasate Bloud, seems to me to be not well in his wits : for I have not seldom known a *Gangrene* to arise in a part contused , from the unseasonable application of cold and astringent things.

OBSERVAT. IX.

Of an hard Tumor of the Abdomen.

A Girl Five years of Age , accustomed to evil Diet, was for a long time afflicted

flicted with a very great Tumor and hardness of her Abdomen, and her face was very pale.

The following Liniment had before been in vain used.

Rx. *Unguent. Altheæ comp.*

Oyl of white Lillies, of each ʒss.

Of Tiles ʒj. Mix these.

Which notwithstanding (in a like case) is not a little commended by the famous *Sylvius*, in the first Book of his *Praxis*, Chap. 14. under the Title 56.

Well considering the matter, I judged the Bloud of this sick child to be very viscus and acid; and (by reason of this) that many *Glandules* of the *Omentum* were obstructed and augmented to a strange bulk. But which way Paleness of the Face is induced by such Bloud, I suppose to be known to every man, therefore needs not be here explained.

Perhaps some one will wonder, and not believe it possible, that the *Glandules* of the *Omentum* should increase to so great a Magnitude, as to become the cause of so great and hard a Tumor, as was in the *Abdomen* of this Child perceptible by the touch; but I would have him peruse *Fabritius Hildanus*, who (in the 62 *Observation* of his *Third Century*) declares, that he opened a Carcass, the *Omentum* of which, by reason of

of the tumified *Glandules*, weighed Fifty six pounds.

Things being thus, I judged nothing would be more profitable than *Paracelsus* his *Stiptick Plaister*, which I commanded to be applied to the *Abdomen*, after it was spread upon a Linnen Cloath, and anointed with *Oyl of Nutmegs*.

To correct the viscous and acid Bloud, I commanded certain drops of oyly Volatile Salt to be given daily twice a day; and by this means our little Patient in the space of a few Months, was happily restored to her pristine state of health.

OBSERVAT. X.

Of the Scurvey.

A Man, aged Thirty years, every day evily accustoming himself to viscous and sowre Aliments (according to the bad custom of the *Gelders*) was afflicted with heaviness and dolour of his hands and Feet; his Gums (in a great measure consumed) would bleed with the least touch; his Spit-
tle was in taste salt as Brine.

Having diligently considered these things,

judged the Blood (too acid and viscous) to be here peccant, which (by reason of acidity) inferred that dolour of Hands and Feet, and corroded the Gum and its sanguiferous Vessels; and by its too great viscosity did so obstruct the small passages of the Hands and Feet, that the usually-free transit of the Animal Spirits into the Muscles was somewhat impeded, whence arose the aforesaid *Heaviness*.

I speak here of the *Animal Spirits*; for being the Liquor that is through the Nerves (for exciting motion) carried into the Muscle, is subtle; I know not why this Nervous Liquor should less deserve to be ingnized with the name of Spirit, than that liquor which (in Chymical Distillation) is extracted from *Hartshorn*. But omitting main Disputes about the Name let us set about the *Matter* it self.

This Disease is very familiar in these Regions, and is generally known by the name of *The Scurvey*, and is most difficultly cured, if (in process of time) it have taken deep root. Wherefore I presently applied my self to the Cure of this Disease, seriously commanding the Patient for the future to eat no more acid and viscous Aliments and prescribing the following Medicament.

Rx. Syrup of Scurvy grass ℥℥.
Of Salt Armoniac distilled with

Salt

Salt of Tartar, ℥ij.

Oyl of Tartar per deliquium,

Tincture of May-worms, of each ʒj.

I commanded the Patient to take 166 drops of this Medicine thrice a day in a Decoction of the Tops of Firr; and indeed to the end that the *Spirits of Scurvey-grass*, and *Sal-Armoniac*, and the *Tincture of May-worms*, with the aforesaid Decoction might attenuate the viscous Bloud and infringe the Acidity thereof. I added *Oyl of Tartar per deliquium*, that by this means the Volatile Salt of the Bloud (subdued and bound by the Acidity) might again recover its pristine liberty, and so render the Bloud more fluid and more agile.

As we see the *Volatile Salt of Hartshorn*, or any other Volatile Salt, coagulated and conjoined with an Acid Spirit, with the help of an *Alkali-Salt* and *Common Water* by distillation to be again restored to its pristine liberty, and separated from that Acidity.

As to the *Tincture of May-worms*, it is to be observed that that ought not to be extracted with the acid Spirit of Salt, (as Artists are wont to do) because by this means the Volatile Salt of the *May-worms* is infringed and enervated.

By these Remedies our Scorbutick Patient was cured in a short time.

But before I put an end to this Third Decade a Difficulty (not very small) remains yet to be removed. I here affirm the Cause of this Disease to be Acidity, and in the mean while say the Spittle was imbibed with a Saline taste ; how do these agree ? Do they not manifestly contradict each other ? No. I promise to unfold this Riddle in few words. No small quantity of Volatile Salt contained in the Bloud (with the Acidity) was coagulated ; therefore the Spittle (burthened with this Coagulate) exhibited the afore-mentioned Saline taste to the Tongue. So Common Salt, which we daily use with our Meats, ceaseth not to taste Saline, though it hath not a little Acidity permixt with it self, as Spirit of Salt extracted by Chymical Distillation doth plainly teach.

The end of the Third Decade.

DECADE

D E C A D E I V.

OBSERVAT. I.

*Concerning the Indisposition of the
Gum.*

A Matron Forty years of age, very much afflicted with the *Scurvey*, complained of an excessive pain of her Gum, which was very much corroded, and (at the least touch) immediately poured out Blood: and besides, her loose Teeth were loose. Also the Patient (according to the common custom) after Blood-letting, had been often purged, but in vain.

How the *Acidity* (in some sort corrosive) should be the cause of this dolour, corrode the Gum, and make the Teeth loose, I forbear in this place to explain; because I judge the case to be sufficiently clear of itself.

This Evil doth sometimes degenerate into that Malady, which we in *Dutch* call *De Water-kanker*; therefore not to be slightly regarded.

My order was, that the sick Woman should

should (as much as was possible) abstain from acid things, and unto her I gave the Spirit, of which I spake in the last *Observation* of the foregoing *Decade*; and did also prescribe the following Medicament to be externally used.

Rx. *Tincture of Gum Lacca*, ℥j.

Spirit of Scurvy-grass, ℥iij.

Oyl of Tartar per Deliquium, drops
xiiij. *Make a Mixture.*

With this Medicament the Gum was four times a day touched, and washed; and so in a few days the diseased Woman was freed from her pain, and the out-flowing of Bloud from the Gum ceased, and the Teeth were no longer loose; but that part of the Gum that was eaten away grew up no more: at which no man should wonder, because it is as impossible for part of the Gum consumed to be regenerated as a finger once cut off to grow again.

Sometimes a certain Lapideous matter grows upon the Teeth, which by its roughness lacerates the Gum; in which case the preceding Medicament must in no wise be used, unless this Lapideous matter be first removed with some fit Instrument.

If you desire to know the way of preparing *Tincture of Gum Lacca*, consult *Frederick Deckers* (that most famous Practitioner) in his *Practical Observations* about the *Method of Healing*, page 15. L Be-

Before I finish this *Observation*, I cannot forbear to tax the frequent error of those men who use *Oyl of Vitriol* for whitening black Teeth. For though this immediately takes away the blackness of the Teeth yet it afterward hurts them; because it corrupts the Volatile Salt, which is naturally found in great abundance in the Teeth. It would be far better for those that delight in white Teeth, always after Meat to wash and cleanse their Mouth with pure Water, and (once in a Week) rub their Teeth with the powder of *Porcellane Earth*, which is *China*.

If any man either cannot or will not give credit to my words, saying; *Acidius* (as *Oyl of Vitriol*, and other like things) hurts the Teeth, let him at least give credit to *Solomon* the wisest of Kings, who speaking by the Spirit of GOD, said; *As Vinegar to the Teeth, and as Smoak to the Eyes, is the Sluggard to them that send him.*

Now if *Vinegar* (according to the testimony of *Solomon*) be so inimical to the Teeth, what damage will not *Oyl of Vitriol* infer, which is much more sharp, and is much more corrosive?

OBSERVAT. II.

Of an Ambustion.

A Man Thirty years of age, setting fire to Gun-powder, burnt his whole Face and both his Hands, whence presently arose redness and exceeding great pain; to aswage which the Patient applied Ink, which was (as it hapned) ready at hand.

Had you seen the Patient in this state, you would have affirmed you saw the Devil, unless you could (with the *Aethiopians*) perswade your self the Devil is white, which Opinion Sir Thomas Brown (in his *Pseudoxia Epidemica*) seems to favour, contrary to the Testimony of the holy Scripture, which saith (in the *Revelation* of St. John, Chap. 19. vers. 20.) *The dwelling of Satan is a lake of Fire burning with Brimstone.* But the Smoak of Brimstone burnt (as our above-recited Author philosophizeth) is known by frequent experience to whiten Wollen Garments, as Stockings and other things; and hence he concludes, that whatsoever is found in Hell, must needs be white. These things onely cursorily mentioned, let

us omit them and come to the matter it self.

I being called to the Patient, applied to the parts hurt *Onions* bruised, with *common Honey*. Which Remedy is very profitable to burnt parts, if presently applied, whilst the Skin is yet entire: for that being hurt, vehement dolour will undoubtedly follow the use of this Medicament; which shews, that then it is in no wise convenient.

The next day many Blisters, all over his Face and both his Hands, presented themselves to sight, which (the third day after the accident) being opened, poured out no small quantity of Limpid Water.

Then I prescribed the following Cerot.

Rx. Ceruss, Pulp of the Root of the greater Comphry, of each, lib. j.

Lithargyry,

Lapis Calaminaris,

Oyl-Olive, Wax, of each ℥vj.

Make a Cerot.

In the preparation of which it is to be noted, that to the Oyl and Wax first melted together, the Pouders (beaten very fine and sifted) must be added, and when these are almost cold, the aforesaid Pulp must be mixed, which Pulp is thus extracted: The Roots are first made clean, and then cut into thin round slices, which afterwards boyled in common Water till they

are

are soft, are then squeezed through a fine Linnen-Cloath.

With three Ounces of this Cerot I mixed as much of *Unguentum Aureum*, the description of which is found in the *Amsterdam* or *Augustine Pharmacopœa*; and this Medicament spread upon fine and soft Linnen Clothes I applied to the parts hurt; and by this means our Patient was perfectly healed in a short time.

Whence the redness and dolour proceeded you may easily understand, if you do but consider, that the *Gun-powder* fired, and so posited in a most swift and very vehement motion, had hurt and broke many Fibrils of the *Cutis*. For hence the dolour manifesting it self in that Ambustion, may easily be judged of: the continuation of which *Dolour* proceeded from the Obstruction of many small passages (by reason of the broken Fibrils) in which the Humors stagnized, and distended the adjacent parts, and then also waxed acid, and by this means tore and cut in sunder the aforesaid Fibrils. The Blisters were raised by the Humors stagnizing and coacervated about the *Cutis* which (being constringed by the flame) they could not penetrate.

I applied *Onions* with *Honey*, that (with their abounding Volatile Salt) they might open the constringed and stopt Pores of the *Cuticle*, temperate the acid Humors, and

restore to them their usual Circulation.

The third day I opened the Blisters ; for had I sooner opened them , the subjacent *Cutis* would have suffered and been too much pained, not onely by the ambient Air, but also by the Medicaments ; but usually on the third day is formed a Rudiment of a new *Cuticle*.

Then I applied the above-prescribed Cerot with *Unguentum Aureum*, for temperating the peccant Acidity.

Where the parts were only slightly burnt ; that is, where the Fibrils of the *Cutis* were onely much agitated by force of the Fire, but none (or few of them) broken in sunder ; and where the *Cuticle* was onely lightly shrunk, there Oyl of *Tartar per Deliquium* would have sufficed, viz. if the affected part had been lightly touched therewith ; because so the Pores of the *Cuticle* and small passages of the *Cutis* would have been opened , and the Acor of the stagnizing Humors temperated ; as I (not long since) did experience in my self, when I burnt my Foot with boiling hot Coffee, which Burning was not without Dolour and Redness.

OBSERVAT. III.

Of the Hernia.

A Man Seventy years of age, was vex-
ed with a very great and painful *Tu-
mor* in his *Scrotum*, which Tumor was of
the same colour with the sound Skin. He
felt great dolour in his *Abdomen*, and vomit-
ed up whatsoever he assumed. Having
been in this state for 24 hours he implored
my help.

Then did the sick Man, by me exami-
ned, relate, that he had for a long series of
years been afflicted with an *Hernia*, which
(the Bowel being fallen into the *Scrotum*)
did often in a strange manner afflict him;
but so soon as the Bowel was again thrust
into its place he felt no discommodity there-
by: but the Bowel had never before so
long as now remained out of the *Abdomen*,
and notwithstanding all endeavours of the
Patient, he could not put it up again.

To his Friends I declared his Disease to
be full of danger, because the Bowel had
so long remained out of the *Abdomen*. So
a man 40 years of age, travelling on foot

from *Ultrajectum* to *Arenacum*, was afflicted with an *Hernia* infesting his *Scrotum*, and yet (after this) he walked on his Feet for full Four hours (with this *Hernia* he had also been formerly afflicted, but that was onely in his Groin) whence the Tumor very much increased, and was very hard and painful; the Patient in the mean while vomited continually, and was constrained to lodge for one whole cold night in Straw at a Rusticks house; the next day he was carried in a Coach (continually vomiting) to *Arenacum*.

To the Sick man was given a Mixture discussing Flatulencies, but that was soon rejected by Vomiting; also three Clysters were injected, but to no purpose. The Patient was laid in a good posture, moist and dry Fomentations were applied to the affected part; but these proving ineffectual, the Patients Pulse gradually diminishing, he died the fourth day after this last invasion of his Distemper.

His Carkass being opened, the great Gut *Ileon* was found to be infected with a Gangrene the length of a Span, and sited in the *Scrotum*, with flatulent and hard Excrements. Besides, a great part of the *Omentum* was contained in the *Scrotum*, wrapped up like a Ball, with the sanguiferous Vessels very much distended.

In the mean while I admonished the
Friends

Friends of my Patient not too much to despond, and to that end related to them the Eighth *Observation* communicated to *Riverius*, by Mr. *Ozia Aimar* a most famous *Chyrurgeon* of *Gratianopolis*, in which after many Remedies for nine days used in vain, the Bowel (for as many days) remaining in the *Scrotum*, was happily repositied by Incision made, as far as to the production of the *Peritoneum*, which strangled the Bowel. The method by which this Operation was instituted, you will find in the above-cited *Observation*.

But whence is it that in an *Hernia* the Bowel slips down into the *Scrotum* and other Parts? This is occasioned by relaxation of the *Peritoneum*, which proceeds from Obstruction of the many small passages of the same, and because in them the Humors stagnize and are coacervated, and in process of time insinuate themselves between the Fibrils of the *Peritoneum*, and so relax the same.

Now why did not the Bowel, fallen into the *Scrotum* of our Patient, with as much ease return into the *Abdomen* as it came out, seeing the way is the same? This principally hapned because the Bowel had remained so long out of the *Abdomen* in the *Scrotum*, where was less heat: For the Pores of the Bowel, by that means somewhat constringed, prevented the free egress of the

the Vapours (partly also condensed by the Bowels long lying in the *Scrotum*) wherefore they were coacervated in the Bowel, and distended it with *Flatules* as they are commonly called.

Therefore it is hence sufficiently manifest, that the principal Cure of this Evil consisted in opening the Pores of the Bowel (fallen out of the Belly) and rendring the Vapours (in some measure condensed) again fit for greater motion and agitation, that so they might circulate (as formerly) round their proper Centers.

I effected this with *Thread* newly twisted (and not purged by boiling) which I first boiled in sweet Milk, and then applied it hot to the affected part ; by which means, after it had been applied one quarter of an hour, the Bowel (with gentle force of the Hand) returned into the *Abdomen* of the Patient, laid in a fit posture.

The Sick man, thus (as it were) snatched out of the Jaws of Death, with the Fisher learned to be wiser, and afterwards always wore an Iron Truss (all over covered with Cotten) for retaining the Bowel in its place : For, to attempt to heal men perfectly that are so far in years, and afflicted with this Evil, is to labour in vain. What *Fabritius Hildanus* relates (in his Book of *Observations*) very rarely happens, *viz.* That a man Sixty years of age, had for
 Twen-

twenty years been afflicted with a great *Hernia*, which could not be healed by any Physician or Chyrurgeon, and that the old man afterward was intirely restored to his pristine health, without Medicaments, after he, afflicted with some Tillous Disease, had lain upon his Back 14 days; therefore the same Author affirms best and lying on the Back to be the best remedy against the *Hernia*.

But we see the *Hernia's* of young Children very often cured (and indeed especially about the Eighth year of their Age) with good Truss made of Linnen, and *Sylvius* his *Carminative Plaster* spread upon Leather (the Discription of which is found in the first Book of his *Praxis*, Chap. 14. under the Title 58.) in which notwithstanding there is one Errour which I hope no man will follow, worthy to be noted, *viz.* that *Gum Galbanum* and other things are dissolved in Vinegar, which not a little infringeth the Volatile Salt of them.

The Oath of Physicians in the *Ultrasigne Academy* commands, that things heard or seen in a Cure should not be mentioned but involved in silence. And this Oath (I judge) should be strictly observed in the *Hernia's* of Young men; because this Evil attending them is wont to be more offensive to Maidens than is fit; which (before I finish this *Observation*) I purpose to declare by an Example.

A new-married Virgin, when she and her Bridegroom were the first time in Bed together, boldly handled those parts of her Husband which *Adam* (as the Scripture witnesseth) presently after his Fall, covered with Fig-leaves; and so by the Truss he wore, perceived he was afflicted with a *Hernia*; whence she, driven almost mad, passionately uttered these words: You may be ashamed so impiously to deceive your Lover; O miserable wretch that I am, what Counsel shall I take? I am certainly undone. Can such a distempered Body satisfy a Maid the flower of her Age, having not as yet accomplished her eighteenth year? No, I am totally lost, and had rather die than live long with you. The Husband in the mean while seriously pondering the matter, at length answered with kind and good words returned her this Answer: My Love, my Sweet-heart, be of good cheer, and drive from thee this vain and superfluous care; for I promise you by the effect to prove my self a Man sufficient, so that you shall never afterward have cause any more to complain of this matter. Nine Months were scarcely elapsed, before Experience confirmed the Husbands words, by Twins which his Wife was delivered of; who never after durst so much as whisper any thing of her Husbands imaginary impotency.

OBSERVAT. IV.

a Suppurated Tumour of the Breast.

Woman giving Suck, had for several days laboured with an hard, red, painful Tumor, sited in the superior part of her Breast.

Paracelsus his *Stiptick Plaister* being applied, the Tumor was quickly suppurated, and spontaneously opened, and much laudable Pus did for some time issue out thence; the mean while to the Aperture I applied *Arcæus* his Balsam, of which this is the Description.

Rx. *Sheeps-Grease,*

Gum Elemi,

Venice Turpentine, of each ℥ij.

Oyl of St. Johns-wort, ℥j. fl.

Wax, ℥ij. Red Sanders, ℥j.

Mix and liquifie all, strain the Mixture, and make a Balsam. I did also apply *Paracelsus* his *Stiptick Plaister*, and upon that I did a small Bag made hot, which was first red with *Rye-flower*, for softening the remaining

maining hardness; and so this Tumor healed in the space of a few days.

I shall not at this time explain how the Imposthume was produced, *Pus* generated, the Ulcer cleansed, and many other things of which I treated above; but, onely to signify that I here (contrary to the vulgar notion) used no Tents, and for good reason, *viz.* because they, in many cases like this ours, do commonly infer more detriment than ease or benefit; for they are wont to use their pungent property to hurt the Bottom of the Ulcer, and render the Lips of the same callous; and in the mean while: do no good, because the *Pus* is very commonly found happily enough to issue out without their help.

Not onely in this *Imposthume*; but all many others, I have observed, in three days after the aperture of the Tumor, a white shining *Pus* to flow out; but afterwards a certain pellucid, yellowish, and somewhat viscous Juice, at the sight of which (being taught by frequent experience) I have been accustomed to judge that the Evil would in a short time be healed, and that they do egregiously err (wherever they be) that seeing this above-described Juice, would keep open *Imposthumes* by continuing in Tents.

Now that you may more easily give credit to what is here mentioned, I shall

dear

deavour by solid Reason to confirm this Experience. The issuing out of a white shining Pus, for several days, from an open *Imposthume*, is caused by an acid Ferment (with which the Interiour Superficies of the *Imposthume* is imbibed) mixed with the nutritive Juice, by reason of the interrupted passages, falling into the Cavity of the Tumor: but when this acid Ferment is removed, then the nutritive Humor presents it self sincere to the sight, viz. pellucid, yellowish, oily, and somewhat viscous.

That this oily Liquor, at first pellucid, acquires a white colour (by its admixion with Acidity) will undoubtedly seem strange to no man that hath even but once in his life seen how soon Oyl-Olive, after it hath been mixed with Vinegar, presents it self white to the sight.

OBSERVAT. V.

Of an hard Tumour of the Breast dissolved.

A Matron giving suck one very cold Night, exposing her left Breast (as she lay in Bed) to the then freezing Air, the

the next day complained of a great Tumor (of the same Breast) hard and very painful, which continually increased: Some days were elapsed before my Advice was asked.

This Tumor was twice a day anointed with unsalted Butter mixt with commorn Chalk, and over all was applied hot a small Bag filled with *Rye-flower*; and in the mean while for several days the Patient suckled her Infant. By the help of these few, and not much compounded Medicaments, this Tumor was happily removed.

By reason of Cold admitted, the Milk stagnized in certain Glandules, was coagulated and waxed acid; whence, as may be easily judged, that hardness and colour derived their Original.

Chalk mixed with unsalted *Butter*, tempered the Acor of the stagnizing Milk, and so dissolved whatsoever was coagulated in the Glandules, the small Bag filled with *Rye-flower*, applied hot to the part, in the mean while contributing help.

How far *Chalk* is available for correcting acid Humors, you may easily discern, when you mix the same in a Glass with *Vinegar*, because immediately after the commixion of both, you shall see and hear an egregious and very manifest (although as to our touch cold) Effervescency, and afterwards you will find the sharpness of the *Vinegar* not a little diminished.

OBSER-

OBSERVAT. VI.

Of very great Torment of the Abdomen.

A Maid, aged Forty years, had now for six Weeks passed, complained of a most vehement dolour, yet not far extended, but exercising its Tyranny in a very small part of the Belly, and day and night most cruelly tormenting the Patient, who had used very many Remedies, both Internal and External: She was purged, and had Vein opened, but in vain; so that (after the use of these) she almost despaired of recovering her pristine Sanity; in the meanwhile the External *Cutis* in the pained part, could not be distinguished from the sound parts of her Belly.

I, being called, with my Knife cut a small Wound, which is vulgarly called an Issue, and kept that open by a Pea put in and daily renewed.

The next day after the cutting that Issue, the Patient had ease of her pain, which from day to day did more and more lessen, so that it was wholly removed quickly after.

M

One

One Month after the Issue made I permitted it again to close up, and so this sick Maid was in a short space of time freed from this exceeding Torment and remained well.

Some Acido-corrosive Particles in the affected part, were perhaps separated from the other Particles of the sanguiferous Masses with which so long as they lay involved they could not exercise their sharpness.

So Nitre put upon the Tongue infered little or no trouble; whereas the *Spirit of Nitre* doth not a little corrode the Tongue because it is now at liberty, and separated from the other Particles of the *Nitre* with which it was before mixed.

After the same manner *Vitriolate Tartar* bites the Tongue little; whereas *Spirit of Vitriol* by distillation thence again separated, recovers its pristine corrosive force which it had before.

These Acido-corrosive Particles, freed from their Cells, in which they before lay included, and collected in a very small part of the *Abdomen*, did with their sharpness in a wonderful manner continually agitate the *Fibrils*, and so infered that almost intolerable torment, which must necessarily cease when these corrosive Particles were driven out with the *Pus* through the Issue.

OBSERVAT. VII.

Of a Bleeding Teat.

AN honest man's Wife giving suck, whilst she was cleansing her Infant from his Excrements, was not a little offended with their blackness, the Infant in the mean while was somewhat ill.

I being consulted about this case, first asked of the Infants Mother, whether she felt any pain in her Nipple? She answered she did. I therefore bid her in my presence somewhat to compress her Nipple; and then I saw Blood issuing out thence, (because one or other of the small Vessels was hurt) which assumed by the Infant, and carried through the Belly, waxed black, by reason of the acid Ferment in the Infants Stomach mixed therewith.

The Mother, by my order, sprinkled Gum Arabic (cut into thin slices, dried and pulverized) upon her finger, first moistned with her proper Spittle, and with that Finger touched her Nipple; by this means she was the next day wholly freed from this Evil, and remained well.

The most famous *Sylvius*, in the third Book of his *Medicinal Praxis* (Chap. 10. under the Title 28, and following) instanceth this Blood, sometimes issuing from the Nipples of Women giving suck, as an uncomfortable Argument, to demonstrate, that Milk is not generated of the Chyle, but of the Blood; yet in this he is deceived, because that Blood issueth out from the sanguiferous Vessels hurt, or otherwise opened by the Child's sucking.

Chaps are often seen in the Nipples of Suckling Women, which affect them with very great torment, and are difficultly healed, because they can have little or no rest by reason of the Infants continual sucking. But I have frequently healed these Chaps in a short time, by every day often gently touching the Nipples with a Feather moistened with Oyl of *Myrrh*; the description of which may be seen in the *Amsterdam Pharmacopœa*.

Prudent Old Women are wont to advise Young Men affecting Matrimony, first with their hands gently to touch the Breasts of the Maids they love, that so they may be assured that they either have or have not Nipples. But though Virgins may often seem to be without Nipples, yet Experience teacheth, that the Nipples before hid (when they become Mothers) may easily by the help of a fit Instrument be drawn

drawn forth, and commodiously enough perform their office; therefore there is no need of Nurſes, to which many Mothers are much averſe, becauſe they firmly perſwade themſelves, that the Infants by the Milk they aſſume muſt needs imbibe the evil and bad qualities of their Nurſes. In this caſe I can determine nothing certain; yet this I know, *viz.* that Infants daily nourished with *Cows - milk* do not thence acquire to themſelves brutiſh and Cow-like manners.

OBSERVAT. VIII.

Of an exceeding great Dolour of the Ear.

A Virgin aged Twenty four years had now for 15 Weeks very much complained of an almoſt intolerable pain of her Ear, which ſometimes would, whole nights, hinder her ſleep; the Ear in the mean while daily poured out abundance of well digeſted Pus, many Medicaments being adhibited in vain.

I being called, gave heed to all (and indeed the leaſt) Circumſtances as circumſpectly as I could, and at length with my

Fingers felt a certain Undulation of Pus deeply sited behind the affected Ear. This Abscess was not observed by others, though it was the cause of the whole Evil.

Well weighing and considering the matter, I soon understood, that this Abscess behind the Ear would never spontaneously *viz.* without external Artifice, be opened not onely by reason of its depth, but all because the Pus there contained had already sought an Exit for it self by the Ear, though that passage was full of crooked turnings, and not sufficient. Wherefore I quickly applied a sufficiently sharp Corrosive, by which the Eschar being separated an abundance of well-digested Pus issued out by the hole made by Art; and after that time the dolour of the Ear and the out-flowing of Pus from the Cavity of the same wholly ceased. The hole made by the Corrosive (all the Pus being by it evacuated) in the space of two Weeks wholly closed up, and the Sick Maid was perfectly restored to her pristine state of health.

I judged this Aperture behind the Ear was to be made without delay, lest otherwise the Pus should have touched the affected Bone, and in time have infected the same with rottenness, although good Pus, abiding for some time upon a Bone doth not always necessarily infect the same with rottenness, as I shall easily demonstrate by the following Example.

A Man about the Thirty sixth year of his age, travelling in very stormy Weather in the Winter-time, soon after felt a great pain in his right Ear, out of which every day after some *Pus* issued out, and then followed no small abatement of that do-
lour. Afterward the *Pus* flowing out no more, the Sick man again complained of a very great torture, which (in the night often producing a *Dilirium*) had continued now for several Months, and yielded to no external or internal Remedies.

Being called, I found a Tumor behind the Ear extended far and wide, in which (I firmly perswaded my self) *Pus* was contained, although (by reason of the deepness of the place in which the *Pus* lay hid) no Undulation could be perceived by the touch; therefore I applied a Corrosive, by which a very gross Eschar being separated, an incredible quantity of *Pus* issued out. This *Pus* lay upon the *Petrose Bone*, which was wholly bare, as I could easily observe by my Probe: Yet in the mean while, without any separation of Fragments of the Bone, the Patient (in the space of six Weeks) was perfectly healed, and remained well afterward; no other Medicaments being used, than a fit *Injection*, a good *Digestive*, and at length (the Bone being again covered) my *Tincture of Antimony*, which I daily find wonderfully profitable in many cases externally used. M 4. The

The Drum of the Ear being eroded by an Ulcer, the Hearing is recorded to have remained, by *Vopiscus Fortunatus Plempius* in his *Fundamentals of Medicine*, page 148.

Moreover I remember I have at *Rotterdam* (with *Jacob Lodensteyn*, chief Chyrurgeon of the Navy, a most dexterous man,) seen all the small Bones, pertinent to Hearing, which after an Ulcer, came out of the Ear of a certain Boy; but that Boy never heard of the same Ear afterwards.

I knew a Chirurgeon, who to remove the pain of the Teeth, was wont with a red-hot-Iron to burn the Ear; but this seems to be a ridiculous and vain operation.

OBSERVAT. IX.

Of the Cubit displaced by reason of Relaxation of the Ligaments.

A Youth about 15 years of age, one evening putting off his Clothes, suddenly and unexpectedly felt Immobility of his arm, with a certain sound arising therefrom, because the Cubit was dislocated, which was easily again repositied; but very often afterwards, upon the least motion it would
 slip

slip out of its place. This Evil had continued for full three years, notwithstanding all the deceits of *Aposems*, made of *Guaia-cum*, *Sarsaparilla*, *China*, and other things which the Patient (animated by the hopes of health) had during this time greedily swallowed; in the mean while *Plaisters*, *Liniments*, and other External Remedies, were not omitted: but the Youths Arm became much more slender than was fit.

The Patient at length committed himself to a certain Chirurgeon to be cured, who certainly promised him the restoration of his Arm, which he set about after the following manner.

To the Arm ill-affected, he (every week often) applied certain *Cupping-glasses*, but without Scarification; and then the same days after Cupping, under the Arm (the upper part of which was covered) he burned *Spirit of Wine* impregnated with the Volatile Salt of many Herbs, the Vapour of which surrounded the whole Arm. These were the principal things, which (in the space of half a year) restored to our Young man his pristine state of health; so that the Patient at this time, without fear of a relapse, pleaseth himself with the Art of *Fencing*, and other like Exercises.

The Ligaments connexing the Cubit with the Shoulder, were relaxed; how that hapned you may see, in the last *Observation* of the First *Decade*. Besides

Besides, there were many Obstructions in the Nerves, Arteries, and small passages of the Muscles, whence proceeded the Atrophia and extenuation of the Arm.

The *Cupping-glasses*, often applied with Flame, removed the Obstructions of the Ligaments, Muscles, and other parts; by their heat opening the Pores and small passages, and giving more free passage to the Circulation of the Blood and Humors through the Arm: For the pressure of the Air under *Cupping-glasses* is much less and weaker than elsewhere; as you may more clearly understand by the 7th *Observation* of the Third *Decade*.

The Vapours of the *Spirit of Wine* kindled into a Flame, did (without any impediment) enter into the Pores and small passages, sufficiently opened by the *Cupping-glasses*, and there attenuated and dissolved the viscous and coagulated Humors.

And so those Particles (that had insinuated themselves between the Fibrils of the Ligaments, and by that means relaxed them) being removed, the Ligaments acquired their pristine state which they before enjoyed, whilst the Arm remained unhurt, and by that means they again retained the Cubit conjoyned with the Shoulder, as was fit.

The remaining Obstructions being also removed, the Atrophia of the Arm did likewise begin to vanish.

OBSER.

OBSERVAT. X.

*Of a Gonorrhœa contracted from
impure Contact.*

A Young man aged Twenty four years, a great admirer of Beauties, and a true Son of *Venus*, after Coition with an impure Harlot, suffered an almost continual Issue of white and viscous matter from his Yard; which was not onely without pleasure, but also attended with a cutting doulour, which was likewise felt when the Patient voided his Urine.

An Acido-corrosive Ferment lying hid in the Genital-parts of this Whore, being more than usually agitated in Coition, passed through the Yard of this Young man, into the Pores of the Prostates and seminal Vessels (by Coition more than usually opened) and so by its sharpness infected both the Seed and nutritious Humors, and excited small Ulcers in those parts: Hence arose that Vellication and almost continual contraction of the Prostates and small Seminal Vessels in the aforesaid manner, with doulour frequently pouring out the Seed and nutritious Humors corrupted. This

This Evil is generally called a *Gonorrhæa*, and is sufficiently perillous, because it often degenerates into the *Veneræal Lues* if the Cure of the same be deferred: For then the *Acido-corrosive Ferment* is forcibly removed and mixed with the *Sanguineous Mass*.

Therefore without delay I set about the Cure, and (for temperating and evacuating the corrosive Acidity, as well as for sanation of the small Ulcers) I prescribed the following Pills.

Rx. *Extractum Catholicum*, granes 24.

Mercurius Dulcis, granes 6.

Salt-prunella Antimoniate, gr. 5.

Make Pills, N° vii. These Pills the Patient took early in a Morning, and for five days following (every day once) he took this Bolus.

Rx. *Venice Turpentine*, ʒiij.

Rubarb, ʒj. Mix these S. A.

He again afterward used the above-prescribed Purgation and Bolus as before; and by this means recovered his pristine state of health.

Turpentine is, by some, so long boiled, as until Pills may thereof be made, but this is an evil practice; for the boyling forceth the Spirituous Oyl into the Air, whereas in that Oyl the principal vertue of the *Turpentine* is known to consist.

I do again condemn Acid things in this
Affect;

Affect ; but perhaps my Opinion will seem strange to some, *viz.* that Acidity should be so noxious and inimical to Sanity in a living Animal, whereas *Vinegar* preserves the flesh of a Beast killed, for a long space of time without corrupting ; but, to remove this Scruple, I Answer : The matter is far otherwise in a living Animal than it is in the same when dead.

In a living Animal, for conservation of Life and Health, the free Circulation of Blood and Humors (through the Vessels and passages sufficiently opened) is absolutely necessary ; yet this Circulation is not a little impeded by *Vinegar* and other acid things coagulating the Blood and Humors. But in a dead Animal, to preserve the Flesh thereof, the aforesaid Circulation is not requisite ; but there is onely need to take care that the very small Particles of the Flesh killed be not too much agitated, fermented, and forced from their station by the ambient Air: to effect this, *Vinegar* is very fit by reason of its gross and heavy Particles.

That the flesh of a Beast killed will remain uncorrupted, if the motion of the very small Particles (otherwise like to be) be by this or that cause stopped, is very manifest by this, *viz.* that Flesh killed in Winter is kept sound for many days ; whereas the Flesh of a Beast (of the same kind)

kind) killed in the heat of Summer, is most speedily corrupted by the Air, at that time constituted in very swift motion.

That *Vinegar* consists of gross and heavy Particles, is manifest by *Distillation*, which teacheth, that *Spirit of Wine* is sooner elevated into the Alembick than Water, and Water also sooner than Vinegar.

Moreover it may be said, that the Volatile Salt of Flesh killed is coagulated with *Vinegar*, and so is kept unmoved, and impeded from being fermented with the Air, losing its Figure, and flying away; as we see the Volatile Salt of *Hartshorn*, or any other Volatile Salt, coagulated with an acid Spirit, not to fly away, as it is otherwise wont to do.

The end of the Fourth Decade.

DECADE

D E C A D E V.

OBSERVAT. I.

Of a Wound of the Head.

A Youth aged Sixteen years, fallen from an Horse to the ground, received a sufficiently large Wound in the forepart of his Head; which was indeed so great, that the Bone presented it self bare to the sight; in the mean while the Patient did often vomit and was very ill. Two hours, after this mishap, were scarcely elapsed, before I was called to this Youth, in whose Head I could perceive neither Fissure, nor Fracture, nor imbowing of the *Cranium*; and at that time the Vomiting ceased, and the sick Youth was pretty sedate, and complained not much of pain or of any other discommodity.

It would in this place be superfluous to explain whence this Vomiting proceeded; the matter being (as I judge) sufficiently clear of it self.

The Hair being shaved off, I filled the
Wound

Wound with dry Lint; and indeed did this for two reasons: *First*, that the Flux of Blood might by this means be stopped. And *Secondly*, that the Lips of the Wound might be in some measure separated each from other, to the end that the *Cranium* might (the next day) be the better discovered.

Then I superposited a Plaister made of the following Mass.

Rx. Emplast. Diapalma, ʒij.

Bolus, and common Chalk, of each ʒij.

Diaphoretic Antimony, ʒj.

Oyl of Bays, ʒij. Of Tartar, p. d. ʒss.

Mix and make a Plaister.

The next day nothing of evil appeared in the *Cranium* discovered, and the Patient was scarcely vexed with any evil Symptome; whence I conceived hope, that the Interior part of the *Cranium* had also received no hurt, and that the Brain likewise lay unprejudiced within both its Infoldings.

Therefore, the Bone being first covered with dry scraped Lint, I applied to the Lips of the Wound this following Medicament.

Rx. Common Turpentine,

Honey of Roses, of each ʒss.

Myrrh, Aloes, of each ʒss.

Mix these, make an Unguent.

By

By this means the Patient was in a short time restored to his pristine state of health.

The Plaister was applied for temperating the Acidity, and that it might speedily dissolve whatsoever was coagulated by the Contusion: The *Unguent* was also added for restoring the Circulation of the Bloud and Humors, somewhat impeded by reason of the small passages (in the Wound) interrupted and distorted.

The bared *Cranium* was covered with dry scraped Lint, partly that the *Pus* (issuing from the Lips of the Wound) might infer no damage to the Bone, and partly that the ambient Air might (by this means) be kept from the *Cranium*, to which, by reason of its Acidity (with which it abounds) it is very inimical, as the daily coagulation of Bloud let out from a Vein cut (caused by the external Air) doth plainly teach.

But that kind of Lint which is in Dutch called *Catoen*, is not convenient in Wounds, because it is often wont, by its acute Angles (with which it abounds, as by the help of a *Microscope* may easily be seen) to excite Inflammation.

All fat things I here studiously avoided, because they, with their stringy Particles, too pertinaciously obstruct the very small passages of the *Cranium*, and so cause the Humors to stagnize and wax acid, corrupt

the Volatile Salt of the *Cranium*, and induce rottenness; and then the Cure must needs be not a little procrastinated, by reason of the perished part of the Bone, which must first be separated.

As *Sculetus*, in his *Chyrurgick Armoury*, appoints the part adjoyning to a Wound with astringent Oyls (for some time) to prevent Inflammation (as he judgeth, but improperly: For in an Inflammation the Circulation of the Blood should not be stopped, but promoted; because the Blood and Humors, by reason of their coagulation, in an Inflammation stagnize more than is fit; therefore it would in this case be an Argument of much greater prudence, to dissolve the coagulated Humors by Plaisters temperating Acidity.)

The cutting of a Vein, which many egregiously extol in Wounds of the Head, I wholly omit, because I see not any Utility thence to arise.

To distinguish Medicaments, into Mundificatives and Narcoticks, and to take sometimes These, and afterwards Those into use, is a matter of no Utility; for our Unguent onely is sufficient, and performs whatsoever is necessary, whilst it temperates Acidity, and restores the Circulation of the Humors. But in the mean while it is to be observed, that when the Wound was almost filled up with flesh, omitting the ar-

fore-

foresaid Unguent, we at length applied dry scraped Lint; for otherwise the Flesh would have been too luxuriant and risen higher than was fit.

The Ancients in Wounds of the Head used a Swathe which is called *Cancer*, the delineation of which may be seen in *Sculptetus*; but in these our days a common Napkin fitly applied is generally used.

Vomiting, in a Wound of the Head, for the most part portends much evil; but that it is not always an infallible sign of a Fracture of the *Cranium* of a *Fissure*, or any other very great discommodity, is clearly evident by our proposed case.

Full of peril is a Wound of the Head, which beguiles us most when it seems most pleasing. Therefore no Wound of the Head (though very small) should be lightly esteemed, or negligently handled; but here we should rather suspect all things, because where *Chyrurgeons* are most secure, there commonly lies a Snake in the Grass.

Having for some time pondered these things in my mind, I judge it worth while before I put an end to this *Observation*, to enlarge my Discourse more than I am wont to do, that if (in this case) I cannot satisfy others, I may at least give satisfaction to my self, for whose Instruction I write these.

It is out of all doubt, that a very small

Wound of the Head, long after it hath been inflicted, may infer Death; yet this hinders not, but that it may sometimes happen, that a Patient having a Wound of his Head (accounted almost by all men most dangerous and mortal) may recover, contrary to the expectation of *Physicians* and *Chyrurgeons*. So, I remember, some years since, to my Fathers care was committed a certain wounded man, who had with a Spade received so horrid a Wound in the forepart of his Head, that (by the stroke inflicted) not onely a very great part of the *Cranium*, but also no small portion of the Brain it self was shattered, and notwithstanding this, the same man is at this time (at *Arenacum*) living and well, yet his *Hemiplegia* still remains.

By this History I shall(perhaps) prove the opinion of the most famous *Willis* to be false, who endeavours to perswade his Reader, that the seat of the Memory is found to be in the Cortex of the Brain; for if this were true, then our above-recited Patient must needs have had his Memory much impaired, whereas it is at this time no less vigorous than it was before the Wound received.

But what do I speak of those who have recovered of an horrid Wound of the Head? Is it not much more wonderful, that to some persons very great benefit redounds

dounds from a Wound of the Head so very perilous, that it is by most men accounted mortal? especially seeing there want not Examples testifying the same? So you may read (in *Schenkius*) how a certain man, receiving a dangerous Wound in his Head, was freed from an inveterate and very pertinacious *Epilepsie*. Also if it be not too much trouble to you, I would have you peruse the most famous *Hildanus* (in his Second Century , *Observation VIII.*) who exposeth to sight a case sufficiently rare ; where he saith, A certain man received a Fracture of the *Cranium*, upon the conjunction of the *Sagital* , with the *Coronal Suture* ; and the same man afterward (the Ulcer notwithstanding remaining) was by this means freed from a great and troublesome *Cephalalgy*, with which he had been for a long time before) very much molested.

Such Histories as we have now related, very rarely happen, therefore in a Wound of the Head (whatsoever it be) it is best to be always too careful , rather than at any time too secure.

But a Wound of the Head, where the Patient is infected with the *Veneral Lues*, is much more difficultly healed ; as also if the same part hath been often wounded before. For usually in the *Lues* an Acido-corrosive Humor is peccant, which contributes

no small Impediment to the cure of Wounds. But when it happens that the same part hath been often wounded, it is well known, that not a few of the small passages there remain distorted in a wonderful manner; so that the Bloud and Humors are thereby not a little impeded in their Circular Motion, by the benefit of which (notwithstanding) almost the whole cure of Wounds is effected.

That the Circulation of the Bloud and Humors is impeded in a part once or oftner wounded, though the Wound be long before healed, is manifest by this, *viz.* that the parts formerly wounded are frequently sensible of the approach of Cold or Storms more than usual.

Moreover, a Wound of the Head is more or less dangerous according to this or that part of the Head on which it is inflicted: So a Wound of the hinder-part of the Head is judged less perilous, because the Bone of that part (by reason of its grossness and solidity) seldom suffers a Fracture or Fissure, although it receive a stroke very vehement; and when it doth happen to be broken or crack, then the Filth notwithstanding (in this Fracture or Fissure collected) doth not so easily distil down upon the subjected hard *Meninges*.

But a Wound inflicted on that small Bone of the *Brain*, with which maturity of Age

Age afterward fills up the open place in Infants, is accounted, and undoubtedly is, very perilous, because that Bone is tender and nigh the *Suturos*.

So a wound of the Temples is very formidable for many Causes; and indeed first, because the Temporal Muscle is covered with the *Pericranium*.

Secondly, because there lies an Artery (sufficiently great) which being wounded induceth a very dangerous *Hæmorrhagia*, which must needs be very difficultly stopped; because while we speak or eat the Temporal Muscles are moved, and so the flux of Blood (before cohibited) is often wont to return and be renewed.

Thirdly, because the Nerve (in the Temporal Muscle) hurt is wont to excite a *Spasmus*, and indeed such as in Dutch is called *de klem*, and hinders the Patients eating. So when a Muscle of the Temples is very much hurt, its opposite Muscle is contracted, and that Affect excited, which is called Torture (or Wryness) of the Mouth.

Fourthly, because Artificial Section (sometimes necessary in Wounds of the Head) cannot be safely made in a Temporal Muscle.

Fifthly, because the cure of Wounds requires rest of the wounded part, which notwithstanding is often disturbed in a

Wound of a Temporal Muscle, viz. as oft as we eat or speak.

A Fissure in *Sutures* is also worse than elsewhere, and most difficultly found. So *Hippocrates* (*Epid.* 5.) freely confesseth himself to have been deceived, and indeed to the ruine of the wounded man.

A Wound inflicted on the Eye-brow, so as the Cavity be opened, which is found in the Bone of the Forehead, emits wind, because that Cavity of the Bone is previous into the Noethrils; that Wound can scarcely (by any means) be consolidated, according to the testimony of *Celsus* and others that have seen such cases.

Chyrurgeons, when they doubt of a Fracture or Fissure of the *Cranium*, give to the wounded man a Nut to crack with his Teeth; or they shake a Thred (one end of which the Patient holds in his mouth) observing whether he can bear that trembling motion without trouble.

When the *Cranium* is bared, we generally with a Probe search whether there be a Fissure or no. But that this Examen may be rightly instituted, 'tis behooful before all things exactly to know the accustomed site of *Sutures*; least a Fissure be taken for the *Suture*, or the *Suture* it self for a Fissure. Also, that this Errour may be wholly shunned, it is expedient for the Artift always to bear in mind, that the *Sagittal Suture*

Suture doth sometimes (contrary to the usual custom) slip down as far as the Nose, and so deforms the Forehead; yea, also that it sometimes extends it self to the hinder-part of the Head and divides that. Here likewise the Observation of a certain Anatomist is worthy of remarque, who affirmeth he saw that little Bone of the *Bregma*, with which (in riper age) the place lying open in young Children, is filled up to be circumscribed with a small *Suture*.

In the Writings of *Parey*, *Fallopins*, and others, we may read of wounded men, in whom (being dead and opened) the external Table of the *Cranium*, which received the Wound, was discerned to be intirely whole, the Internal (in the mean while) not onely cleft, but also exhibiting certain Fragments, which (by their punction) molested the *Meninges*. How could this happen? I answer: The vehement stroke had very much agitated the *Subtile* matter nearest, and so this Subtile Matter most swiftly moved (without delay) freely passed through the first Table of the *Cranium*, inferring no damage; but when it came to the second Table of the *Cranium*, much more solid than the first (as *Anatomists* testify) it there met with Pores so very small and crooked, that it could not pass unless by a new way, which it in a moments time violently prepared for it self; and so
(many

(many Pores being broken through) egregiously cleft the Internal Table of the *Cranium* : As Lightning is reported to have melted a Sword leaving the Scabbard unhurt ; so *Aqua Fortis* dissolves *Silver* , not hurting *Wax*.

Many declare that it sometimes happens, that the right-side of the forepart of the head being struck, the left-side is crackt, the right-side remaining whole ; and such a Case is usually called a *Contrafissure*, though this word *Contrafissure* is often extended to other cases also.

I willingly confess I never saw such a *Contrafissure* ; but *Celsus* affirms such a case hath happened, *Aegineta* denies it , therefore I suspend my judgment about this matter.

It so happens sometimes , that the Marrow which is found between both Tables of the *Cranium*, is (by a forcible stroke) crushed and squeezed out with the Bloud (also by the same force) extravasate : and so this Marrow with the Bloud conceives an Acido-corrosive *Acor*, by which it induceth rottenness on the Internal Table of the *Cranium* ; and so (sometimes) the acrid and aqueous Humor, proceeding from the perished Bone , infects the *Meninges* and Brain it self, and infers sudden and unexpected Death, some Weeks, yea some Months after the hurt received ; the *Cranium* in the

mean

mean while on the out-side appearing whole, not shewing either Fracture or Fissure. Such Examples are here and there described by Authors that have written of Chirurgy.

The *Cranium*, with the *Dura-mater*, being hurt, sometimes (in the space of 24 hours) ariseth a *Fungus*, in magnitude almost as large as an *Hens-Egg*, which the most famous *Malpighius* judgeth to derive its Original from those *Glandules* hurt, of which the *Cortex* of the *Cerebrum* is compounded, and which (according to his Opinion) end in the Roots of the Nerves, into which they transmit their nervous Juice received from and purified by the Arteries.

It is by almost all Authors seriously advised, that no Wounds of the Head be sewed up, and indeed very well.

When Wounds of the Head were bound up, *Vesalius* always used a Wax-candle lighted (not a Suet-candle, because fatness hurts the Bones) to the end it might in some measure temperate the cold of the ambient Air; but at this time some Chyrurgeons use a certain Brass Vessel filled with live Coals, which Vessel is in *Dutch* called *een bedpan*.

The middle space, that is between both Tables of the *Cranium*, is found to be much thinner in Children, than in Men full grown; which is (as I judge) very fit to be

be well observed by Chyrurgeons when they either use a Trepan or Lancets ; for otherwise it may happen that they may perswade themselves they are not yet come to the middle space, when in the mean time they hurt the *Meninges* it self.

Some, before they use the Trepan, chuse to make a cross-like Incision of the Flesh ; others a Triangular ; but my Father always esteemed the Circular Incision best, and so he separated and took away all that portion of flesh from the *Cranium*.

In Operating some dip their Trepan in Oyl for temperating the heat, (as they say) but evily, because Oyl, as we have often said, is inimical to the Bones ; wherefore common Water may in this case better serve.

The Ancients opinionated, that the Marrow and Brain in Animals increased in the first Quarters of the Moon ; therefore at the Full Moon they forbid the use of a Trepan. But at this time Experience hath taught, that the Brain in the *Cranium*, and the Marrow in the Bones of Animals, do no more abound in the Increase of the Moon than at any other time ; thus this Opinion, superstructed on so sandy a Foundation, falls to ruine.

The Ancients would not permit the Trepan to be put in *Sutures* ; but we have *Chirurgeons* at this time who do this without fear.

It

It sometimes happens, that the *Dura-mater* very firmly adheres to the *Cranium*; yet this is but seldom, and is beside the usual custom.

To the *Meninges* lying bare, *Scultetus* applies Oyl of *Roses*, *Celsus* Vinegar; both err, the one more, the other less. What can Oyl effect, unless it be the obstruction of the Pores and Passages of that Membrane, and so impede the Circulation of the Bloud and Humors? But Vinegar will coagulate the Bloud and Humors, circulating through the *Meninges*, and so not a little hinder the circular motion of them.

What shall then be here applied? *Honey* or *Syrup of Roses*; but best is the *Syrup*, (being less sharp) which may be put in hot with a round Lint, having a Thred tyed thereunto.

The Trepan being used, it sometimes happens, that no Evil is found upon the *Meninx*, but the *Pus* lies hid under the same: When this is seen, the *Meninx* must be cut, that passage may be made for the *Pus* to flow out. Here is no cause of fear, that the *Pia-mater* will be hurt, because the interjacent *Pus* prevents that. I remember that this Apertion of the *Meninx* was happily instituted at *Arenacum*.

A Patient wounded in the Head, should rather assume Meats liquid than solid. For otherwise the motion of chewing may some-

somewhat molest the wounded part ; and indeed more especially if the Wound be inflicted in the Temples.

If Sneezing sieze any one wounded in the Head, it will undoubtedly too much shake his Brain and hurt the Wound. Therefore it would be prudence so soon as Sternutation is perceived to approach to prevent the same ; which may easily be effected, if at that time we often rub the greater Angle of either Eye with our Fingers.

In a Wound of the Head, Anger and Venery must (above all things) be shunned, because they very much disturb the Brain, and so infer no small damage to these miserable Patients, as frequent Experience daily proves.

Thus I shall now at length put an end to this *Observation*, after I have said, that here I have offered none but things rare and worthy of note. For all other things pertinent to Wounds of the Head, are largely enough treated of by *Parey*, *Hildanus*, *Scultetus*, and other writers of Chirurgy, which to repeat here (I judge) would be wholly needless.

OBSERVAT. II.

Of a Wound penetrating the Thorax.

A Young man Thirty years of age, received a Wound between the sixth and seventh Rib (if you reckon from the inferiour) with a Sword , which penetrated into the Cavity of the Breast, as was experienced by a Probe gently thrust in ; as also by the Air, impetuously enough issuing out from the Wound. The Patient in the mean while eat well and complained little.

Because this Wound was not sufficientl^y opened to give Exit to the Pus, we put iⁿ a Tent (made of Sponge) with a Thred tyed to it, and by this means the Wound was the next day very well opened. Therefore we then applied a Tent made of a scraped Lint, and anointed with a good Digestive, with a Plaister temperating Acidity, and a good Ligature.

In the mean while the Patient drank twice a day three Ounces of the following *Apozem.*

Rx. Of

Rx. Of the Herbs Colts-foot, Maiden-
 Hair, Scabious, of each Mij.
 Leaves of the Fir-tree, Mj.
 Raisins stoned, ʒiij.
 Fennel-seed, ʒss.
 Barley, Mij.

Boyl all in equal parts of Common Water
 and French Wine, and use the Colature;;
 which also, when necessity requires, may
 be injected by a Syringe into the Cavity of
 the Breast, being (at that time) mixed
 with an Ounce or two of Honey of Ro-
 ses.

The Wound, thus handled for severall
 days, emitted a little Pus, and the Patient
 was otherwise very well; therefore we dai-
 ly formed the Tents shorter, and so the Pa-
 tient was (in six Weeks time) wholly reco-
 vered of this Wound.

The Probe, with which the deepness of
 the Wound was searched, was not Iron;;
 because this Metal (by reason of its rigid-
 ness) doth not sufficiently give way to the
 Muscles, which are wont sometimes to en-
 ter and fill up the place of the Wound,
 when the Patient changeth the posture of
 his Body; but a Wax-candle (in Dutch cal-
 led *een wassichje*) was used, which in
 this case, by reason of its flexibility, would
 better serve. But before we set about this
 work, we commanded the Patient to stand
 with

with his Body in the same posture in which he stood when wounded.

The Air brake forth impetuously enough from this Wound, and sometimes so forcibly as it would blow out a Candle held near. But whence did this happen? I Answer, When the *Thorax* is streightned in Expiration by the Muscles of the *Abdomen*, as also by its proper Muscles, the Air (commixt with not a few Vapours) is compressed, and compelled to seek for it self an Exit; and so, by reason of the streightness of the place, it is with great force driven out from the Wound, no otherwise than as we see Air with great impetuosity to issue out of the Nose of Bellows, when the sides of the Bellows are only gently compressed. For so a great part of the motion, which before did diversly agitate the several Particles of the Air, is now imployed to move the Air to one part only.

But why was the Tent tied with a Thred? I answer; That it might not be forced into the Cavity of the Breast. For that such a thing hath sometimes hapned, very many Histories testifie; yea, we have read, that Tents have not only been forced into the Cavity of the *Thorax*, but also that the same afterward hath been by the Mouth of the Patient expelled with coughing.

Therefore, whence is it that the Tent
 O some-

sometimes penetrates into the Cavity of the Breast? Shall we with the Ancients answer, that is done by Suction or indrawing of the *Thorax*? No: For we can clearly and evidently enough demonstrate that every motion conspicuous in this Corporeal Universe is made by Pulsion.

It would be no less absurd and discomfiting to Reason, if I, with many others, should in this place have recourse to the *Asylum* of a *Vacuum* which is not, as is clearer than the Sun at Noon, to all those that are not wholly blinded with their own Prejudices; and is distinctly enough explained by the famous *Cartesius*, in his Second Part of the *Principles of Philosophy*.

But that we may call this what it is, and what may most easily be understood, we reply in this manner: When the time of Inspiration is present, the *Thorax* is rendered more capacious, because the *Diaphragma* is contracted downward. Now because the *Diaphragma* is thus contracted, the Belly egregiously swells, and so forcibly enough drives out the Air, which (there being nowhere any Vacuum) at the same moment of time must needs enter the *Thorax* enlarged as aforesaid; and so the Air enters; partly through the Cleft of the *Larynx*, partly also through the Orifice of the Wound, (as being a passage more commodious

modious, more short, and more free) and when the Air so rusheth inward through the open wound of the *Thorax* , in its passing through it forceth the Tent in with it self, if it be not tyed with a Thred strong enough.

Some Authors, when they suspect that some part of the Bloud or *Pus* doth lye upon the *Diaphragma*, they endeavour to heal up penetrating wounds of the Breast, without the help of any Tents, and commend the same to others ; but in the first days they cannot be sufficiently assured of this matter : therefore they seem to act more prudently, who (with me) for some days use Tents, and in the mean while as much as they can keep the ambient Air from the Wound. But in the interim we must be very careful in due time to abstain from Tents : For if their use be protracted longer than is fit, an uncurable Fistula may happen, continuing to the last moment of life ; because the continual agitation of the Breast in Respiration (which is no small hindrance to the Consolidation of Wounds) is not a little conducent to the production of such an Evil.

Penetrating wounds of the *Thorax* are very dangerous, and compel many to bid adieu to the Society of the Living, and in others excite a *Ptifick* worse than death it self. But in the mean while, I remember

I have read of one, who was happily freed from an *Asthma* (with which he was long before cruellly afflicted) by a wound penetrating into the Cavity of the *Thorax*. Yea, I at this time know an honest Citizen of *Arnhemium*, to whom a penetrating wound of the Breast proved very salutary. For he for a long time before had been afflicted with an *Empyema*, and daily expected death: but when by another (I know not from what cause provoked) he was wounded with a Sword, so as the Wound penetrated into the Cavity of the Breast; and by this means, the *Pus* flowing freely out through the Orifice of the Wound, he was in a short time after freed from his *Empyema*, my Father (while he lived) being his Physician.

When, in a very small Wound of the Breast, Chyrurgeons doubt whether the Wound hath penetrated into the Cavity of the *Thorax* or not, they are wont to hold near to the Wound either burning Tow, or the flame of a lighted Candle, and thence they judge of the penetration of the wound; if there be a Trembling motion in the flame of the Tow or Candle, excited by the Air proceeding from the Breast, then the Wound is deep, otherwise not.

When it happens that any part (contained in the Cavity of the Breast) is also hurt, then the Wound must be kept open the

the longer, and into it twice a day some
 it Injection be emitted hot, without the
 addition of *Carduus Benedictus*, *Aloes*, *Worm-*
wood, and other bitter things, as some are
 wont to add. For the bitter Particles car-
 ried upwards with the Air, through the
 Branches of the Pipe of the Lungs hurt,
 affect the Tongue with a bitter and trou-
 ble some taste, as frequent Experience wit-
 nesseth.

If any great sanguiferous Vessel (sited in
 the Cavity of the *Thorax*) be wounded,
 then much Bloud is wont to be collected
 together above the *Diaphragma*, and (by
 this means) to excite heaviness about the
Diaphragma, *Fevers*, *Watchings*, *bloody Ex-*
cretion, *prostrated Appetite*, and *difficult Respi-*
ration.

This Bloud must be several times every
 day evacuated through the Orifice of the
 Wound; yea the *Pus* also, which some
 days after the Wound received usually fol-
 lows.

If the Bloud that flows out from a
 Wound inflicted be found froathy, it is a
 sign the Lungs are wounded; and such a
 Wound often infers on the sick a *Tabes*, but
 more often death. This will not seem
 strange to any man, who (with *Malpighius*
 and other curious searchers of the Humane
 Body) will not disdain somewhat more
 piercingly (than the Ancients have done)

to inspect the substance of the Lungs. So doing, he will discern the Lungs to be no other than a certain conjoined heap of membranous small Bladders, clothed with a wonderful Net (composed of the minute very small Branches of the small Veins and Arteries) into which small Bladders passage is given to the Air through the rough Artery.

Hence therefore it is sufficiently manifest, that a Wound of the Lungs cannot be so very small, but that some small sanguiferous Vessels of these small Bladders must also be hurt; whence the Cure is rendered yet more difficult (which was before of it self difficult enough) because these small Bladders are membranous, and posited in continual motion, into which every hour new Air is introduced. For membranous parts are more slowly healed than the fleshy; and no man can doubt, that rest of the part hurt hastens the consolidation of a Wound, if he hath (but once in his life) observed how easily wounds of the *Tibia* are healed, the sick keeping himself in a Lying-posture; and on the contrary, how difficultly the same wounds are consolidated when the Patient daily walks about the Streets. And lastly, who knows not that the ambient Air ought diligently to be kept from Wounds?

Therefore wounds of the Lungs (as we said)

lid) are by Experience found to be almost all mortal. Yet in the mean while we read, that a Patient may supervive the taking away a piece of his Lungs by a Wound.

Assoon as men are born and respire the Lungs are filled with Air; but it is not so in the Young whilst in the *Womb*. To this Physicians give heed, when they are compelled by the Magistrate to give their Opinion whether an Infant died in the *Womb*, or lost its Life out of the *Womb*. For then they take the Lungs out of the Breast of the Carcass and put them into water: if they swim above the water, they conclude the Infant died out of the *Womb*; but the contrary when they sink and are submerged.

A Wound in the fleshy part of the *Diaphragma*, brings the sick into no small peril, yet that is sometimes healed. But when a membranous part of the *Diaphragma* is wounded, the Patient (a *Fever* and *Delirium* arising) expires not long after. Nor indeed is this to be wondred at, seeing (by reason of the continual and very sensible motion of the *Diaphragma*) the small passages about the Wound are very much distorted; whence the Humors there stagnating wax acid and produce Inflammation. And when these acid Humors are (from the Inflamed part) absorbed into

the sanguineous mass, a Fever is induced, which a *Delirium* follows. So I remember a Carter of *Arnhemium*, who was wounded with a Knife in the membranous part of the *Diaphragma*. Presently after the wound inflicted he came to our house on foot; but soon after became so very weak, that he was carried home by two men, where (siezed with a *Fever* and *Delirium*) he died three days after.

But wonderful is that which I not long since read, viz. that in one man the Stomach, in another the Gut Colon (by a wound off the *Diaphragma*) ascended from the *Abdomen* into the *Thorax*, and that both Patients lived for some small time after.

A wound of the *Pericardium* is judged mortal; and where the substance of the Heart is also wounded, the Patient (for the most part) suddenly dies. Yet I am able truly to witness, that a Jew of *Arnhemium*, wounded in the very substance of his Heart, did notwithstanding (every day twice) for six days together (before he died) come to our house on foot to have his Wound dressed.

Galen in one place relates (as an Eye-witness) that the *Pericardium* being corrupted, the Heart lay sufficiently bared in the Breast of a certain sick Man, who notwithstanding recovered. But men at this day are found to be so very incredulous, that
with

with them such Histories find, or seem to deserve, little credit.

Whilst I make mention of the Heart, two Prejudices seem to me fit to be removed. The first is, *that* with which the generality of the Common sort are frequently affected; that is, they pertinaciously believe, that the Heart hath its seat in the Left-side of the Breast, whereas it is placed in the midst of the Breast. But occasion of this Errour was first given to the people from this, *viz.* because there is a more vehement Pulse felt in the Left-side of the *Thorax* than in the Right. But this happens because the great Artery hath its situation in the Left-side.

The other prejudice, which I was willing to reprehend, is this, *viz.* that some of the *Ancients* did perswade themselves that the Heart was afflicted with no Diseases; the falsity of which Opinion is notwithstanding daily proved by Experience. So in the French *Ephimerides* we read, that (in the right Ventricle of a Dogs-Heart) thirty and one living Worms were found, being of the length of one Finger, and as thick as a common small Needle. Moreover the Heart is sometimes affected with a certain Disease, called the *Polypus of the Heart*; touching which, peruse *Malpighius* in his *Anatomick Treatise of the Structure of the Bowels*.

In

In penetrating wounds of the Bowels, some Chyrurgeons instead of Tents use small Cannels of Silver, Lead, or of Linnen well waxed; but because Silver is often infected by the *Pus*, and Lead too soon covers the Lips of the wound with a *Cicatrice*, here in this place the Cannals made of Linnen well waxed ought to be preferred before the other.

Acid things are inimical to all Wounds, but especially to wounds penetrating the *Thorax*: For besides their coagulating the Bloud and Humors, and rendring them unapt for *Circulation*, they do also hurt in this case, *viz.* because with their Acid-Particles cutting on either side, they are wont to excite a cough.

But although I reject acid things, I do not therefore here commend sweet Syrups, seeing they profit the Lungs little, but (in the mean while) hurt the Stomach and other parts, as many others with my self do daily find by Experience. It is better from *Colts-foot*, *Maiden-hair*, and other fit Herbs, to extract their Tincture with boyling hot Water in such a small Vessel as the now commonly known Drink is wont to be prepared of the Herb *Tee*.

If a Patient be afflicted with a penetrating wound of the *Thorax*, and the Bloud, latent in the Cavity of the Breast, issue not out by the wound, let him hold one Graine
of

of Musk under his Tongue, and the Bloud will presently flow out, as *Sennertus* saith; but of the success I very much doubt.

Sometimes the place of the Breast wounded is higher than that the Bloud or *Pus*, congested upon the *Diaphragma*, can flow out; then is the Bloud or *Pus* not seldom seen to be expelled by the Mouth with coughing; yea, not a few Authors testifie, that at such a time the *Pus* is sometimes driven into the Bladder, and expelled with the Urine; which *Pus* (they think) may by two ways be brought to the Bladder: First, if through the small Veins or Lymphatick Vessels, it be forced into the sanguineous Mass, and with the same carried to the Reins; and at length (when it shall there be transcolated) descends by the *Ureters* into the *Bladder*, and so is expelled with the Urine. But the other way seems to be far more difficult: For they judge that the *Pus* can, in the form of Dew, transpire through the Pores of the *Diaphragma* (from within looking outward) and so passing through the whole *Abdomen*, at length enter the Cavity of the Bladder through the Pores of the same (from without looking inward.) That such Pores, from without looking inward, may be found, is evident by the following Experiment: In an hot Room invert a Bladder, and fill it with hot Water, and then you will

will see the Water transpire like Dew.

When it happens that the *Pus* (copiously contained upon the *Diaphragma*) cannot be expelled by the wounds being too highly sited, nor by the Mouth with coughing, nor be evacuated by the Bladder with the Urine, then is commended a *Paracentesis*; that is, an Artificial Incision in a lower place of the *Thorax*. This Incision is usually made between the fifth and sixth Rib (if you number from the Inferiour) not in the midst of the Breast, but in the Side; and this rather in the Anterior than in the Posterior part thereof; and rather about the Superiour than the Inferiour part of the Rib; and indeed with a Knife, having (for a good part of it) a Cloath wrapped round about, just at that moment of time in which the Patient breaths.

But in this Age wherein we now live, and in these Regions, this operation is very rarely exercised.

The *Paracentesis* being made, the *Pus* must not be let out all together and at once, but at several times. This all Chyrurgeons concede to, but few of them know why they do so. Some say the Spirits would be dissipated if the *Pus* should be let all out at one time; others feign, that provident Nature is then sensible of that Vacuum, therefore presently sends much, yea too much Bloud and Humors into that place.

place. But both these Reasons are so very frivolous, that they deserve no refutation. Therefore I shall briefly declare what I judge to be the reason of this: It is certain that into that place, from which the hot *Pus* hath receded, the cold Air hath immediate access; which doth not only molest the Fibrils (before somewhat injured by the *Pus*) but also produceth many Obstructions in the small passages; so that in them the Humors stagnize, are coacervated, wax acid, and by that means an Inflammation is excited, much after the same manner as when we have been exposed to the cold Air, and presently after are well warmed, we are not seldom afflicted with Catarrhs (as they are vulgarly called) and when we are above measure hot, and at that time drink cold Beer; we are sometimes punished with a Pleurisie.

OBSERVAT. III.

Of a penetrating Wound of the Abdomen.

A Young man, aged Twenty years, was wounded by an Adversary of his, so that

that the Sword passed through the anterior part of the *Abdomen* and pierced through his Back.

The Patient soon after he was wounded took his Bed, and the first days did somewhat complain of this or that Discommodity; but afterwards from day to day he waxed better and better; and both his Wounds (in three weeks space) were perfectly consolidated with the use of Tents put in, which were first anointed with a good Digestive, and a fit Plaister superposed.

It was not necessary in this case to search into the profundity of the Wound, it being sufficiently manifest, that this Wound had penetrated into the Cavity of the *Abdomen*, because the Swords point had passed through the Belly and came forth at the Back.

Otherwise the profundity of a Wound is wont to be searched out by an Iron or Leaden Probe; but better is a Wax-candle (which is in *Dutch* called *een Waslichtje*) because it can much more commodiously be bowed, and accommodated to all occurrent *Meanders*. Here in the mean while it is to be studiously observed, that sometimes the Probe enters very deep, passing through the *Interstitiums* of the Muscles, and the Wound (notwithstanding) penetrates not so far as into the Cavity of the Belly.

And

And on the contrary the Wound sometimes penetrates into the Cavity of the *Abdomen*, though the Probe (when thrust in) presently finds resistance, *viz.* because the parts in the Body hurt were otherwise figured when the sick was wounded, than afterward when the state of the Wound was searched into.

A Wound of the *Abdomen*, though it penetrate not into the Cavity of the Belly, yet is difficultly healed, by reason of the motion of Respiration: For Wounds to be consolidated require Rest.

But if a Wound of the *Abdomen*, not penetrating, be in the *White-Line* (so called) then it is much more difficultly healed, and very painful.

In the Second *Observation* of this *Decade*, I willed the enlargement of very small wounds of the Breast; but this Operation deserves not place in wounds of the *Abdomen*: For in such it is to be feared that the *Omentum* or Bowel, through too large an hole of the Belly, should slip out of the Cavity of the *Abdomen*.

Some dream, that the *Resurrection* of the Dead shall take beginning from the small Bone contained in the 18th *Vertebra*; but they dream indeed without any similitude of Truth. Truly I know not what answer men of such an Opinion would give me, if I should ask them, whether that man
should

should not rise in whom that small Bone had (while he lived) been broken to pieces by a Wound.

The Testicles hang without the Cavity of the *Abdomen*, and therefore may be easily wounded; yet their being wounded hazards not the life of the Patient. For we by experience find, that a man can survive the cutting out of both his Testicles. I my self familiarly knew a man (studious of Medicine) who had both his Stones by reason of a *carnous Hernia* happily cut off.

What then are the Testicles? They are no other than a certain Congesture of very many most small Threds or Vessels confecting the Seed; which Threds, if separated each from other without breaking, would (in a man) easily exceed the length of twenty Ells. For the Testicle of a *Dormouse* is extended to fifteen Ells.

Many Chyrurgeons, to Wounds do first of all apply repelling things, that is things cold and astringent; but in wounds of the Groin omit them. If you ask their reason, they will answer you, Because the *Emunctory* of the Liver is in the Groin. This Answer is both frivolous and ridiculous, and we have already (in the Eighth *Observation* of the First *Decade*) exploded and sufficiently refuted the same.

What then is the reason that Chyrurgeons

ons do any where else but in the Groins use cold and astringent things? Attend a little and I will tell you. Cold and astringent things hurt almost every where, but more in the Groins than elsewhere; which *Experience* (the Mistress of Fools) hath taught them. The fact they know and confess, but are wholly ignorant of the cause of such an Effect. Therefore they feign to themselves such a *Chymæra*; whereas (in the mean while) the true cause is, that certain *Glandules* have their seat in the Groins, which *Glandules* are no other than a Congesture of very small Vessels much inflexed, in the *Meanders* of which the Humors more easily subsist than elsewhere, if Chyrurgeons (by cold and astringent things unseasonably applied) retard their Circulation.

All penetrating Wounds of the *Abdomen* are dangerous, but far more perilous when they are large; because the *Omentum* (or Bowel) at that time easily slips out; and if it be not, presently after its Egress, forced into its proper place, it dies and changeth its colour by reason of the ambient Air. But whence is it that the *Omentum* for some time remaining out of the Belly so suddenly dies? The *Omentum* consists of very many small Bags, into which the Grease is conveyed through several fatty Vessels, as the most accurate *Anatomists* of this Age

P plainly

plainly witness. Hence it is now easily manifest how readily the Grease (in its small Bags) and the Matter (contained in the very small fatty Vessels) may be coagulated by the cold Air.

Now when the *Omentum*, issuing out off the Cavity of the *Abdomen*, by reason off some delay, is in the aforesaid manner corrupted; then must a Thred be tyed between the sound and the corrupted part, and leastt the sound part also be infected what is corrupted must be cut off; and if the Wound be found too large, that must be sewed up :: but the aforesaid Thread hanging out off the *Abdomen* must be left so, until it falls off of it self in process of time. Thus I knew one, part of whose *Omentum* (by its too long stay out of the *Abdomen*) was corrupted, recovered happily of his Wound, who was after the same manner handled by my Father.

In a large wound of the *Abdomen*, the Bowel sometimes issues, which must be presently thrust in; for otherwise it is so distended with *Flatus's*, as it cannot be thrust into its pristine place. But whence is it that the Bowel is so distended with *Flatus's*, remaining out of the Belly for some short time? I answer; A certain Fermentation is excited, not onely in the *Chyle*, *Pancreatick Juice*, and *Choler*; but also in the *Feces* left of the *Chyle*, and in the

Fer-

Ferment adhering to the sides of the Bowels. Hence arise many Vapours (not to mention those Vapours which from the Pores of the small Arteries, continually enter into the Cavity of the Bowels) which must needs be accumulated in the Cavity of that Bowel, and distend it; if in the Bowel abiding out of the *Abdomen* the Pores (from within looking outwards) be closed up by the ambient Air.

Now what remains to be done, when the Bowel out of the *Abdomen* is seen distended with *Flatus's*? The closed Pores are to be opened, and greater agitation contributed to the Vapours contained within; which may well be effected, if a Thred newly twisted, but not purged by boyling, having been first boyled in sweet Milk, be applied hot.

• Then the Bowel, the *Flatus's* being absorbed, must be repositied, and (if need be) the Wound, in some part sewed up.

If the Bowels be also wounded, the life of the Patient is in very great danger; and indeed the more, if the Wound be inflicted in a thin Bowel, but not so if in a more gross Bowel; because in this the Wound, after it is sewed up, is more easily conglutinated; the Bowel being such as consists of a greater number of small passages, through which the nourishing Humors are conveighed. So the gross Bowels

generally contain onely *Feces*, but Bowels more slender the *Chyle*.

Whilst I here treat of the Bowels, a certain Dispute, which hath been for a long time contraverted among Physicians, comes into my mind, *viz.* whether nourishing Clysters injected do obtain the wished Effect; or whether (as some say) they be wholly unprofitable for Nutrition; because, according to their opinion, they come not so far as to the sanguineous Mass? But they err who embrace the last opinion, if credit may be given to credible men, who (taught by Experience) witness, that the same quantity of *Spirit of Wine*, if injected into the Fundament by a Clyster, will sooner inebriate than if taken in by the Mouth.

The Liver consists of certain glandulous Kernels, into which the small sanguiferous Vessels conveying their own Humor, are terminated, and of the Branches of the Biliary-Pores, which receive the Choler separated in those glandulous Kernels.

Moreover great sanguiferous Vessels are seen in the Liver, whence it is easily understood how dangerous are those Wounds that are inflicted on the Liver. For if the great Vessels be opened, an *Hæmorrhagia* yielding to no Remedies follows. And though those great Vessels be not hurt, yet a wound of the Liver (though but small) doth

doth in the mean while disturb the separation of Choler, which notwithstanding we know to be exceeding necessary in the *Oeconomy* of an Animal.

But notwithstanding these, *Paulus Aegineta* speaks of a man that recovered of a Wound that had taken away a piece of his Liver.

It is wonderful indeed, that one man should supervive the loss of a piece of his Liver, and another die by the too-great increase of his Liver. So some years ago, to my Fathers care was committed a Sick-man, afflicted with a vastly tumified Belly, continuing so unto Death. His Carkass being opened, clearly presented the cause of this Evil to the sight, for his Liver was incredibly augmented. I remember the same hapned in an *Hen*, which never laid Egg, the Liver of which weighed an entire pound.

The Spleen is a congesture of small Membranes, formed into small Cells and Concamerations, in which Cells innumerable oval and white Glandules (into which the Arteries, Veins, and Nerves are opened) do in a wonderful manner adhere.

Here it is to be understood (as an industrious *Anatomist* of this Age judgeth) that the Humor is carried, through the Arteries, into the Glandules of the Spleen, and by the Glandules (being there separated and

somewhat acid) into the above-named small Cells ; and from those Cells, imbibed with an acid Ferment, into the *Splenetic-Branch*, and so to the Liver ; where, in the Bloud, it in some sort precipitates the Choler, to the end that may so much the more easily be separated in the glandulous Kernels of the Liver.

Hence it is now manifest, what great misery a Wound of the Spleen infers on the sick.

The Reins consists of Glandules, into which the small Arteries, Veins, and Branches of the Ureters, are terminated. Through the small Arteries the Humour is deferred into the Glandules of the Reins, in which the Urine is separated, and taken from the Branches of the Ureters is forced into the Bladder.

That the matter is thus, you will more easily believe, when you shall know the following Experiment, which a certain Professor communicated to me, and is this: If you, by a Syringe, inject warm Milk into an emulgent Artery, the more gross part will return by the emulgent Vein, and the wheyish Portion be sequestred in the Reins, and thence conveyed into the Ureter.

Hence it is apparent how perilous Wounds of the Reins are, and how difficultly they can be consolidated ; also
hence,

hence, whence proceeds Bloud excreted with the Urine, when the Reins are wounded, is easily understood.

Whilst I am speaking of the Reins, I call to mind a certain Question often bandied about among Physicians, viz. which way the *Drink*, a little after it is assumed, cast out by the Urinary passage, can come so soon into the Bladder? or whether it first comes to the sanguineous Mass, or not touching the Bloud, presently and immediately hastens to the Reins or Bladder?

The latter seems more probable, and is confirmed by the following Experiment: If a Vein be cut in any one a little after he hath eaten *Garlick* or *Asparagus*, neither the Bloud extracted, nor the whey-like Humour floating above it, shall have either the odour or taste of the *Garlick* or *Asparagus* eaten, when (in the mean while) the Urine shall manifestly exhibit the odour of *Garlick* or of *Asparagus*.

Now, whether this Urine pass out through the Pores (of the Stomach and Bowels) from within looking outward, and through the Pores of the Bladder (from without looking inward) under the form of Vapours, having surrounded the Cavity of the Belly, and so at length is conveyed to the Bladder, or rather hath its tendency thither by a peculiar passage, I shall not at this time dispute, though the latter O-

pinion seems to me most probable.

Wounds inflicted in the bottom of the Bladder are very full of danger ; but those that wound the fleshy neck of the Bladder, are oftentimes consolidated , by reason of the abundance of sanguiferous Vessels, and multitude of small passages conveying the nutritious Humors. This is what we daily experience, after the exection of Stones, viz. that though those wounds be healed, yet sometimes the Urine flows from the sick involuntarily by the Yard ; the reason of this is, because in Section and Extraction of Stones, not a few Fibres of the Spinctor Muscle of the Bladder are cut in sunder and broken.

But if in the Cavity of the Belly, some of the small Lymphatick Vessels be wounded, may not an *Ascites* be by this means produced ? What shall I say ? such a case seems not to be impossible , though I cannot remember that I have in my practice seen any such thing , or elsewhere read of it.

Dolour of the Testicles in perilous wounds of the *Abdomen*, is a sign of approaching death, as the most experienced *Parey* testifies.

I have here hitherto spoken of wounds of the *Abdomen* inflicted from without, there is yet a Wound (remaining to be spoken of) which is inflicted from within, viz. as

as when in an *Ascites* the Navel bursteth, partly from the great distention of Water, and partly from the acuteness of the cutting Particles floating upon that Water. So I remember an Hydropick Maiden-Child, aged five years, which (her Navel being after the aforesaid manner burst) dyed in a few days after.

In such a disruption of the Navel, diligent heed is to be taken, that the Water flow not out too fast; therefore here must be prescribed an *Apozem*, prepared of *Guaiacum*, *Sarsaparilla*, and other things.

Some affirm, that if the *Moon* shine upon a wound (whatsoever it be) that wound cannot be healed without difficulty; but whether this be true or no, I know not. It is certain, that the cold Air hurts wounds; but whether that be more injurious when the Moon shines than at any other time, is indeed what I have not as yet experienced.

Mr. *Blankard*, in his *Medico-Physical Collections*, saith, that *Spirit of Wine* mixt with *Spirit of Sal-Armoniac*, doth very much profit in Wounds; and so saying doth not a little confirm my Opinion, whereby I judge Acidity hurtful in every wound, and that our principal care ought to be employed in correcting that.

OBSER-

OBSERVAT. IV.

Of an Artery of the Arm wounded.

A Souldier Forty years of age, was wounded with the point of a Sword, in his Arm below the Cubit; from which wound the Bloud issued with great force, and indeed with intermediate stops, as if forced out of a Syringe by intervals.

That Artery was wounded which is touched when we feel the Pulse of the sick.

We have known Bleeding at the Nose to kill some; and have read, that the hasty flowing out of Bloud, after Extraction of a Tooth, hath killed others. If the opening of such very small Arteries can infer Death, into how great danger of life shall the Aperture of so great an Artery, precipitate the miserably-wounded party?

Therefore, because so great danger is sited in delay, I judged the Cure was to be presently set about, and accordingly (so soon as I came) I applied two Lints pleated together cross-wise a little above the wound,

wound, over them putting a sufficiently strict Ligature.

Then, to the wound, with Lint I applied the following Medicament mixt with the White of an Egg.

Rx, Root of Tormentil, ℥ij.

Acorn-Cups, Galls, of each ʒj. ss.

Mastich, ʒ ss.

Bole armenac, Terra sigil, of each ʒiʒ.

Mix and make a Powder.

In the mean while the Patient often took two Spoonfuls of the following Mixture.

Rx. Water of Plantane, ℥ij.

Of Roses, ʒj.

Sugar perlate, ʒiij.

Sanguis, or Sanguinis Draconis, ℥ss.

Terra Sigillata, ʒij.

Salt prunell. Gr. 25.

Laudanum Opiat. Gr. 3.

Make a Mixture.

The Bloud thus stopping we did not unbind the Wound before the third day; and then, from the Wound issued out a little Pus, but no Bloud. Thus was this wound (so very full of danger) with the help of a good Digestive, very well consolidated, after the manner of other wounds, in two Months space.

This Wound was very dangerous, but
would

would have been much more perilous, if it had been inflicted above the Cubit; because there is found one onely great Artery, which (below the Cubit) is divided into two sufficiently large Branches; so that one of them being closed by Art, the Blood may freely pass through the other.

It sometimes happens, that the Blood from an Artery wounded below the Cubit, running out with great force, cannot be stopped in the above-prescribed manner; therefore at such a time certain Iron-Instruments must be used, which I have always by me, though I cannot in words well give a plain Description of them. I remember two that were by this means cured by my Father.

So also, I have by me an Iron-Instrument, by the help of which my Patron (Consul and Ordinary Physician of *Stenovicum*) as he told me, had happily stopped the Blood flowing out from the Artery *Carotides*, in the Neck of a Fox wounded.

Therefore, forasimuch as wounds of the Arteries are so very dangerous (as we see) I thought good in this place to subjoyn a double caution. The first is, that we do not, after the manner of the *Ancients*, in dolour of the Head and other affects, attempt to use *Arteriotomy* about the Temples, Forehead, or elsewhere. For greater bene-

benefit from the opening of an Artery, than from the simple cutting of a Vein, is not to be expected. *Secondly*, Least judging an *Aneurisma* to be a vulgar *Abscess*, we unawares cut the dilated Artery. For by this means I have certainly known some to have augmented the number of the Dead.

Moreover Ligatures must not be tyed too close ; for by this means I remember a mortal *Sphacelus* hath unexpectedly been introduced.

But if the Patient from the wound of an Artery, lose so much Bloud, as he suffers great Swoonings, and Death seems to stand at the door, what is then to be done? Cannot the Transfusion of Bloud (so much praised) in this case profit, especially seeing it is declared by credible men, that a Dog, from whom in one day so much Bloud was taken, that he could scarcely move, by Calves-Bloud received the next day, in a moment of time shewed recovery of strength, and incredible vigour? I answer, I cannot remember this Operation to have been at any time instituted by our Country-men; therefore warily suspended my judgement about this matter.

OBSER-

OBSERVAT. V.

Of a Fracture of the Tibia with a Wound.

A Virgin Twenty years of age, by the sudden and unexpected discharge of a Gun (I know not by what misfortune happening) charged with Small-shot, received a wound on the inside of her Leg a little below the Knee. Which wound presented it self (in length and breadth) very large ; yea so large , that it exceeded an hands breadth. There was also present a very great Contrition and Commination of the Bone of the *Tibia* broken into very small pieces, which extended it self the whole length of the Wound, and thickness of the Bone of the *Tibia*. Whence the sick Maid was afflicted with most cruel dolour, which caused her to pass many Nights without sleep ; or if she at any time slept for a very little while, she would suddenly awake , not without very great terrour, attended with a Convulsion (as it were) of her wounded Leg ; by which means the broken Bones were often distorted.

The

The broken Bones were repositied without great Extension, and the Fragments which were wholly separated loose and at liberty, were presently taken out without much trouble; the remaining Fragments, yet somewhat adhering, were left, till (in process of time) they should be separated.

Then was applied a digestive prepared of *Turpentine*, the Yolk of an Egg, Powder of the Roots of *Flower de Luce*, and *Birchwort*, with *Myrrh* and other things, together with a Plaister and Lavament temperating Acidity. After these was used a common Ligature, and at length the affected Leg, included in a case of Wood, was aptly placed in the Bed; over which hung a Rope, by which the Patient might raise her body when necessity was; and at her Feet was erected a Semi-circle of Wood, lest the weight of the Bed-clothes should create any trouble to the wounded Leg.

The cutting of a Vein, which very many are wont to commend in such a case, was wholly omitted; because no benefit can thence arise; nor were Purgers here (according to the vulgar method) revoked into use, because in this Evil nothing is more desirable than Rest, and nothing more pernicious than Motion. Therefore whensoever the Patient was necessitated to discharge her Belly, a four-doubled
Cloath

Cloath was laid under her to receive the Excrements.

In the mean while the Patient eat Foods easie of digestion, drank new Beer, and the first Evenings after she was wounded, assumed a certain gentle *Anodine*, for mitigating the dolour, and removing that terror of which I spake.

The Bones were repositied as often as they were found distorted by that Nocturnal terror.

The Wound by reason of great abundance of *Pus*, was dressed twice a day; and so in process of time very many Fragments were separated. And then we could daily see the Generation and Accretion of a *Callus*, arising not from the Marrow, but from the very small Pores (or passages) of the Bone, through which are conveyed the nourishing Humors, coming from the small Arteries.

This Wound, so very perilous, was closed up in a Months space, and the Patient could again as well stand and walk as she had done before this wound was inflicted.

I remember another Woman, afflicted with the same Evil, to have been cured by my Father. But these two Examples should not render any Artist so secure, as slightly to regard a *Fracture* with a Wound: For I have known that to have caused death in many. So, when in the *Hospital* at Rotterdam,

dam, I was present with others, daily for almost whole days, dressing very many wounded Men, which came from the Siege of the City of *Graaf*, I remember all they that laboured with a Fracture and Wound of the *Tibia* died; and among others, one was afflicted with a Fracture and wound of the *Tibia*, in whose wound I beheld (not without Admiration) very many broad, thick, and white shining Worms. But whence had these Worms their Original? I answer, From Eggs fallen from the Air into the wound, out of which the Worms were excluded, when a certain Fermentation was excited in the stagnizing Humors. So not a few Eggs fall from the Air into Milk, of which Cheese is afterward made. As long as that Cheese is new, these Eggs are not excluded; but when the Cheese putrifies; that is, when (in process of time) a certain Fermentation is produced in the Cheese, then do the Worms crawl out of the Eggs.

So in a very great contrition of a Bone, the Fracture with the wound attending, I remember to have been cured no otherwise than by cutting off the Leg a little below the Knee.

In a Fracture of the *Tibia* with a wound, some are wont to use the Ligature of eighteen Heads, which is in Dutch called *een boerwisse Ligatuur*; but we have happily
Q used

used the common, which we changed twice a day by reason of the great quantity of out-flowing Pus.

I knew a Chyrurgeon, who instead of the wooden Case of which I spake, used a certain Iron-Instrument, into which the Leg affected was put, and so kept extended and unmovable but I cannot here in words give a description of that Instrument.

In a simple Fracture of the *Tibia*, Ferula's made of *Pastboard* are generally applied; but in our Patient these were wholly omitted, because in a wound so vast they seemed not convenient.

With our Digestive, which was put upon the Wound, by reason of the bared Bone no Fatness was admixed. For that Fatness hurts the Bones, Experience doth abundantly testifie; the reason of which we have before given.

Parey in the *Chyrurgick Practice* was very deserving, and had much Experience; yet in a Fracture with a Wound, he improperly commends Astringents, which, why, and how much they hurt, we have often shewed. I suppose no man will take it in evil part that I should dare to reprehend so great a Man; seeing the more famous any man is, the more dangerous are his Errors; because very many, moved by the onely Authority of so great a Man, with a certain blind force follow him, treading a
Path

Path that hath been trod, but not that which should be trod.

It is to be observed, that a *Callus* is most difficultly produced in Fractures of women with Child, or giving Suck; because the matter fit is withdrawn by the young in the Womb, or by the Infant sucking. So *Fabritius Hildanus* relates (in the 87th *Observation* of his *Fifth Century*) that for this cause, in a Fracture of the *Tibia* with a wound, the Bones were yet loose the 23d week after the hurt received.

In a Fracture, as well Simple as Compound, when a *Callus* hath again conjoyned the broken Bone, the Patients are commonly sensible of some trouble in motion; which happens because the newly-generated *Callus* occupies the place of some Muscles moving this or that part.

Before I put an end to this *Observation*, two very intricate *Problems* seem very fit to be here unfolded by me. The one is, why Bones in clear Frosty-weather are more easily and sooner broken than at any other time? The other, whence proceeds the Terror that generally invades the Sick (afflicted with a Simple or Compounded Fracture) presently after a short sleep.

To the *First*, Some perhaps will answer, the slipperiness of the Ice is the cause that men often fall to the Earth, and so the

Bones may happen to be easily broken. But this doth not untie the Knot; this removes not the Difficulty: For not onely Bones, but also Iron, Wood, and other hard Bodies, are more easily broken in the Winter - season than at any other time. Whence then doth this happen? Attend a while and I will tell you. The more pertinaciously and firmly the parts of hard Bodies are conjoyned each with other, the more difficultly they are broken. This is certain: But what is that which effects coherency in the parts of hard Bodies? Not Rest, as some think, because that is not any thing positive in the Body, but onely a privation of motion. Therefore Rest produceth not this Effect; but the Air compressing the parts of hard Bodies, conjoyns and causeth them to cohere, as is evident by the Experiment cited in the Seventh *Observation* of the Third *Decade*. The Air whilst Summer's Heat is most vehement, presseth more than in Mid-winter; partly because at that time it is more forcibly agitated by the heat of the Sun; partly because then it is more heavy, by reason it is mixt with very many gross Vapours, forced upwards by the Solar heat. Hence it is now manifest, why Bones, and other hard Bodies, are more easily broken in Winter than in Summer. Hence also it may readily be understood, why Wood is
much

much sooner consumed by burning in the extream cold Winter-season, than whilst we enjoy the pleasant Summer. The Winter-Air, by its more weak pressure, cannot very pertinaciously conjoyn the Particles of the Wood; whence these Particles are easily separated from the Wood, when they suffer violence by certain terrestrial Particles, floating upon the onely most subtile matter of the World, therefore most swiftly agitated. Hence it is, that the Winter-Air, as being less pressing and containing fewer Vapours, permits the Flame freely to enlarge it self.

We now come to the other *Problem*, by which it is asked, Whence ariseth *Terrour*, invading the sick, suffering a Fracture of the Bone (in sleep and not while waking) and often again distorting the broken Bones?

Parey, a man endowed with great Experience in the *Chyrurgic Art*, who himself once suffered a Fracture of the *Tibia* and *Fibula* with a Wound, and in his own Body plainly enough experienced this *Terrour*, as he saith; a reason of which he endeavours to render (in the 26th Chapter of his Book of Fractures) but he there miserably philosophizeth, producing nothing but Impertinencies and Chimæras.

Therefore, let us see whether we can

give a more probable Reason that may come nearer to the truth: We will at least attempt it. When the Sick are not sleeping, they see, they hear, they eat, they drink, and stir their Arms, and (by this means) consume much of the Nervous Juice; so that that cannot flow in so great abundance into the parts irritated, &c. but when the Sick indulge their Members with sleep, the matter is far otherwise. The Ears at that time hear not, the Eyes are closed, the Nofethrils perform not their wonted Office, the Tongue is silent, and the Arms rest. Therefore, when (at such a time) the Humors stagnizing and waxing acid about the Fracture, with their distention molest the Fibrils, and by their cutting property irritate them; then, I say, the Nervous Juice (which, in the time of the Patients waking, is not employed) in great abundance falls down upon the irritated Muscles, which (by this means swollen) vehemently move the Leg, and miserably distort the Extremities of the broken Bone, one to this part, the other to another; whence ariseth pain cruel enough, by which the Patient after a short sleep is awakened with terrour.

But that you may more readily give credit to the reason of this *Phænomenon*, I judge it fit to advise you to attend to these few Words following.

When

When you are awake, and not sleepy, and when your *Semenary Vessels* contain much fruitful Seed, imagine to your self (as strongly as you can) some beautiful Maid, yet (as I judge) you shall not by this means eject your Seed, unless you use some other excitation: But if whilst in a sound and pleasant sleep, a very beautiful young Woman be (by imagination) presented to your Phantasie, and if (in the mean while) your *Semenary Vessels* be sufficiently distended with the Seed, the Seed not seldom (by such means) flows out with very great pleasure, viz. because the *Semenary Vessels* are very much contracted by the Nervous Juice, which in great abundance (whilst you sleep) is carried from the Brain into the *Semenary Vessels* distended and very much irritated by the Seed; because it is not now imployed about other works to be done whilst waking.

So I knew two *Epileptick Persons*, who never had Fit whilst awake, but always when they soundly slept: which doth not a little confirm my Opinion.

Q 4 OBSER.

OBSERVAT. VI.

Of Dislocation of the Talus, or Ankle-bone, with a Wound.

A Man aged Forty years, fell from on high to the Ground, and suffered a Dislocation (in the interior Ankle-bone of his Left-leg) conjoyned with a vast Wound, out of which the Bone was prominent the breadth of three fingers, and the doleur was almost intolerable.

This case is very perilous: For, not without great danger of life, a Gangrene sometimes invades the great Toe, infected by the Dislocation and Wound concomitant, as I remember not long since to have happened. But such horrid Symptomes are not to be feared, if in the great Article of the *Talus* a Dislocation also be with a very large Wound.

This Affect is not onely perilous, but also rare; so that *Parey*, *Pigreus*, *Aquapendens*, *Barbette*, and others scarcely so much as mention the same in their Books, although *Sculdetus* (in his *Chyrurgic Armory*) speaks of it: but whether credit is to be given

ven to his Words, or his Counsel followed, we shall see, after we have pondered the following Words written by himself.

If an *Article* be luxuriant, so as it is either uncovered, or be a little thrust out through the Skin; the Affect is mortal, of greater danger if restored, than if not restored. For if it be not restored, an Inflammation, Convulsion, or sometimes Death follows. *Secondly*, Foulness of that Member will be present. And *Thirdly*, an incurable Ulcer, which if it happen to be covered with a *Cicatrice*, that (by reason of softness) is easily broken. If it be restored, it infers very great danger of a *Convulsion*, *Gangrene*, and *Death*. But some fear dangers of this kind onely in the great *Articles*, viz. in the *Wrist*, *Shoulder*, *Talus* and *Thigh*, which (by reason of the strength of the *Tendons*, and magnitude of the *Ligaments* and *Vessels*) prohibit Restitution. Then he adds: If a *Convulsion* follows, the *Joynt* must be presently again Dislocated.

My purpose is no otherwise to answer these words of *Sculdetus*, than by an exact and faithful Declaration of the Medicines we applied to this our Patient; seeing thereby it will be sufficiently manifest, how well or how ill the above-named Author hath written.

First,

First, We washed the Bone of the *Tibia* (forced out of its seat) with *Spirit of Wine* warm, for removing the coagulated Blood and Filths adhering ; then sufficient Extension being made , we set the dislocated Bone in its place, applying to the Wound a good Digestive, with a fit Plaister superposed ; not omitting a Lavament temperating Acidity, and a Common Ligature. The Leg thus bound up, was laid upon a soft Cushion, and so the Patient was carried to his Bed, over which hung a Rope, by the help of which he could raise his Body, as I said in the precedent Operation ; and at the Feet of this Sick-man we set up a Board , that the Clothes (with their Weight) might infer no detriment to the wounded Leg.

The Leg affected , by reason of the abundance of *Pus* (flowing out of the Wound) was dressed twice a day. But in the mean while most vehement dolour exercised its Tyranny on our sick Patient ; who was both feverish, and had a *Delirium*, passing whole nights (almost) without sleep ; or if he was between whiles, somewhat refreshed with sleep, a little after that was excited the aforesaid Terrour (of which we spake in the precedent *Observation*) whence the *Talus* was often in some measure distorted again.

To remove the *Dolour* , *Fever*, *Watchings* ;
and

and *Delirium*, the Patient at times assumed some of the following Mixture.

Rx. *Water of Betony*, ℥iv.

Of *Bawm*, ℥j.

Syrup of Card. Bened. ℥iij.

Antimony Diaphoretic, ℥j.

Salt prunella antimoniate, ʒ ss.

White Corals, Crabs-Eyes, of each ʒj.

Laudanum Opiat. Gr. 4.

Make a Mixture.

But the *Talus*, as often as it was found distorted after sleep, was repositied.

By this means, the space of three Weeks being scarcely elapsed, the *Fever* and *Delirium* ceased; then also, but more slowly, the aforesaid *Terrour* vanished, and at length the *Dolour* and *Watchings* likewise.

But here I call to mind one thing, which I had almost forgot, viz. that two *Abscesses* arose in the affected Leg, one nigh the Wound, the other in the External part of the Leg; but both these *Abscesses* after Apertion were healed.

In process of time very many Fragments were separated from the Bone of the *Tibia*, which we then gently and easily took out of the Wound; and upon the fungous flesh, which was seen in the Wound, we strewed (almost every day once) the Powder of
Burnt

Burnt Allum ; and so at length a *Cicatrice* came in sight, which from day to day increased more and more ; so that (about the sixth Month) the whole Wound was almost covered. Wherefore the Patient began to walk with Crutches ; but by this motion the Wound was again enlarged, so that it closed not in every part, which should seem strange to no man. For I at this day know two, who after Dislocation of the *Talus* with a Wound, had an Ulcer several years.

But what if (after setting the Dislocated *Talus*) the Patient had been afflicted with a Convulsion, must we needs have followed the counsel of *Sculetus*, and again have dislocated the Article so lately set in its place? I think not, seeing I see no cause that should incite us to such an Action.

In this place I render not a Reason of many *Phænomenons*, and indeed considerably, least I should set before the Readers a Dish of *Crambe* twice cookt. For I think I have here omitted no reason of any *Phænomenon*, which may not be found in one or other of the foregoing *Observations*.

OBSERVAT. VII.

Of a Nose hurt by Winters-Cold.

A Young Maiden, Sixteen years of age, in Mid-Winter, in extream cold Weather, complained of a Tumor, Redness and Dolour in the Tip of her Nose; and she had been often before afflicted with this Evil in the Winter-Seasons.

The coldness of the Air, both within and without affecting the Nose, the Bloud (in its very small Vessels) and the Humors (in their small passages) were in some measure stagnized; and in process of time contracted a certain *Acor*, whence the Tumor, Redness and Dolour, were easily excited.

But whence was it that this Evil had now several times returned in the Winter? This Return proceeded from no other cause, than because the small Vessels and Passages were, the first time, so distorted, by the Bloud and Humors stagnizing and waxing acid, that afterwards they could never so well return to their pristine state,
but

but they would (in Winter-time) much impede the Circulation of the Bloud and Humors.

This Affect (in *Dutch* called *de Koud*) is without danger, as to life; yet in the mean while it is not a little displeasing to young Maids, accounting their own Form (whatsoever it is) as their chiefest good, and therefore are often willing rather to lose their Life than their Beauty.

This Evil I wholly removed (in a few days) with a Linnen-Cloath onely, anointed with *Sperma Ceti*.

I shall not now dispute what that is which is known by the Name of *Sperma Ceti*; whether it be the Seed of that great Fish, or a certain Substance which is found (in the form of thick Oyl) in certain small Cells in the Head of the Whale (about the largeness of *Goose-Eggs*;) or lastly, whether it be a certain artificial Composition of the Brain of some Fish dried, made up with a *Lixivium* of *Lime*. In this place I say, I will not dispute of this matter; it sufficeth me, that much Oily Volatile Salt is contained in the aforesaid Medicament, which corrects the Acidity in the bloud and stagnizing Humors.

This Evil is wont to invade not only the Tip of the Nose, but also the Fingers, Toes, and Soles of the Feet. To attempt to render a Reason of this would be superfluous,

perfluous, seeing it is manifest, that the cold Air doth more affect the Extremities of the Body, than other parts; and small Vessels are sooner obstructed, than others more capacious.

To prevent this Evil Cupping-glasses (with Scarification) are wont to be applied, but improperly; because the Obstructions are not by this means removed, but multiplied; and the distorted Vessels are not reverted to their pristine state, but more distorted. Much better would be the Vapour ascending from *Spirit of Wine* set on fire; or a Fermentation made of Wine and Herbs abounding with Volatile Salt.

To prevent this Evil, when it is wont to infest the Tip of the Nose, some apply Leeches, but evily; for I have known this Affect to be by them not a little exasperated; the reason of which Exasperation I should here add, were it not sufficiently manifest by the foregoing Paragraph.

This Affect is wont leisurely to increase, but sometimes it meets with another Evil, suddenly proceeding from intense Cold; and is called a *Gangrene of Cold*, which (beginning) is wont to be cured by Immersion into cold Water. But is this a rational way of Cure? Yes, and consentaneous both to Reason and Experience. Cast a frozen Apple into cold Water, and you shall

shall see that (in a short space of time) to be thawed within, all the Ice adhering to the external Skin of the Apple, without loss of its pristine taste, or former consistency ; but set the same frozen Apple near a Fire, and it will presently wither and lose the sweetness of its taste.

Very many Particles, contained in the Pores and small Passages of the congealed Apple, which before were fluid, have now (by reason of the Frost) put on the form of Ice ; that is, many Particles, which before, by the subtile matter sufficiently strong, were in their motions (each from other diverse) continually agitated, do now rest each with other, because they are surrounded with a subtile matter, which is too weak to conserve them in their usual motion. When such a congealed Apple is cast into cold Water, the more strong part of the subtile matter, from the Water, flies into the Apple, and so thaws the same. But the more weak part of the subtile matter rusheth out of the Apple into the Water, most nearly touching the External Rind (or Skin) which is therefore covered over with Ice.

But when such a frozen Apple is set to the Fire, the most subtile matter of the World, very strong, and attended with many gross particles of the burning Wood or Turf, endeavours (with great violence)
to

to enter the Pores of the congealed Apple, but cannot, because the Pores are very much constringed with Cold; therefore it breaks them by force, and so the consistency and good taste of the Apple is changed and wholly spoiled.

Hence it is now sufficiently manifest, that this Cure of a *Gangrene* from Cold is rational; though in the mean while it may perhaps seem fit to some to vary one Circumstance, and that is as here following expressed. A congealed or frozen Apple is cast into cold Water, and indeed well; because the Liquor in a well-constituted Apple is found cold as to the touch; but our Blood and Humors well constituted, are not cold to the touch, but warm; therefore a Member lightly affected with a *Gangrene* from cold, should rather be put into luke-warm-Water (by the *Dutch* called *bloet-laeww*) than into cold.

OBSERVAT. VIII.

Of an Atrophia, Imbecillity of Motion, and an Algor of the Arm.

A Young man 24 years of age (as to all other things very well) had now
 * R for

for six Months laboured with an *Atrophia* of his Left-arm, from the Shoulder to the Cubit, and he could not lift up or otherwise move his Arm, but continually complained of an Algor (or extream coldness) thereof. Some Chyrurgeons had long attempted to cure this *Affect*, according to their vulgar method; and applied their Plaisters, Unguents, Linements, and other such Medicaments, but in vain.

The very viscous Humor in the Arm of this Sick man, had produced not a few very pertinacious Obstructions, whence the *Atrophia* of the Arm, its Impotency to motion, and Algor of the same readily took beginning.

But this gross Humor lay so very deep, that it could indeed be in no wise dissolved by Unguents or other such-like Remedies.

Had the cure of this Evil been longer procrastinated, there would have been great cause of fear, that the Ligaments, connecting the Shoulder-bone with the *Scapula*, would in a short space of time have been so much extended in length, that thence would have followed such a Dislocation of the Shoulder (most difficult to heal) as we described in the Last *Observation* of the First *Decade*.

Therefore without any delay I set about the Work, and ordered seven or eight Cupping-glasses

Cupping-glasses with Flame (but without any
 purification) to be applied twice or thrice
 every Week; and left on till the Skin waxed
 hard; at which time the affected part was
 washed (before a Fire) with the following
 liquor first made hot; and every other
 day when the *Cupping-glasses* were not ap-
 plied the same was also twice used.

Rx. *Root of Sarsaparilla*, ℥j.

Bark of Lign. Guaicum, ℥ss.

Herb Rosemary

Sage, of each M. j. ℥.

Flowers of Lavender, M. ℥.

Bay-berries, ℥j.

Salt of Tartar, ʒj. ℥.

Of Armoniac, ℥ij.

Boyl these in a double Vessel, with two
 pounds and an half of *Spirit of Wine*; and
 strain the Liquor from the Simples.

We also took care sometimes to burn
 common *Spirit of Wine*, so that the Vapour
 thereof ascending might surround the af-
 fected part (covered above) and by this
 means the Algor vanished in 14 days, and
 the Patient (in six Months time) could as
 well move and use his Left-arm, as his Right,
 and in the mean while the affected Arm be-
 came daily more and more fleshy.

Which way the *Cupping-glasses* and afore-
 said Medicaments effected the cure of this
 our Patient, I here pass over in silence, and

that indeed considerably ; because the same
is sufficiently manifest in the Ninth Obser-
vation of the Fourth Decade.

OBSERVAT. IX.

*Of the Uvula and Tonsils evil
disposed.*

A Young man, aged 30 years, walking
in a very cold season, was afflicted
with dolour, redness, and tumor of the *Ton-*
sils and *Uvula* ; whence he perceived diffi-
culty in Swallowing, though he was (in the
mean while) almost continually forced to
swallow.

The Blood in its small Vessels, and the
Humors in the minute passages of the *Ton-*
sils and *Uvula*, stagnized (by reason of the
cold Air admitted by Inspiration) were
coacervated and waxed acid ; whence
rose the aforesaid tumor, dolour, redness
and difficulty of swallowing.

But whence did that so great Impulse
swallowing derive its Original ? I answer
The Membrane, subject to the *Uvula*, has
Nerves, which touched by the relaxed and
incumbent *Uvula*, are the cause that the
Nervous

Nervous Juice is (in greater abundance) carried into the Muscles adapted for swallowing.

Being called to the sick, I prescribed the following *Gargarism*.

Rx. *Spirit of Wine*, ℥iij.

Water of Elder-flowers, ℥ij.

Spirit of Sal. Armoniac, drops 20.

Mix these according to Art.

By this means our Patient was cured in a very short time.

The prescribed *Gargarism* proved very profitable, because it tempered the Acidity, dissolved the coagulated Humors, and removed the Obstructions.

I have in my self often restored the *Uvula* relaxed, by reason of viscous and coagulated Humors there stagnizing, when I gently touched the same with the tip of my Finger moistned onely with *Spirit of Sal Armoniac*: the reason of which Cure being more clear than the Sun at Noon, I shall not here add.

I remember most desperate *Quinseys* to have been often cured with a Decoction made with a fit Liquor, and Herbs containing much Volatile Salt; when the Vapour of the same, (boiling hot) the upper-part of the Head being well covered, ascended into the Cavity of the Mouth, and outwardly surrounded the whole Face and Neck.

In

In a *Quinsey* very desperate, what shall we judge of *Laryngotomy*? *Antonius de Heyde* saith, the same may be exercised without peril, and that he himself happily instituted it in a Dog, which (without any troublesome Symptoms) was in a few days restored to his pristine sanity. And besides this, Mr. *Blankard* (in his *Medico-physical Collections*) relates, that Mr. *Smalsius* (a famous Chyrurgeon at *Lugdunum*) did, in a Patient, exercise this *Laryngotomy* with good success.

OBSERVAT. X.

Of an Hair Lip.

A Female-Infant 14 days old, had from her Nativity laboured with an Hair-Lip (that is, with an open cleft of the Upper-Lip) miserably disfiguring the Face of the Child, otherwise comely enough.

My Father being called, freed the Lip from the adjacent parts, that the Extremities might the better and more easily approach each to other. Then he sufficiently excoriated both the Extremities of the Cloven-Lip, united them, and kept them united with three silver Needles, about which Threds were wreathed, to keep them steady

dy in their places. In the mean while the ends of the Needles were cut off with a fit Instrument, lest they should be infixed in the Bed-clothes, or other things, and so (taring in sunder both Flesh and Skin) fall or be forced out; as I remember to have happened more than once.

On the eighth day the Needles were drawn out, and both Extremities of the Hair-Lip grew together and were united; the Bloud and Humors performing their Circular Motion from one Extremity to the other. But the Holes made by the Needles did as yet pour forth a little Pus; undoubtedly for no other reason, than because the Needles had remained too long infixed in the Lips. Wherefore my Father, when he afterward cured the like Affect in others, sooner took out the Needles; and because *Silver Needles* are no less liable to rust, than those made of *Steel*, I therefore instead of *Silver Needles* used *Steel Needles*, because they more easily perforate the Skin and Flesh.

The most famous *Sylvius* would have an Hair-Lip cured without Needles, by the help of Plaisters only; and I remember that a certain Chyrurgeon cured some young Patients by these means.

This Operation is usually exercised in Infants 14 days old: for if they be younger, they have flesh so very soft, that it will (by the

the least irritation) be torn in sunder by the Needles inherent; and in more maturity of age the Extremities of the Hair-Lip will not so easily conglutinate.

But whence is it that Infants are sometimes born deformed with an Hair-Lip? Some ascribe this wonderful Effect to the Imagination of the Mother; but others again stily deny this to be able to effect any thing.

In an Hens-Egg, before Incubation, some affirm that the Chick may (by a *Microscope*) be seen compleatly formed: After the same manner in an Humane Egg (of which they say we are generated) the little Body of the Infant compleatly formed is contained; whether the same be intire, or affected with an Hair-Lip. But the matter is not thus sufficiently elucidated, there must some reason be added, why in one humane Egg, rather than in an other, is generated a small Body affected with an Hair-Lip. Yet throughly to search out these things, is little or nothing conducent to the practice of Chyrurgy; therefore here we forbear to speak further thereabout.

F I N I S.

the
very
-Lip
none-
Lip?
the
its a
any
none.
cope/
fame
they
y of
ed;
shed
thus
some
Egg,
small Yet
little
ze of
r to

