

Practical surgery illustrated and improved: being chirurgical observations with remarks, upon the most extraordinary cases, cures, and dissections, made at St. Thomas's Hospital, Southwark / [William Beckett].

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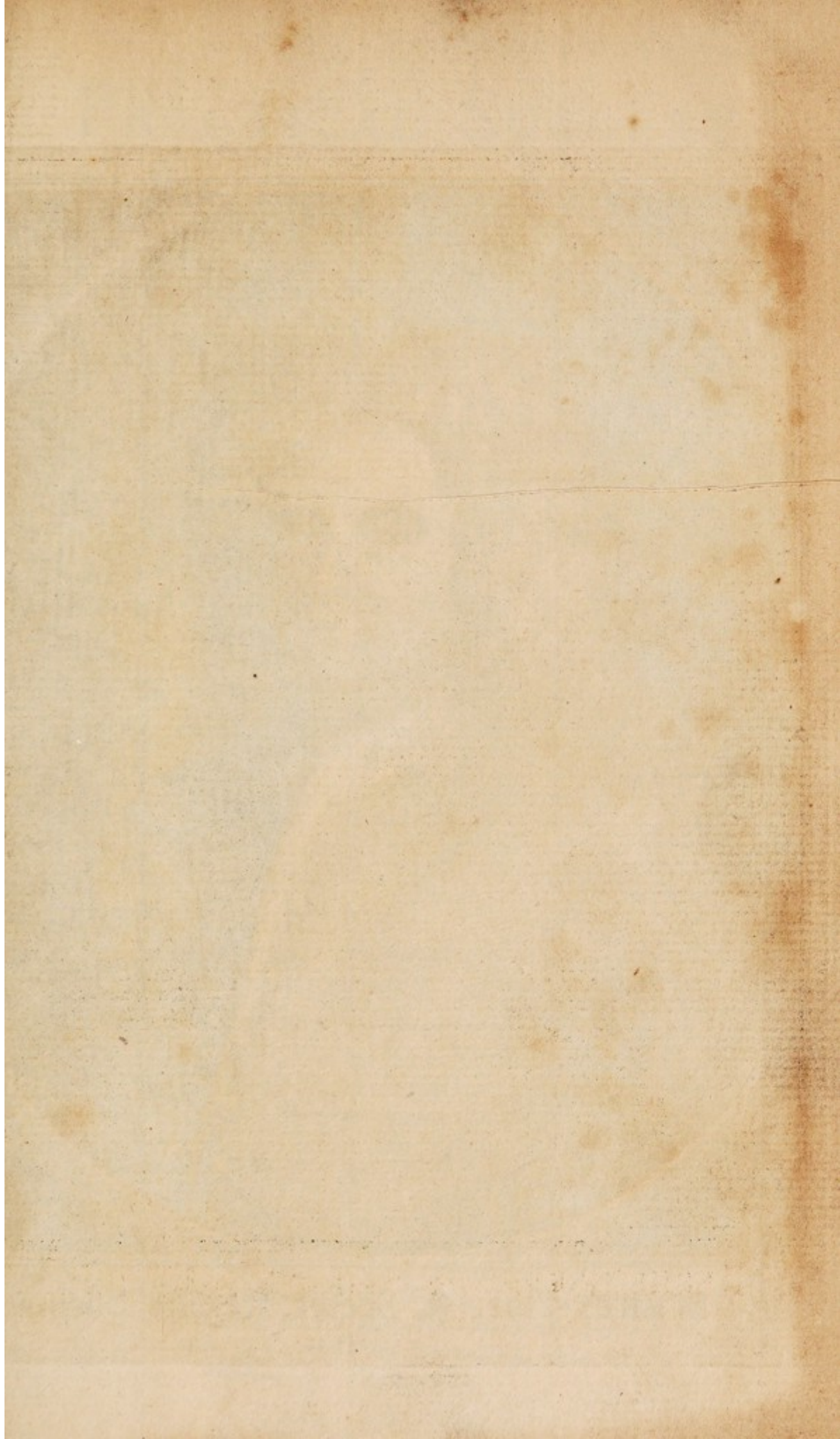
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PRACTICAL SURGERY

ILLUSTRATED and IMPROVED:

BEING

CHIRURGICAL OBSERVATIONS,

WITH

REMARKS,

UPON THE

Most extraordinary CASES, CURES,
and DISSECTIONS,

MADE AT

St. Thomas's Hospital, Southwark.

By WILLIAM BECKETT, Surgeon, F. R. S.

*CHIRURGIA est Pars Medicinæ; Manuum Opera externa;
mederi docet Affectibus Corporis humani externis.*

L O N D O N:

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PRACTICAL SURGERY

ILLUSTRATED BY

CHRISTOPHER BRYANTON

NEW YORK

R. E. M. A. R. K. S.

THE

NEW YORK

AND

NEW YORK

NEW YORK



BY WILLIAM BRYANTON

CHIRURGIUM OF THE HOSPITAL FOR SURGERY

LONDON

NEW YORK

NEW YORK

NEW YORK

To the MUCH-HONOURED

Sir HANS SLOANE, Bart. M. D.

The very worthy PRESIDENT

OF THE

ROYAL SOCIETY,

AND TO THAT

ILLUSTRIOUS BODY

(Of which, for some Time past, I have been
a Most Unworthy MEMBER,)

THESE

OBSERVATIONS

ARE ADDRESSED,

And submitted to their CANDOUR,

BY

Their Devoted Servant,

WILLIAM BECKETT.

Sir Hans Sloane Bart M.D.

The very worthy President

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And Read at the Council

of the Society

WILLIAM BROWNE

T H E

CONTENTS.

Observation I.	
O <i>F a Fractured Skull</i>	Page 1
Observation II.	
<i>Of a Distortion of two of the Vertebrae of the Back</i>	9
Observation III.	
<i>Of a Fractured Arm, which never re-united</i>	16
Observation IV.	
<i>Of an Atrophy of the Thigh, Leg, and Foot</i>	21
Observation V.	
<i>Of a Fractured Thigh</i>	26
Observation VI.	
<i>Of a Tumour on the Knee</i>	32
Observation VII.	
<i>Of a Leg amputated</i>	40
Observation VIII.	
<i>Of an Aneurism on the Back of the Hand</i>	63
Observation IX.	
<i>Of a Collection of Matter in the right Cheek, which eroded the salival Duct</i>	71
Observation X.	
<i>Of a Defect in Swallowing, which attended a Distention of the Fore Part of the Neck</i>	81
Obser-	

C O N T E N T S.

Observation XI.	
<i>Of a Ganglion on the Back of the Hand</i>	85
Observation XII.	
<i>Of a Gangrene of the Foot and Leg</i>	89
Observation XIII.	
<i>Of a Tumour which succeeded the Use of the Cold Bath</i>	99
Observation XIV.	
<i>Of a remarkable Defect in a Man's right Thumb</i>	105
Observation XV.	
<i>Of a sphacelated Face after the Measles</i>	110
Observation XVI.	
<i>Of a Tumour in the Throat</i>	116
Observation XVII.	
<i>Of a Wound of the Head</i>	121
Observation XVIII.	
<i>Of a Deprivation of Hearing by a Polypus</i>	127
Observation XIX.	
<i>Of a violent Contusion of the Fore Part of the Knee</i>	132
Observation XX.	
<i>Of a Boy cut for the Stone</i>	140
Observation XXI.	
<i>The Suffocation of a Woman by a Tumour in her Throat</i>	150
Observation XXII.	
<i>A very uncommon Venereal Case</i>	156
Obfer-	

C O N T E N T S.

Observation XXIII.	
<i>A cancerated Breast extirpated</i>	160
Observation XXIV.	
<i>Of a luxated Shoulder reduced by a newly improved Machine</i>	170
Observation XXV.	
<i>Of a Child over-heated by Play</i>	177
Observation XXVI.	
<i>Of a prodigious Piece of the Skull extracted, after which the Patient recovered</i>	184
Observation XXVII.	
<i>Of a Leg amputated, in which the Arteries were perfectly petrified</i>	190
Observation XXVIII.	
<i>Of a Leg reduced after a second Fracture</i>	196
Observation XXIX.	
<i>Of a large flatuous Tumour above one of the Knees</i>	203
Observation XXX.	
<i>Of an Atrophy of the Leg and Foot</i>	210
Observation XXXI.	
<i>Of an unnatural Venereal Case, which besel a passive Sodomite, the active Person being clapt</i>	216
Observation XXXII.	
<i>Of a very large scirrhus Liver</i>	221
Obser-	

C O N T E N T S.

- Observation XXXIII.
Of a Polypus in the Nose extracted 226
- Observation XXXIV.
Of a Paracentesis performed 230
- Observation XXXV.
Of a Tumour on the right Hypochondrium 240
- Observation XXXVI.
Of a cancerated Arm amputated 246
- Observation XXXVII.
Of a contused Breast 260
- Observation XXXVIII.
Of a Fistula in Ano 266
- Observation XXXIX.
Of an Ulcer on the Leg 273
- Observation XL.
Of a Swelling on the lower Vertebrae of the Back, attended with an Asthma 280
- Observation XLI.
Of a Wound on the right Hypochondrium, received in an Engagement. 289



CHIRURGICAL
OBSERVATIONS
BY
W. BECKETT
F. R. S.



R. Paer Sculp

CHIRURGICAL OBSERVATIONS

MADE AT

St. *THOMAS*'s Hospital.

OBSERVATION I.

Of a Fractured Skull.

A MAN of about 36 Years of Age, received a Blow on his Head with a Hammer, by which he immediately fell to the Ground; this was succeeded by Vomiting, Loss of Sight, *Vertigo*, and *Deliquium*: The Head being shaved and examined, a Crucial Incision was made through the Teguments; which being removed, a Piece of the superior Part of the right *Bregma* was found separated, one Side of it being depressed considerably below the Surface of the *Cranium*; the Asperities of which depressed-Part, seemed

B

seemed to press lightly on the *Dura Mater*. The *Hemorrhage* which attended the Wound was pretty considerable, for which Reason it was thought requisite to dress it with Dressings of dry Lint; which by obliging the Sides of the divided Arteries to be contiguous, infallibly put a Stop to the Effusion of Blood; over which was applied a Plaister, with a Compress, and the Bandage called the great Cap. *V. S.* was at that Time omitted, by Reason the Quantity lost by the Wound, seemed to be as much as the Constitution of the Patient would allow of: However a Clyster was that Night administered. The next Morning the Patient being seated commodiously in his Bed (and a Chafing-Dish of Coals provided to correct the Temperature of the Air) the Dressings were removed, and the Wound cleansed; then a small *Levatory* being introduced under the depressed Side of the fractured Piece, by elevating the
the

the Instrument, it was extracted. A small Quantity of Blood, was lodged on the *Dura Mater*, which was absorbed by an armed Probe; after which a *Sindon* was dipped in a spirituous Tincture, and introduced between the *Cranium* and *Dura Mater*, which by its being so commodiously applied, was capable of preventing the *Dura Mater* from being pricked or torn by any Asperities which might probably remain at the Bottom of the inferior Table. Over this was applied a dry soft Pledget of Lint, with which the divested *Bone* was likewise covered; the Lips of the Wound were dressed with a Digestive, composed of *Terebinth. Venet. cum Vitel. Ovor.* Over which was applied Plaster, Compress, and Bandage, as before. The Patient had a small Fever, which the 3d Day considerably increased; at which Time he was seized with an Inflammation of his Eyes and Eye-lids. That Night the Clysters were repeated, and

Internals given as Occasion required. The Inflammation of his Eyes and Eye-lids continued till the Lips of the Wound were well digested; at which Time the Fever likewise terminated: The 6th Day some small Particles of Flesh began to rise from the *Dura Mater*, in the Form of little Grains, which in a few Days increased very considerably; so that the Surgeon was necessitated to have Recourse to a Tincture of Aloes, which by its spirituous Parts, fortified the relaxed Extremities of the Vessels, corrected the Laxity of the Flesh, and gave it a good Consistence. The Bone was dressed with *Tinct. Euphorb.* which in about 40 Days procured an Exfoliation; after which the Dressing consisted of a Decoction of Vulnerary Plants, with a small Addition of *Mel. Com.* and *S. V.* With this it was incarnated, and afterwards cicatrized with some of the common Epulotics. During the Patient's Indisposition, he was confined to an exact Regimen.

The

The Remifness of some Persons in regulating this important Circumftance, oftentimes, gives original to a Train of mifchievous Accidents. It was fome Time before the *Callus* arrived to a fufficient Degree of Hardnefs to refift external Injuries; for a fmall Comrefs on the Part put the Perfon to violent Pain.

REMARKS.

TO explain the Cause of the Person's Falling to the Ground immediately on the Reception of the Blow, we ought to observe, that the Blow caused a violent Commotion of the whole Brain, and so consequently put the Spirits into a great Confusion and Disorder; which making irregular Incurfions into feveral Parts of the Body, without the Direction of the Will, could not be confined to the Nerves, whose Office it was to distribute them into thofe Mufcles that keep the Body in an erect Pofture; for which Reason the Machine muft unavoidably fall to the Ground. To have an Idea of the Cause of the Vomiting, it may be neceffary we obferve, that when either of thofe Parts, whose Nerves entertain a mutual Commerce, is any Way difordered; if the other is at the fame Time affected, it is faid to fuffer by Consent: Thus in a large Wound of the Head we frequently obferve a Vomiting to enfue, which is commonly ushered in by Anxiety of the Heart, Swimming of the Head, &c. Now, if the Fibres of the Stomach are irritated by any communicated Diforder, Crouds of Spirits are fummoned into the affected Part, upon whose Arrival the Stomach contracts itfelf, and immediately difcharges its Contents. It was the great Sympathy between the Heart, Head, and Stomach, (by Reason of
their

their Complication of Nerves) which induced *Helmont* to believe the Soul had its Seat in the upper Orifice. *Etmuller* endeavours to give us a Reason why the Spirits and the Stomach do so sensibly affect one another, which he supposes to be this: That the Mouth of the Stomach is the first Part of all the Body which receives any sensible Impression in the Womb, for so much as all Alterations in the *Embryo* must be produced by the Nourishment conveyed to the Stomach: This (says he) establishes an early Correspondence betwixt it and the Spirits, and lays the lasting Foundation for their future Intimacy.

To give a rational Account of the Loss of Sight, we need only reflect on the Hurry and Disorder of the Spirits, which flying to and fro in an interrupted Motion, left those Nerves which should have conveyed them to the proper Organs, to have rendered them capable of being influenced by external Objects. The *Vertigo* probably proceeded from the irregular Motion of the Spirits, which wheeling round the Optic Nerve, made such Impressions on the *Retina*, as an external Object, in such Motion, is wont to produce. The Explanation of the Cause of the *Deliquium*, requires us to make some Remarks on the disorderly Motion of the Spirits, which instead of having Recourse to the Heart to rule its Motion, were hurried away sometimes to this Part, sometimes to the other, in an interrupted Course;

by which Means the Heart was deprived of their due Influx, its Fibres were incapable of Contraction; for which Reason the Course of the Blood must necessarily be suspended; the Parts be deprived of those invigorating Particles which were wont to animate them; and the Faculties of the Soul for some Time extinguished. The Inflammation of the Eyes and Eye-lids proceeded from the Inflammation of the *Pericranium*; for the Membranes which invest the internal Parts of the Eye-lids, and form the external Tunicles of the Eyes, are Productions of it. *Malpighius* is of Opinion, that the *Fungusses* which arise in Wounds of the Brain or *Dura Mater*, derive their Original from a Hurt of some of those Glandules of which the Cortical Part of the Brain is composed: Others conceive they are formed out of an oleaginous Substance which abounds in the Brain: However, when these Inconveniencies arise, the Artist endeavours to suppress them by moderate Compressure, or the most gentle Cathartics.

OBSERVATION II.

*Of a Distortion of Two of the
Vertebræ of the Back.*

A YOUNG Man of about
21 Years of Age, endeavouring to lift a heavy Weight from the Ground, distorted two of the *Vertebræ* of his Back towards the Right-side externally, so that their acute Processes formed a small Tumour on the Part. It was observed, that at the same Instant of Time the *Vertebræ* slipped out of their Places, the Person fell prostrate on the Ground; nor was he able, after he had lain a considerable Time, to rise without Assistance. He had been about 6 Months under the Care of a Sea-Surgeon, who had made use of external Applications to no Purpose, and during the first 3 Months, had wholly confined him to his Bed; where, by Reason of his present Disorder, he

was

was obliged to lie constantly in the same Posture, with his Body contracted; by which Means the two *Vertebrae*, which were contiguous to those which were forced from their natural Position, were distorted. Soon after the Expiration of the 6 Months, he was committed to the Care of an experienced Surgeon, who ordered the Patient every other Morning to be suspended by the Neck, by Means of such another Machine as *A. Nuck* describes by the Name of *Torques* in his *Operationes & Experimenta Chirurgica*; in which Tract he gives us its Figure and Use, with its Description. * Before the Patient swung, his Back was constantly anointed with the following Liniment *R. Ung. Dialth. Nervin. ana ℥. ii. Ol. Lumbric. Camom. ana ℥ss. m.* While the Body of the Patient was kept extended by Means of the Swing, a Pair of Bodice was laced pretty-strait-on, to the

* Page 86. Edit. *Lugd. Bat.* 1692. 8vo. See FIG. I. in our PLATE.

back Part of which there were affixed two small Bars of Iron, about half a Foot in Length, which were kept about an Inch afunder, by Means of a Bar at each End: These were quilted and covered with soft Leather; the two long Bars were placed on each Side the acute Proceſſes of the diſtorted *Vertebræ*, and made a conſiderable Compreſſure on the lateral Proceſſes. Theſe Means being every other Day reiterated, in about a Month's Time the Patient reaſſumed his former erect Stature, and the *Vertebræ* were re-inſtated in their proper Places.

From hence we may give a Reaſon why the Liver is more diſpoſed to impoſtumatè on ſuch an Occaſion than any other Part.

REMARKS.

TO have an exact Idea of a Distortion of the *Vertebræ*, which occasions a Gibbosity, it may be necessary we examine their Structure, Articulation, &c. when they are in their natural Position. Now each *Vertebra*, by Anatomists, is distinguished into two Parts, its Body and Processes; the Substance of the former is more soft and spongy than the latter, which is hard and firm; its Body is convex forward, and somewhat concave behind; its upper and lower Sides are plain, each of which is covered with a Cartilage, that is considerably thicker forward than backward; by which Contrivance we bend our Bodies forward with so much less Difficulty than backwards or Side-ways: Each *Vertebra* has 3 Sorts of Processes proceeding from the concave Part of its Body, 2 transverse, 4 oblique, and 1 posterior or acute. The Processes, with the concave Part of the *Vertebræ*, form a Channel to contain the spinal Marrow, which by this Means is defended from any Injuries that might otherwise accrue from the various Motions of the *Vertebræ*. Their Articulation consists in the lodging the Extremities of the oblique ascending Processes of each inferior *Vertebra*, in the hollowed Part of the Extremity of the descending oblique Process of each superior *Vertebra*: Besides this, they are tied together

together by a firm strong Ligament, which reaches from the first *Vertebra* of the Neck to the *Os Sacrum*. This brief Description of the Form and Posture of the *Vertebræ*, Processes, and Cartilages, may serve to inform us how the *Vertebræ* are capable of being distorted externally or internally. Dr. Keill informs us, that if the *Vertebræ* of the Back stick out backward, the Cartilages which are between the *Vertebræ* are very thin and hard forwards, but considerably thick behind, where the oblique Processes of the superior and inferior *Vertebræ* are at a considerable Distance from one another, which Distance fills up with a viscus Substance: This we frequently observe in infirm Children, where the Ligaments which are united to the back Part of the *Vertebræ*, are often so relaxed as to be altogether incapable of confining them in their natural Position; for which Reason the Hinder-Part of the Cartilages begin gradually to increase in Thickness; this obliging the same Part of the *Vertebræ* to recede considerably one from the other, must necessarily occasion such a Convexity of the Spine as is observed, which most frequently inclines a little to one Side: So likewise in the Case related in the preceding History, the *Vertebræ* being distorted, and the Body for a considerable Time remaining contracted, the Cartilages on their Fore-Part were so compressed, that they became thin, close, and compact; at the same Time the Hinder-Part of the Cartilages suffering no Compressure, were expanded

ed to a considerable Thickness, from whence the Gibbosity. Swinging a Person who labours under one of these Disorders, seems a very commodious Method to restore the *Vertebræ* and Cartilages to their natural State; for while the Patient remains suspended, the Body assumes an erect Posture, the oblique Processes of the superior and inferior *Vertebræ* are brought nearer to each other, and those contracted Muscles which assisted in the Extrusion of the *Vertebræ*, are almost equally extended with their relaxed antagonist Muscles, which gave way to the Distortion of the *Vertebræ*. It is observable that this sort of Distortion which proceeds from a Relaxation of the Ligaments, oftentimes becomes an inveterate Companion, and in an infirm Constitution, frequently propagates itself by an hereditary Succession, especially among Women; altho' it is an intricate Matter to understand how such a Disposition of some particular Part of the Parent's Body, which rendered him or her obnoxious to any particular Distemper, may be communicated to the same Part of the *Fætus*, and render it liable to the same Disorder: But in this Case the Deformity commencing from the Womb, the *Vertebræ* being at that Time soft and cartilaginous, they have been observed to partake of the same in Equality as the Cartilages.

Those Distortions of the *Vertebræ* which are inward, we conceive cannot happen unless
they

they are compressed or forced from their true Position by some external Body. An Instance of this we saw in a Man of about 35 Years of Age, who by a Fall on a Piece of Timber distorted one of the *Vertebræ* of his Loins internally, which was succeeded by a Stupor of his Thighs and Legs, and an involuntary Emission of Urine, that obliged him constantly to wear a Bladder commodiously fastened to his *Penis*, to receive his Water.

OBSERVATION III.

Of a Fractured-Arm which never re-united.

A GENTLEMAN'S Servant, aged about 23, of a good Habit of Body, had the *Os Humeri* of his Right-Arm fractured by the Kick of a Horse. A Bone-setter being immediately sent for, after a violent Extension reduced the fractured Bone, made a strait Bandage on the Part, and placed the Patient in Bed; after which he opened a Vein, and let him bleed freely, notwithstanding by an unhappy Accident he had lost a considerable Quantity a few Days before: Then he obliged him to be content with a very spare Diet, which consisted of Water-gruel, Milk-porridge, &c. all the Time he kept his Bed, which was near 3 Weeks: At the End of which the Patient was so extremely weak, that he was scarce able
to

to walk without Support: However, by reason of the re-iterated favourable Prognostics which were frequently given by the Bone-fetter, the Patient continued under his Care at least 3 Quarters of a Year; at the End of which Time he was committed to the Care of an experienced Surgeon, who on a strict Examination of the Part, discovered the Bones to be as perfectly disunited as ever. During the Time the Patient continued under his Care, there were Catagmatic Plaisters applied over the fractured Member, which were sustained with a moderately strait Bandage. The Patient was allowed a free Liberty in Diet, which consisted of viscous Meats, as Neats-Feet, Calves-Feet, Broths of Beef, Mutton, and Veal, and every Night and Morning was ordered to take ʒi . of *Lap. Osteocol.* in a proper Vehicle; but the Method proved unsuccessful, for the Bone continued disunited, which obliged the Person to keep his useless Arm constantly suspended in a Scarf.

REMARKS.

IT may be necessary, before we endeavour the Explanation of the Cause why the fractured Bone never re-united, to observe, that all Re-unions which are made in Nature, are effected by one and the same Material, which we term nutritious Juice: This is imparted to all the Parts of the Body, by the arterious Channels. It is the Particles of this Liquor (whose Substance is homogeneous) which by passing through the small Tubes are so modified, as to constitute a Body like that through whose Pores it passed; so that according to the Configuration of the Pores, it is formed into Flesh, Bone, Tendon, &c. This being premised, we may reasonably conclude, that whatever is capable of considerably diminishing the Quantity of this nutritious Juice, and preventing its fresh Recruits, may undoubtedly disengage the Design of Nature as to her Re-unions. Thus in the preceding History, the Loss of such a vast Quantity of Blood, and the denying the Patient a competent Sustenance to repair that Loss, was in all Probability the real Cause the Bone never re-united. Authors have established other Causes, which in a great Measure prevent the Union of fractured Bones. As first, in old Age the *Callus* seems difficultly gene-

generated in these, (say they) by Reason the primogenial Moisture is almost exsiccated; or if the Blood recedes from its due Temperament, and assumes a gross and viscous Quality, (as is frequent in old People) the Patient may be liable to the same Misfortune; for in such a Case it is impossible the Blood should pass freely through those imperceptible Arteries which are distributed through the Bones, so that the nutritious Juice being emitted from the divided Bone in a small Quantity, it cannot produce a *Callus* sufficient to effect a Union.

2dly, In pregnant Women the *Callus* is not so soon generated as in other Persons, because great Part of the nutritious Juice which should have assisted in the Re-union of the Bones, is employed in perfecting the *Fœtus*.

3dly, The too long deferring the Reduction of the Bone is a great Cause, because the nutritious Juice passing through the small Channels in the Bone, in a short Time concretes about the divided Extremities; and so consequently obstructs those small Orifices, by which Means a Supply of proper Matter for forming a *Callus* is altogether prevented. Most Authors (according to the Authority of *Galen*) allow a greater Liberty in Diet in Fractures, than is usual when they do not labour under such Disorders. *At quo Tempore Callus gignitur* (says he) *nutriendum Corpus est Cibis Boni Succi & qui multum nutriant*; and those Meats he says

must be viscous: But *Hildanus* and some others highly censure such Practice, and reject the Use of all viscous Meats, by Reason (say they) that “ they create Obstructions in the *Viscera*, and “ give Original to several other Disorders;” but by their constant Use in the Patient mentioned in the preceding History, we never observed the least ill Effect.

OBSERVATION IV.

*Of an Atrophy of the Thigh, Leg,
and Foot.*

A YOUTH of about 18 Years of Age, had for a considerable Time laboured under an imperfect Luxation of his left Hip, with an Atrophy of the Thigh, Leg, and Foot, of the same Side; for the Removal of which Inconveniencies he had for a Time patiently endured the various Attempts of Quacks; but receiving no Benefit by their Applications, he committed himself to the Care of a Surgeon, who at first attempted to reduce the Bone, but without Success; till by the Use of discutient and attenuating Medicines, the condensed Matter which filled up great Part of the *Acetabulum*, was dissolved. The Bone being reduced, the Patient was confined to his Bed; and the next Day to the ematiated Thigh and Leg,

there were several Cupping-Glasses applied; after which the Parts were fomented with the following Fomentation. *R Summitat. Absinth. Scord. Hiperic. ana m. ii. Rosamarin. Salvia. Lavend. ana m. i. coq. in q. s. aq. font. ad colat. adde S. V. ℥ i.* During the Patient's Indisposition he was confined to a dietetic Drink, which consisted of those Ingredients as were capable of removing viscid Obstructions, and retrieving the ill Disposition of the Juices.

By the Continuation of these Means for some Time, the Emaciation disappeared, and the Thigh, Leg, and Foot, re-assumed their former Dimensions.

REMARKS.

THE imperfect Luxation of the Hip probably proceeded from a Relaxation of the Ligaments, and a Condensation of that Mucilage which Nature furnishes to lubricate the Joint: This being by some Means condensed or coagulated, and in Part filling up the Cavity, might oblige the Head of the Bone to recede and lodge on the external Margin of the *Acetabulum*. As for the *Atrophy*, it must be necessarily occasioned by somewhat that was capable of denying the Influx of the Blood or animal Spirits in the Parts; for from hence Wounds, Bruises, Falls, Fractures, Dislocations, &c. have frequently proved the Cause of an Emaciation of some particular Part. Now it is easy to imagine if a Part be deprived of its due Influx of Blood, it can no longer be preserved in its due Distention, but the Fibres, Vessels, and Vesicles, must necessarily subside, because they are no longer influenced by those volatile and fluid Particles that before kept them in their natural Extension: Upon this Account the Parts must consequently appear emaciated, and lose so much of their former Dimensions, as proceeded from the Fullness and Distention of those Parts that were subsided. If the Nerves are abstracted, it amounts to no more than this, that the Part is not so well qualified for receiving the Blood that is determined to pass through it, by Rea-

son the Vessels are very much compressed by the Subsidence of the muscular Flesh, which at this Time ceases to be inflated. The Contiguity and Closeness of the Fibres of the Muscles that must necessarily happen at this Time, in a great Measure proceeds from an Exinanition of their Interstices, and the Emptiness of the little Cells with which they abound. Thus we may see from what has been premised, that whatever prevents the Access of Blood or Spirits to any Part, certainly causes its Emaciation; so that an *Atrophy* must be nothing more than the Falling of a Part from its former Dimensions, by Reason of an Emptiness of the Tubes and Vacuities with which it abounds. A necessary Reflection on these Things will very much assist us, in giving an Account after what Manner the Means that were made Use of in the Cure of the above-mentioned Patient, became so very successful. In order to succeed in this Enquiry, we will first take Notice, that while the springy Particles of the Air, which were intimately mixed with that small Quantity of Blood and other Juices which remained in the Vessels and Fibres of the Parts, were confined to the narrow Limits of such contracted Canals, by the Pressure of the external, and subsiding of the muscular Flesh, we might reasonably suppose the Dimensions of the Part would appear considerably less than usual; but when the Compressure of the external Air was in a great Measure removed, in those Places where the
 Glasses

Glasses were applied, the springy Particles of the Air which were in the Juices, were in a Capacity to exert their Elasticity, and expand themselves; by which Means they dilated the contracted Fibres of the Vessels, distended the compressed Vesicles, and inflated the subsided muscular Flesh; so that the Influx of the Blood and Spirits was in a short Time recovered in the Part. Beside this, the frequent Application of hot Stupes in such a Case, does not a little contribute to effect a Cure, for it is evident a Dilation or Rarefaction of the Air may be produced by Heat. Now no sooner are the calorific Particles insinuated through the enlarged Pores of the Part, but by the Briskness of their Motion they so agitate the aerial Particles, as to oblige them to unfold or unwind their Spring; by this Means they become capable of enlarging the Diameters of those Tubes in which they were before closely confined, by forcing them to recede laterally (their Sides not being sufficient to oppose their Spring) till they had taken up as great a Space as they required. From hence it is certain, that the Air in the Blood keeps itself in an *Equilibrium* with the external Air, because the internal Air is contracted or expanded in a reciprocal Proportion to the Increase or Lessening of the Pressure of the external Air; likewise that the Blood, as it contains such springy aerial Particles, must be consequently liable to various Alterations, according to the various Degrees of the Pressure of the Air on the Surface of the Body.

OBSERVATION V.

Of a Fractured Thigh.

A MAN of about 34 Years of Age, by a Fall from a Ladder, fractured his left Thigh-bone about the Middle, which was attended with Inequality of the Thigh, Collision of the Bones when handled, and excessive Pain. The Patient being laid in Bed, in order to the Reduction of the Bone, one Assistant grasped the Upper-Part of the Thigh above the Fracture, and another laid hold just above the Knee: These two making a violent Extension to bring the Ends of the Bone together, the Surgeon at the same Time pressed the most protuberant Part, till he brought the Ends to an exact Level. A moderate Extension was continued, till the fractured Member was encompassed with a Plaister, Compress, and Bandage. The first Compress consisted of a Piece of Linnen folded
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into several Doubles, which was applied on that Part which had been most protuberant (because the fractured Bone has always a Propensity that Way, which it tended when fractured). Over this was applied a larger Compress, which encompassed the Part with convenient Bandage and Splints; observing to apply a Linnen Compress under the Thigh, to fill the Concavity which the Thigh-bone makes. This being done, the Thigh and Leg were laid on a Pillow, and Junks, with a Cradle over them to defend the Parts from the Pressure of the Bed-cloaths. The Patient had likewise by the Fall received a Contusion on his left Side, for which Reason he being likewise Plethoric, he was ordered to have $\bar{3}$ viii. of Blood taken from him, and that Night was prescribed a parergoric Draught, which somewhat composed his Spirits, and moderated the Motion of his Blood. About the 8th Day the Foot on the same Side was observed to be
oedema-

oedematous, which gradually increased till it had extended itself almost as high as the Knee, whereupon it was fomented with a Decoction of *Absinth. Centau. Hiper.* &c. to which was added, *S. V. q. f.* By the daily Use of this, in less than a Week's Time, the Tumour was perfectly discuffed. About the 14th Day the Bandage being somewhat loose, the Dressings were removed, and all Things appeared to Satisfaction. At this Dressing was applied a Plaister of equal Parts of *Diapal.* and *ad Hern.* with Compress and Bandage as before. About the 32d Day the Dressings were again removed, and the Part likewise appeared under very good Circumstances. At the next Removal of the Dressings, which was at about 6 Weeks End, the Re-union of the Bone seemed to be perfectly compleated; notwithstanding which the Surgeon obliged him not to set his Foot to the Ground for some Time.

REMARKS.

THE Cause of the Inequality of the Thigh, Collision of the Extremities of the Bone, and the Pain which succeeded the Fracture, are so easily to be accounted for, that we shall not here spend any Time in their Examination: However, the Explanation of the Cause of the *Oedema* requires us to make some necessary Reflections on the dull languid Motion of the Blood through the Part; which proceeded from the too strait Bandage, which by compressing the Veins in a great Measure, obliged the reflux Blood to stagnate. We cannot conceive the Cessation of the Body from Motion could in this Case contribute any Thing to it, notwithstanding it is certain the Circulation of the Blood is accelerated by the Motion of the Muscles; for when they are in Action, they compress the Vessels which pass through their Interstices, and so oblige the Blood to a quicker Circulation: I say, notwithstanding this, when the Body no longer remains in an erect Posture, the Contraction of the Heart and Arteries is of sufficient Force to propel the Blood with as great a Velocity as is necessary through all the Parts of the Body, provided it meet with no Compressure or Obstruction of its Channels, the natural Consequence of which would be an Inundation of the contiguous Parts, with an extravasated *Se-*

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rum, as we may easily collect from the Experiment made by Dr. *Lower*, who by making a Ligature on the descending Trunk of the *Vena Cava*, observed there were abundance of Serofities separated: From hence the Artist may easily infer how prejudicial the Continuance of too strait Bandages near the Extremities may prove to those Persons who are inclinable to cachectic Indispositions, whose Blood is generally loaded with serous Crudities; for frequent Observations has made it evident, in such Cases more especially, that Patients have been afflicted with Oedematous Tumours, which have baffled the Attempts of some common Practitioners; because it is impossible to remove those Accidents till the whole Mass of Blood is retrieved from its degenerate State. From what has been premised, we may reasonably infer that the Blood moving slowly through its Vessels in that Part, gave its serous Part an Opportunity of separating itself from those Parts which were of a thicker Consistence; for the serous Part gliding gently along the internal Sides of the Vessels (its Viscidity intitling to that Place) when it arrived at that Part of its Canals, where by their Inflexions they are united, it gradually distilled through the Orifices which are placed on the Sides of those Vessels into the Mouths of the Lymphatics, which we conceive to be continuous to those Orifices. By this Means these Vessels become distended with this Juice, which by the Continuance of their Valves (which open toward

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the Heart, and shut toward the Extremities) deny the Discharge of the Liquor the same Way it was admitted; for which Reason it soon broke those tender Vessels, extravasated and lodged itself in the Porosities of those membranous Parts, from whence the Dimensions of the Part became considerably enlarged, and its external Teguments were capable of retaining the Impression they received from the Compressure of a Finger a considerable Time. What farther confirms us, that the Slowness of the Circulation of the Blood is the frequent Cause of Oedematous Tumours, is an Observation, that these Sort of Tumours frequently afflict pregnant Women; the Cause of which is, the Womb being very much distended by the *Fætus*, &c. by its Weight it compresses the *iliac* Veins, by which Means the reflux Blood is very much intercepted in its Ascent, so that great Quantities of Serosities are separated, which distending the Parts, produce those Tumours. Add to this, the Compressure of the Lymphatics.

OBSERVATION VI.

Of a Tumour on the Knee.

A YOUTH of about 14 Years of Age received a Kick of a Horse on his left Knee, which violently contused the Part, and obliged him to keep his Bed near two Months; during which Time, by the Use of proper Means he in some Measure recovered the Use of the Member, and was able to walk tolerably well with the Assistance of a Cane. Soon after this, diverting himself with some Exercise, he put himself into a violent Heat, which by suddenly exposing himself to the cold Air, was succeeded by an universal Shivering, which terminated in a Fever: By the next Morning the Patient's Knee, which had been before disordered, became tumefied and painful; which gradually increased as the Fever remitted, till

till it was exended to a vast Degree. In the mean Time the natural Colour of the Skin received but very little Alteration. At Interims he was afflicted with miserable, excruciating, and fixed Pains; which on the least Motion of the Part were almost insufferable. At first proper Means were made use of to discuss the Tumour, but without Success; whereupon a Suppurative Cataplasm was applied, but without any conspicuous Effect, for it did not so much as excite an Inflammation of the Part. That there was Matter in the Tumour, was evident from its Fluctuation, which was easily discovered by the commodious Application of the Fingers to the most protuberant Part of the Tumour; whereupon an Incision was made on each Side of the Knee, those being the most prominent Parts, and the most proper to favour the Discharge of the Matter, which did discharge in a considerable Quantity. It is observable, that the Matter which discharged it-

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self immediately on the Division of the Teguments, exactly resembled Curds and Whey ; but afterwards the ferous Part seemed to be tinged with Blood. The Abscess was filled with dry Doffils to absorb the superfluous Humidity, with Pledgets, and a Compress over them all, which was kept on with a retentive Bandage adapted to the Part. The next Day it was dressed with soft Doffils, armed with a good Digestive, which was so applied, as that they might have their equal Effect on all Parts ; over which were applied Pledgets, a Compress, and Bandage as before. This Method of Dressing (the daily Use of a Fomentation being added) was continued for some Time ; for it was a considerable while before the Abscess could be brought to a good Digestion ; which may not seem strange, if we consider the Nature of the Tumour, and the Structure of the Part where it was situated. After a good Digestion was procured, it was dressed with
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OBSERVATIONS. 35

the following deterfive and farcotic
 Decoction. *R Summitat. Cent. Min.*
mi. Rad. Gent. ʒi. coq. in aq. font. ℥iſs.
ad. ℥i. in colat. diſſol. Mel Com. ʒi.
tum adde Tinct. Myrrhæ ʒii. By the
 Uſe of this, in about a Month's Time
 it was ſufficiently incarned, and in leſs
 than a Fortnight's Time, it was firm-
 ly cicatrized by ſome of the common
 Epulotics, the Part remaining ſound,
 and performing its natural Functions
 as before.

REMARKS.

THE satisfactory Obligations which we have received from the Antients, for transmitting to us the Curiosities (and other Things of no less Importance) which occurred in their Practice, ought not to influence us so far, as to oblige us to desist from condemning those Opinions, which the surprizing Discoveries of latter Anatomists have found to be notoriously false; tho' at the same Time, the Respect we have for their Writings, (as they laid the Foundation for our modern Discoveries) should engage us to pay a just Deference to their Authors, and restrain us from making any Reflections, when we observe their Expressions obscure, or some considerable Things omitted, (which could not be accounted for, without greater Skill in Anatomy than ever they were Masters of.) Thus, in the preceding Case, without a competent Knowledge of the Mucilaginous Glands, and the Fluid they secrete, (which the Antients were not acquainted with) it would be impossible to give a rational Account of the Tumour and several other Effects: It is for this Reason we cannot solely confine ourselves to the Perusal of their Writings, by reason they do not contain all we are obliged to know, to render ourselves Artists in
this

this our Chirurgical Province: But not to expatiate on these Particulars, but confine our Thoughts to the Explanation of the Cause of the Fever, and the Original of the Tumour; we ought to observe that the Person being in a violent Heat, and the Pores of his Body consequently sufficiently dilated to favour the Discharge of a large Quantity of Salts, dissolved in Phlegms by Sweat, or insensible Transpiration, by suddenly exposing himself to the cold Air, the cuticular Pores were immediately constricted, by which Means those saline Particles, which should have transpired, were detained in the Vessels, where they soon dissolved the Texture of the Blood, and destroyed the due Mixture of its Parts; some of which receiving so great an Alteration from those saline Particles, degenerated so far as to be for ever incapable of a strict Union; so that Nature used her utmost Efforts to expel them; for we must Remark, that if at any Time there are Particles contained in the Vessels, whose Unaptness to be mixed with the Mass of Blood excites such an intestine Motion, as to destroy the established Proportion of its Parts, Nature, that internal Agent, is excited to exert her Efficacy, to expel or subdue them. These morbid Particles were gradually discharged from the Mass of Blood, by those mucilaginous Glands, which officiated for that Part. Now no sooner had the Parts suffered the first Attacks by a small Quantity of the excluded Matter; (which produced acute Pains) but

the Spirits were consequently put in a tumultuous Disorder, which they communicating to the Blood, promoted its Circulation, the sooner to expel the remaining noxious Particles; these mixing themselves with the mucilaginous Juice, which served to lubricate the Joint, soon disunited the Texture of its Parts, and turned it into a serous and caseous Substance. It is observable, much the same Alteration Dr. *Havers** observes to ensue on the mixing with it.

To account for those acute and fixed Pains, which miserably afflicted the Patient, we need only observe, that the morbid Matter partly consisted of saline Particles, which fixing their Points on the nervous and membranous Parts, did not fail to produce those acute Pains, and the Quantity of Matter distending the Fibres beyond their natural Tone, affected the Part with that fixed dolorific Sense. We never had the Opportunity of seeing but Two of these Tumours in muscular Parts; one of which, we have Reason to believe, derived its Original from the Joint: The Tumour was in the left Thigh of a Man of about 26 Years of Age, who some Time before had laboured under a violent Pain in his left Hip, which he supposed proceeded from a violent Cold he had taken: The Tumour was opened by Caustick, and a Matter discharged like that in the pre-

* See *Havers* on the BONES, Octavo.

ceding Observation, but changed its Colour after a few Days, and became very foetid: In a short Time, by the Discharge of such a vast Quantity, of Matter as daily came away with the Dressings, he became very much emaciated, and soon after died. On Dissection, the *Acetabulum* of the *Innominatum*, and almost all the Fore-part of the *Os Femoris* was found carious.

OBSERVATION VII.

Of a Leg Amputated.

A YOUNG Man of about 16 Years of Age, had for several Years been subject to scrophulous Tumours ; at length he was seized with an unusual Pain in his right Ankle, which was immediately attended by an Inflammation and Tumour ; this in a short Time increased, till it had extended the Part to a very considerable Degree. In this Condition was the Youth committed to the Care of the same Surgeon, who had formerly had the Success of removing some Disorder he at that Time laboured under. After he had continued some Time under his Care, the Matter, by its corrosive Quality, made several small Apertions, through which it daily discharged itself in a considerable

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ble Quantity: In those Orifices were introduced as many Tents, which by penning up the Matter, enlarged the Abscess, and created an almost unsupported Pain. After some Time, by the continual Discharge of such a Quantity of Matter, the Patient became very much emaciated: About which Time, he was attended with an Hectic Fever; whereupon his former Surgeon being dismissed, he was committed to the Care of one (whose frequent Success in Cases which require the greatest Skill might be sufficient to recommend him) who, on Examination of the Part, discovered the lower Extremity of the *Tibia*, and one or more of the Bones of the *Tarsus* to be carious; which was likewise evident from a Collision of the Bones upon the least Motion of the Joint. On mature Consideration of these Things, (the Opinions of some Physicians and Surgeons then present concurring) it was agreed that the only Prospect of effecting a Cure, was to

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amputate the Member: Accordingly Generals having preceded, which retrieved the ill Disposition of the Juices, it was thus performed. The Patient being seated on the End of a Form, with a Servant behind to hold him firm, and another before to keep the Leg extended; a strong Ligature was placed about 5 or 6 Fingers Breadth above the Knee, with a Compress under the Thigh, about the same Distance above the Bending of the Joint, and a Piece of Pastboard under that Part of the Ligature which was to be twisted, to prevent those Corrugations the Skin might be otherwise liable to, which would put the Patient to unnecessary Pain: Another Ligature was made about 5 Fingers Breadth below the Joint, just above the Place where the Artist designed to make the Incision. The first of these Ligatures an Assistant, by means of a Tourniquet, or Turnstick, so straitned, that it obliged the Compress which was placed under the
Thigh,

Thigh, to press the Vessels sufficiently, to intercept the Flux of Blood; and, by rendering the Part in some Measure destitute of Sense, made the Operation the more easy to the Patient. The other Ligature, which was a Fillet bound exactly even round the Part, served as a Rule to incise by, and keep the Flesh steady. Then the Operator placed himself between the Patient's Legs, with his dismembring Knife in his right Hand, his left being fixed on the Back to hold it firm: He placed it just at the lower Edge of the Fillet, where, by a circular Turn of his Hands, he made an Incision quite round to the Bones; after which an Assistant, with a Catlin, separated the Flesh betwixt them, and scraped off the *Periosteum*; then a Servant drew up the muscular Flesh, to give liberty to take off as much of the Bone as possible, while the Surgeon took the Leg in his left Hand, and fixing the Saw on both Fossils at once, (which he was obliged to do, by reason

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son the Strength of the *Fibula* was not sufficient to sustain the Weight of the Saw without shivering, had it not been assisted by the larger Fossil) he at a few Strokes separated the Member from the Body. This being done, the Ligature, which served to keep the Flesh and Skin firm, was removed, and the uppermost Ligature was a little loosened, to discover the Mouths of the Arteries, which at that Time emitted their Blood with great Velocity: Then the Surgeon, with a peculiar Pair of Forceps, (with a Ligature over them, which consisted of double Thread waxed) took hold of one of the Arteries, which an Assistant, by slipping the Ligature over the Forceps, tied pretty strait: The Ligature which was straitned by the Tourniquet, being a second Time loosened, two more Arteries were discovered, which were tied as the former. A Stop being put to the Effusion of Blood, the muscular Flesh was brought over the Bones as much as possible,

and

and two small dry Pledgets being applied on their Extremities, a large Pledget of Tow armed with *Terebinth*, warm with the Palm of the Hand was applied over the whole Stump, which was covered with a dry Pledget and a Compress 4 Times double, over which was drawn a Bladder cut at its Edges, to make it fit the more commodiously, which were encompassed with a Strip of Cloth, spread with somewhat sufficiently adhesive, to keep it firm; then a Cloth cut in Form of a Cross was applied, and the Part rolled up with two Rollers sprinkled with Vinegar, one of which consisted of a single Head, and the other of a double Head, each of which was about 3 Inches broad, and of a sufficient Length. After the Performance of these Things with as great Expedition as possible, the Patient having taken a Spoonful of Cordial Waters, (which he likewise had before the Operation began) he was placed

placed in Bed, with a Pillow to support the Stump, a Person holding his Hand on the Dressings for about two Hours after the Operation. The third Day the Dressings were removed, and all Things appeared to be in a very good Condition: In this Dressing care was likewise taken to keep up the muscular Flesh to the Extremity of the Bones as much as possible; which was very well effected, by binding a Strip of sticking Plaister pretty strait round the Stump, about a Finger's breadth from the Edges. The remaining Part of the Dressing consisted in the Application of the digestive Compress and Bandage, as before, only omitting the Hogs Bladder. By the third Dressing, the Stump seemed to be very well digested; whereupon it was dressed with *Tinct. Myrrhæ, et Mel Ros.* This was continued a few Days, till it had corrected the Laxity of the Fibres of the Part, lessened that too large Expence of Matter, occasioned

OBSERVATIONS. 47

sioned by the Digestive, and given the
Flesh a tolerable firm Consistence.
After this, the Cure was effected,
by dressing the Edges with *Ung. aur.*
and *Dessicat. Rub.* alternately, and
applying dry Lint on the Stump, or
the catheretic Lint elsewhere de-
scribed, as Occasion required.

REMARKS.

AMPUTATION being an Operation, by the judicious Performance of which the Life of a Patient oftentimes entirely depends, (seeing it is only performed by Artists, in those Cases which have proved the Use of other Means to be ineffectual, or where Reason authorizes them to attempt it) it ought to influence them so far, as to oblige them to reflect on some necessary Particulars before the Performance of the Operation, at the Time of performing it, and after it is finished; because the having a particular regard to these Things, may be the Means of regulating some very important Circumstances. Thus the deferring the Operation in a Patient, whose Constitution or Nature of the Disease does not immediately require its Performance, and waiting for a more favourable Season of the Year, may prove very beneficial in some Cases, seeing the various Seasons of the Year have each of them different Effects on our Bodies. Likewise the Consideration of effecting a Cure is very necessary to proceed the Operation; for notwithstanding it may be performed in some Cases, where several Advantages may conduce to effect a happy Cure; yet it would be Rashness to attempt it in all: For Instance, in old scorbutic Habits, where all the Juices are saturated with saline Particles, which are capable of
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producing such an Alteration in any Part of the Body, (provided it be by any Means exasperated) as it shall in a short Time be seized with an entire Mortification. I say in such a Case as this is, the performing the Operation, would only tend to hasten the Destruction of the Subject; for the degenerate State of the Juices not being retrieved, if the Part is extirpated, the Wound will certainly mortify: For the same Reason, those Mortifications which accompany acute Fevers, are equally destructive to the Patient, if he undergoes the Operation: For the natural Disposition of all the Juices of the Body, being at that Time depraved, and the balsamic Quality of the Blood entirely consumed, the Part must necessarily lay very liable to be assaulted by a Gangrene, the gradual Progress of which, in a short Time, puts a Period to the Patient's Life. On the other Hand, if the Age, Constitution, &c. of the Subjects favour, the Undertaking is often performed with all the desired Success imaginable; not but sometimes the least Irregularity in the Patient's Living, or such like; (tho' perhaps before all Things seemed to concur to render a speedy and effectual Cure) yet such a little Disorder may perfectly change the Scene, and cause all Things to appear with quite another Face: For this Reason, the Artist is always solicitous of being acquainted with every little Circumstance; the Life of the Patient frequently depending on the regulating those Matters, which to the inconsiderate Eye

appear insignificant. If the Patient has for a long Time laboured under sinuous Ulcers or Fistulas in any large Joint, caused from some ill Disposition of the Juices, it may be expedient before the Operation be performed, that Generals precede to retrieve these Fluids from their degenerate State, revive the decayed balsamic Quality of the Blood, and make it capable of answering Nature's Intention, as it is the Grand Material she constantly employs in such Cases. We have sometimes observed that a violent Contortion of the Knee or Ankle has been succeeded by a Caries on the Joint; which has obliged the Patient to have the disordered Member extirpated, before he could have any Prospect of a Cure; but in such Cases as these are, we suppose the Contortion of the Joint distorted one or more of the small Vessels, which assisted in the Composition of the mucilaginous Gland, whose Office it was to secrete a Juice for the lubricating the Extremities of the Bones, and facilitating their Motion. From hence we may reasonably suppose those small Passages of the Gland being confounded, an Interruption of the Motion of that Juice must necessarily follow; from whence the Vessels become very much distended, and the whole Gland preternaturally enlarged. Now we conceive that the Juice, by stagnating in those minute Tubes, soon loses its natural State, and grows corrosive; by which Means it becomes capable of eroding their Parietes, and mixing itself with some of the same Sort of Juice, which

which had not yet received this Alteration ; it imports to it its corrosive Quality, the Union of which forms, as it were, a *Menstruum*, or dissolving Fluid, which, as all others, first works on those Parts that are most capable of a Dissolution, *viz.* the Cartilages ; after which it displays its Effects on the Bones themselves, eroding and disuniting them till it frequently penetrates into their internal Substance. This Conjecture is chiefly grounded on some Observations which occurred on the Division of some Joints, which were amputated by reason of no other Disorder at first, than a violent Distention or Contortion ; in one of which we observed, that That Part of the Cartilage which was contiguous to the Gland was first dissolved : In one Joint we found the Cartilages, which clothed the Extremities of the Bones, quite consumed, before any Part of the Bones themselves were observed to be apparently altered ; and in another the corrosive Juice had penetrated into the Bone, under the disordered Gland, a considerable Way, before half the Cartilage was dissolved. It may sometimes happen that the Extremities of the Bones being divested of their Cartilages, may unite and form an *Anchilosis* ; an Example of which *Fabricius Hildanus* gives us, of a Child of 8 Years of Age, who had his right Arm dislocated from a Fall, which was mightily emaciated. At length his Relations perceived a Coalition in the Bending of his Arm, which hindered him from extending it, and it continued bent like a crooked

Stick, without putting him to any Pain. From what has been premised, the Artist may easily collect how circumspect he ought to be in violent Distortions of the Joints, since they sometimes occasion so terrible an Operation or Death. As to the Place where this Operation is to be performed, and the Method how, there are various Opinions to be met with in the Writings of those Authors who have treated on this Subject. Those who thought themselves sufficiently authorised by so great a Man as *Fab. ab Aquapendente* were of Opinion, that extirpating a Member in the mortified Part was most convenient: Others, particularly *Hippocrates*, *Guido Laurentius*, *Doubertus*, and *Hildanus* (when an absolute Necessity did not oblige them to the contrary) seemed to approve of amputating in a Joint; but this the Artist esteems very improper, by reason it requires a much longer Time to complete a Cure: An Instance of this we saw in a Man about 26 Years of Age, of a very good Habit of Body, who had his right Leg amputated at Sea in the Joint of his Knee, which was near a Twelvemonth before it could be brought to a firm Cicatrice, notwithstanding proper Means were made use of as is usual in such Cases: But this may be easily accounted for, if we do but observe the Structure of the Part, which we find to be destitute of those muscular Fibres which are the proper Tubes for conveying those Particles which are adapted to effect that grand Design of Nature. The Methods the

Antients described, of performing this Operation, were so various, that we shall not spend Time in their Examination, but make some Remarks on that mentioned in the preceding History; the Simplesness and Easiness of which is sufficient to recommend it to all Artists. First, Care is to be taken that a pretty thick Compress of Cloth be applied on that Part where it may with the greatest Ease compress the Vessels (when the Ligature is straitned with the Tourniquet) sufficiently to deny the Effusion of Blood after their Division. This, if the Operation be performed below the Knee, might be most conveniently applied in the Ham, did not the Tourniquet and Ligature incommode the Surgeon in rolling the Stump; it being often requisite to keep the Ligature straitned about the Part till all the Dressings are applied. It is for this Reason the Compress is to be applied a little higher, between the *Mus. biceps Femoris* and *Semi-membranosus*. If the Operation be performed above the Knee, the Compress may be most properly applied on the Inside of the Thigh, a little below the Groin. If the Arm is to be amputated, it is to be applied on its Inside, betwixt the *Mus. biceps* and *Gemellus*; or in this Case the Fingers themselves, if commodiously applied, by compressing the Teguments, may oblige the Sides of the anterior Channels to be contiguous, and so perfectly interrupt the rapid Motion of the Fluid they contain, and hinder its Effusion. However, either of these Ways being sufficient

to command the Blood in this Case, and permit it to pass out of the divided Arteries, in order for their Discovery, that they may be taken hold of by the Forceps and tied. The Operator is at his Liberty to proceed which Way he best approves of. As to the Ligature of the Vessels (notwithstanding a late Author disapproves of its Use, chiefly to recommend a Remedy of his own Invention) it is certainly one of the most advantageous Methods yet known and practised; for after their Use, a proper Digestive may be safely applied the very first Dressing; and those Dressings may be removed the next Day, and no Hemorrhage ensue; altho' this the Artist never does, unless some pressing Circumstances oblige him to it. On the contrary, those who apply Astringents to obstruct or constipate the Mouths of the Vessels, besides the Inconvenience of keeping a Hand on the Stump for a whole Day, after the Operation, as some Authors propose, the Part is frequently convulsed, a fresh Effusion of Blood often ensues, and Digestion is for a considerable Time retarded; This last happens by reason of the Stipticity of the Vitriol, or some other Ingredient which entered into the Composition of the restraining Powder; for it is certain that those stiptic Remedies, whether aluminous or vitriolic, constringe the Orifices of the Vessels and muscular Fibres, and hinder the Emission of those Particles of which good Pus is formed, till, by the Application of proper Digestives, the Fibres recover their due
Tone,

Tone, and their Orifices become relaxed. It is observable, when a Ligature is making about an Artery, the Patient usually complains of a violent Pain, which he says exceeds that which was caused by the Incision. In order to account for this Phænomenon, we ought to observe, that the Nerves every where accompany the Arteries; that the Fluid the former contain might be so far influenced by the Vibrations of the latter, as to be kept in a continued Motion: Now the Arteries cannot be taken hold of by the Forceps, without seizing a small Part of the contiguous Flesh, and with it probably the Nerve which accompanied the Artery; so that we may reasonably suppose, that excessive Pain the Patient is sensible of is entirely owing to the Ligature's being made on the Nerve, by reason those Parts are endued with the most exquisite Sense imaginable. Before the Removal of the first Dressings, it may be convenient to humect them with some proper Oil, the better to disengage those Parts which so closely cohere one with the other, lest by removing the Dressings with too great Violence, a Ligature unhappily slips off a Vessel, and a fresh Effusion of Blood succeeds. For this Reason the Artist is always very circumspect in the Removal of his Dressing; which always creates the greatest Difficulty, by reason the Bladder adheres so fast to the contiguous Dressing as not to be removed without a great deal of Trouble and Inconvenience. It is for this Reason (and its retain-

ing the Blood in a fresh Hemorrhage) several Persons have, with a great deal of Reason, disapproved its Use. We have more than once observed, that the Operator has had some Difficulty in making his Ligatures on the Arteries of old emaciated Subjects, by reason of the hard compact Substance of their Coats, which at that Time seemed scarcely capable of being sufficiently constringed by the Ligature to deny the Effusion of Blood. These Ossifications, as it were, of the Arteries, are frequently met with in old Persons, whose Blood has lost its balmy Quality, and is become little more than a *Caput Mortuum*. We had once the Opportunity of seeing a very remarkable Case, much of this Nature, in an old Man, who was dissected in the Theatre in the Physicians-College; the right crural Artery of which Subject appeared very hard and compact to the Fingers; the Fibres which composed its internal Coat seeming as tho' they were interspersed with fabulous Concretions. During the first 4 or 5 Dressings, if the Surgeon has been cautious in defending the Ends of the Bones from the Action of the Air, by the Application of dry Pledgets, they soon begin to be re-invested with new Flesh, and the Stump may be cured without an Exfoliation: Tho' he has no Reason to be solicitous about it; for while he is endeavouring to effect a Cure by convenient Applications, that Part of the Bone which has received any Alteration from the Air, exfoliates without creating the least Trouble

or Inconvenience. It is observable, that when the Edges of a Stump are drawn into a very narrow Circumference, and the Discharge of Matter has for some Time decreased, the Patient begins to grow gradually more plump and fleshy; insomuch that in a short Time after the Cure is completed, there is generally so considerable an Alteration in the Constitution of the Patient's Body, as is equally satisfactory and surprizing. This, in those Cases which have proceeded from chronic Causes, as Fistulas, Cancers, scrophulous Ulcers, &c. it effects by draining off those noxious saline Particles, which, by being mixed before with the Juices of the Body, destroyed their nutritious balmy Quality, and rendered them incapable of maintaining the Parts in their due Proportion and Temper; for the Blood, in such Cases as these, is in a great measure deprived of its oily Particles, which should have engaged and sheathed those *Spicula* or Edges of the Salts; it must begin consequently to erode and consume the Parts of the Body, and procure such a general Emaciation as is frequently observed. Now when those *Miasma* of the Disease are drained off, and the Juices rendered sweet and balsamic, a Reparation of those Parts which have been expended, may be easily accomplished, and the Fibres may become so distended with proper Matter, as to enlarge the Parts of the Body beyond their former Dimensions. Before we finish our Remarks on this Subject, we shall take

take notice of a new Way of amputating large Members, with a more speedy and convenient Method of curing Stumps than that commonly practiced ; as is mentioned by Mr. *Young*, in his *Currus Triumphal. Terebinth.* p. 10. The Ligature being made on the Part, as in other Amputations, he proposes the raising a Flap of the membranous Flesh (if it be the Leg) which covers the Muscles of the Calf, with a Catlin, or some long Incision Knife, beginning below the Place where you intend to make Excision, and raising it thitherward, of Length enough to cover the Stump ; This being done, it is to be turned back under the Hand of him who gripes ; and as soon as the Member is severed from the Body, this Flap of cutaneous Flesh* is to be brought over the Stump, and fastened to the Edges of it by 4 or 5 Stitches : After this, a Dossil is to be clapped into the inferior Part, that one Passage may be open, lest any Blood or Matter lodge between. But of that (saith mine Author) there seldom occurreth any. Over this is to be applied a common Defensative *ex Bol. Sang. Dracon. Mastich. Terræ Sigil. &c. cum alb. Ovor. & Aceto*, which is to be kept close with a cross Bandage and other Compresses, after the usual Manner : The former, *viz.* the Defensative, not only defends from Accidents, as Heat, Pain, Fluxion, &c. but gently constipateth the Vessels thereby, contributing to the securing the Hæmorrhage, and very con-

* See *Platerus's* Observation of the Hangman of *Basil*, who stopped Bleeding by the Afs of a Hen divided.

siderably assists the Agglutination: The latter, *viz.* the Compress Ligature, keeps the Flesh snug, and close to the divided Ends of the Vessels; confirms the Consolidation, keeps the Part from Cavities, and the Blood from Extravasion; and hinders that Deflux of Humours which would otherwise destroy the Intention of Cure. In this Way of Cure our Author advises Phlebotomy, Juleps, Ligature of the extreme Parts, if Need be, with what else may contemperate the Blood, hinder Defluxion and Maturation, and promote Consolidation. In the succeeding Dressings, he proposes the Use of Medicines, healing *per Symphyfin*: Among which he is of Opinion, there are none better than that already mentioned, provided there be some Powder of the Roots of great Comphery added thereto; the Dossil, if any is used, may be left out the next Dressing, or that following it. That this Method hath cured such a Stump in 3 Weeks, is a Truth our Author could vouch by sufficient Testimony: After this he takes notice, that this Manner of dismembring, &c. is not to be made use of where the Part hath been much inflamed, tumefied from Fluxion, or otherwise vexed therewith; nor in Members amputated for chronic Causes, as Cancers, Fistulas, &c. or where the Body is pocked, or very cachectic; because such Digestion (which would destroy the Union) is necessary to rectify and sweeten the Mass, which it doth, by drawing the *Miasma* of the Disease, more than 10 Fontanels can do: But
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in most Amputations made at Sea in Fight, or on Land in Battles, or wheresoever acute Accidents, such as Wounds, recent Lacerations, require it, it may be done, and with those Advantages of the other way it rivals. In the next Place our Author reckons up several considerable Advantages, which he says are manifestly acquired by this new Way. For a farther Satisfaction in which we refer the Reader to the above mentioned Book.

There yet remains one considerable Phænomenon to be explained before we finish these Remarks, which is, that after the Amputation of a Leg or Arm, the Patients usually complain of a violent Pain for some Time, and have so strong an Opinion that they have the actual Use of the Members, that it is Sight only that can undeceive them. There have been several Persons, as well Philosophers as Physicians, who have given their Opinions as to this Matter, particularly *Gassendus*, *Descartes*, *Etmullerus*, &c. but one of the latest we have met with, is that of *Dr. Verduc*, a *Paris* Physician, who after a handsom Acknowledgment of the Difficulty wherewith this Problem is to be solved, he tells us, that the Objects which touch the Organs of the Senses, do cause a certain Reflex of the Spirits even to the Brain, in order to make a Sensation there; but yet the Objects are not always the Cause of this Reflex of the Spirits; for it is often produced by the Spring of the nervous Fibres: Thus in cutting one Part of
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OBSERVATIONS. 61

the Body, there must needs follow a considerable Tension in the Nerves, and the Spirits at the same Time return to the Brain with a Kind of Impetuosity. This Motion of the Spirits is certainly much greater, since after that the Part is cut off, the Nerve which remaineth, and which is extended even to the Head, is shorter; therefore the Spirits which flow from the Brain into this Nerve, are so crouded together there, that not being able to go any farther, they are reflected against the Bank, and those which flow every Moment from the Brain, are violently beaten back again, not only by reason of this Reflux, but also from the Trembling which the nervous Fibres have received in the Operation; this perhaps (says our Author) is the Cause of those Pains which continue afterwards.

OBSERVATION VIII.

Of an Aneurism on the Back of the Hand.

A Gentleman about 50 Years of Age, had a Tumour arose on the Back of his left Hand, much about the Bigness of a small Hazel Nut, which by a light Compressure of the Finger, instantly disappeared; but on the Removal of the Pressure, it immediately reassumed its former State; which, with the continual Vibrations that were observed in it, intitled it to the Character of an *Aneurism*, the Skin retaining its Colour without the least Alteration. It was a considerable Time before he had Recourse to a Surgeon for Advice, by reason at first it did not in the least incommode him in using his Hand; however, after some Time, it became more troublesome, and its gradual Enlargement obliged

obliged him to it. During the Use of Means, his Surgeon engaged him to desist from any violent Exercise, in which the Use of that Part was required, and immediately began his Method of Cure, by taking away about 10 Ounces of Blood: After this a thin Plate of Lead was applied over the Tumour, which was so adapted to it, as to compress it sufficiently (when detained with a proper Bandage) without any great Inconvenience. This was continued for some Time, but without its desired Effect; tho' in all Probability, its longer Continuance might have made the Gentleman sensible it was capable of effecting a Cure, notwithstanding he so much suspected it. However, the following Plaister, spread on Leather, was applied, & *Emp. Diapal. ad Hern. ana pt. equal. m. f. Emp.* Over this was applied a Compress fixed to a proper Bandage, which was conveniently fitted to the Part; this Method was repeated as often as Necessity required.

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In about 2 Months Time the Tumour seemed to be somewhat subsided, and the Pulsation was not discernible, the Artery to the Touch appearing as tho' it had assumed a Callosity, or as if it had been perfectly ossified.

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REMARKS.

THO' we have met with Variety of Opinions concerning the Formation of an *Aneurism*, among the Writings of our Predecessors, there still remains several Difficulties which are not to be accounted for, from what they have delivered on this Particular; which obliges us to look on them as unsatisfactory: For which Reason we shall offer what our own Thoughts have suggested to us on this Head, and leave it to the impartial Judgment of the Reader. But before we go about the Explanation of the Manner of its Formation, we ought to enquire into the Structure of an Artery, and the Properties of the Fluid it contains, the better to account for some Things which require their particular Examination. Now it is certain an Artery consists of three Coats; the first is composed of a *Rete* of small Blood-Vessels, Nerves, and membranous Expansions; the second consists chiefly of circular Fibres; the third, or internal Coat, is composed of Fibres extended according to the Length of the Artery. From a necessary Reflection on the Distribution and Order of the Fibres, which chiefly compose their Coats, we may reasonably suppose them to be muscular Tubes, which are either capable of a Contraction or Expansion; the former consists in the Fibres of the second Coat, while the latter seems to consist in the

peculiar Structure of each. The Blood they contain is a compressible, dilatable or elastic fluid Body, which, beside its constant progressive Motion, is intitled to an expansive one, by means of an included Air, which gives it that Spring which forces it violently against the Parietes of the Vessels. This expansive Motion of the Blood, if its Vessels retain their Continuity, is exactly proportioned to the Pressure of the external Air on the Surface of the Body, and the constrictive Power of its Vessels; so that if either of these by any means, happens to be abated, that is, if the external Air, by means of its Rarefaction, does not sometimes press so violently on the Surface of the Body, as at others, the Air which is contained in the Veins and Arteries with the Blood, by unfolding its Spring, does, as it were, inflate or distend those Vessels, so as to enlarge their Diameters; or if by any means the Arteries lose their Faculty of Resilition or Contraction, the Fluid they contain by Means of the springy Particles, which are intimately mixed with it, expands their unresisting Coats, till they are incapable of any farther Distention. This Opinion seems to be very much fortified by an Observation that the Division of the two external Coats of an Artery, is always succeeded by an Enlargement of the Diameter of the Vessel in that Place, which is a true *Aneurism*. This may be effected divers Ways, as by a sharp and corrosive Humour, which may insensibly erode and consume the external Coats; (as we conceive

ceive in the Case of the above-mentioned Gentleman) seeing those Persons who are of a thin spare Habit of Body, and whose Blood is generally deprived of a great Quantity of sulphureous Particles, which should have sheathed the Angles of the corrosive Salts, are most frequently attended by such Tumours. Likewise the accidental Division of the Coats by a Lancet, sharp corroding Medicines, &c. may produce such an Effect. Now it is no hard Matter to conceive that if the orbicular Fibres of the second Coat are divided, the Artery loses its elastic or restitutive Powers, and gives the Particles of Air in that Place, an Opportunity of unfolding their Spring, and expanding all the Parts of the Liquor with which they are mixed. By this Means the Particles of the Fluid, by their lateral Pressure, oblige the parallel Fibres of the internal Coat to be distended, and separate one from the other, in that Place where they are destitute of those Fibres, which, by the Assistance of the external Air, used to proportion the Compressure to the Resistance of the internal Air: From hence those Fibres which composed that Side of the Vessel, must be necessarily forced thro' the enlarged Orifices of the external Coats, and occasion such a Tumour as we have been speaking of. This, in our Opinion, seems to be one of the most satisfactory and just Accounts of the Formation of an *Aneurism*, by reason it so exactly corresponds with the Mechanism of the Parts. It is true, those Authors who referred

it to the Extrusion of the internal Coat thro' the Orifices of the external, by the repeated Efforts of the Blood, made a large Step toward the Discovery of the true Manner of its Formation. But since we have been obliged by the Curious and Inquisitive of our Age for their many Discoveries, which are no less useful than surprizing, it ought to engage us (if they offer any thing that is capable of assisting us in accounting for those Phœnomena which occur) to explain those Things that depend on their Improvements, according to what they have advanced, without having recourse to what is purely Conjecture, as our Predecessors were obliged to do, by Reason they had not the Advantages which we at present enjoy. This Hypothesis of the Formation of an *Aneurism*, may enable us to give a rational Conjecture of the Ossification of an Artery, in that Part which has been dilated, and which never returns exactly to its first Dimensions. This has been accounted so difficult to explain, that few Authors have attempted it; however those who have, are of Opinion, that it must be effected one of these two Ways: The first is, that the saline, pungent, and most exalted Particles of the Blood, penetrating the lesser Porosities of the Fibres of the Tunicle of the Artery, mingle themselves with its nourishing Juice, and by that Means contribute toward its Ossification. The other Way they have assigned is, that the Blood which maintains the *Aneurism*, being in a continual Fermentation, does,

does, by its Motion, increase the Heat of the Part, which insensibly exsiccate and hardens the dilated Fibres, by dissipating and rarefying their Humidity. This Opinion is fortified (say they) by an Observation that the Aorta is frequently ossified in old People, at its Exit from the left Ventricle of the Heart. These Opinions, how pleasing soever they may be to some, do not seem to be altogether satisfactory; for which Reason, we shall endeavour to account for it, by confining ourselves to that Idea we have of the Structure of an Artery, seeing we conceive it is capable of furnishing us with the most solid and best grounded Notions for solving this Phœnomenon. The Structure of these Tubes (which seem to be the most proper and convenient for performing that Office the Author of Nature has designed them for) by Reason of the Closeness and Contiguity of their Fibres, and other Parts, of which they are composed, appear to be some of the most dense and compact of any in the Body, and are still capable of being rendered more firm, by the Admission of proper Particles, seeing their Hardness or Laxness is owing to the more or less firm Cohesion of the Parts. Consonant to this, we conceive the Ossification to be effected: For while the internal Coat was amplified by the expansive Motion of the included Air, its Pores must be sufficiently enlarged, to entertain those Particles of the Blood, which enjoyed such a Figure and Magnitude, as rendered them capable of insinuating themselves

thereinto; where they soon engage themselves with other Particles, whose Figure intitled them to a mutual Correspondence: They obliged them to recede, and afford them sufficient Room to lodge themselves in; by which Means the Thickness of the Artery must be necessarily increased in that Place, and the firm Cohesion of its Particles must be such, by the continual Pressure externally, as will afford it a sufficient Tensness to resist the reiterated Efforts of the internal Air and Blood, and give it such a firm compact Substance, as, to external Touch, may make it appear perfectly Ossified. It is to be observed, that what has been mentioned hitherto, has only had respect to a true *Aneurism*, a false one deriving its Original from a total Rupture of the Tunicles of an Artery; by which Means the Blood extravasates, and lodges in the Interstices of the Muscles, where its putrefactive Principle being set at Liberty, it begins to foment and display its mischievous Qualities, which is sometimes succeeded by the evident Signs of a Gangrene. In some such Cases as these are, its Progress may be happily stopped, and a Cure effected, by timely making an Incision thro' the Teguments, to lay the Artery bare, and making a Ligature on it: But if by Respect of its long Continuance, it has occasioned a Mortification of the Part, the Surgeon must be obliged to extirpate the Member, if he proposes to effect a Cure.

OBSERVATION IX.

Of a Collection of Matter in the Right Cheek, which eroded the Salival Duct.

A YOUTH about 15 Years of Age, by some unhappy Accident, received a Blow just underneath his right Ear, which in 2 or 3 Days was succeeded by a small Tumour; However, by some common Applications, in a few Days, it seemed to be wholly dispersed, and so continued, till soon after being exposed to the Violence of bad Weather, it was again revived, and immediately extended itself over the greatest Part of that Cheek, and some other continuous Parts. Means were made Use of for some Time, to suppurate it; at length one Part of it, about 2 Fingers Breadth from the Ear, which began to assume a conical Figure, was o-

pened by Caustic. The Matter which discharged on Separation of the Eschar, seemed to be a serous Juice tinged with Blood. This was dressed for some time methodically; but the greatest Part of the Cheek still continuing tumefied, several Cataplasms were applied, in order to set at Liberty that stagnated Juice, which kept the Part so preternaturally distended: But the Event of this proved to be a Congestion of the most viscid Parts of the Matter into several Places; which, altho' at some Distance, yet seemed to have a Communication with each other. Some of these, by their gradual Enlargement, obliged the Surgeon to open them by Caustic; while others, which were not arrived at such an Extent, were opened by an Incision Knife only: But what was most observable, was, that about this Time the Ulcers discharged such a large Quantity of limpid Juice, more especially on Mastication, (tho' indeed it seemed to be emitted

emitted chiefly from that wherethe Caustic was first applied) that the Patient was obliged to keep several doubled Cloths on his Neck and Breast, to absorb that excessive Humidity, which, by continually distilling on those Parts, might have proved very inconvenient. Sometimes the Discharge was so very considerable, that he was forced to change those Cloths 6 or 7 Times a Day: But this was generally more or less, as the Action of the lower Jaw was more or less required. It was, without doubt, nothing more than an Erosion of the *Ductus Stenonianus*, by the Corrosiveness of the Matter, which occasioned That so large Expendence of Juice: For to us it seems impossible it should derive its Source from any other Cause; and with this our modern Writers, who have taken Notice of such Cases, seem to agree. But to return to our Case: This vast Discharge of the salival Juice continued between 2 and 3 Months: All the
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Remedies which were from Time to Time applied, contributing but little to the preventing its Expence, till the Ulcers were dressed with that stiptic and cathartic Lint elsewhere described. This it was which put the first Stop to its Effusion, and dried up some of the Ulcers; tho' its Application occasioned some Uneasiness in the Patient, by Reason it at first procured a little Pain. During the Use of proper Means, both internal and external, there were several little Inconveniences occasioned by the continual Distillation of this Juice from the upper Orifice between the Cuticula and Cutis, where it used to form itself, as it were, so many little Cysts; which, on Discovery, were laid open, and soon healed by some desiccative Medicines. Some Time after the large Discharge of Juice began to remit, the parotid Gland was observed to be considerably enlarged; which continuing for some Time, the Patient was advised to smoke Tobacco.

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This, by Degrees, he accomplish-
ed; and during the Continuance of
it, the tumefied Gland subsided, and
the remaining Ulcers healed.

REMARKS.

THE necessary Reflection on the admirable Contrivance of the Author of Nature in the Formation of the Glands, and their Manner of secreting one Fluid from another, which seems to consist of very different Principles, cannot but be a very satisfactory Amusement, which is sufficient to engage the Thoughts of the Curious and Inquisitive in This: And indeed some of those who have cultivated this Part of Anatomy, have been so successful in employing their Thoughts concerning these Things, and the Nature and Use of those Juices which are found in the animal Body, that we are already capable of giving a far better Account of some Particulars, which before, for want of these Advantages, we could not form an Idea of. It is by these Means, the various Diseases, which are occasioned by the Disorders of the Glands, or the Liquors they secrete, are to be accounted for, without having recourse to those curious Speculations, which being only proper to entertain the Fancy, may deserve the Term of useless Curiosities. Among other Things which relate to the Structure and Secretion of the Glands, we cannot but take Notice of the commodious Disposition of their peculiar excretory Ducts, which discharge themselves of their separated Juice. It is certain, notwithstanding

standing the Blood is propelled with great Velocity from the Arteries into those little Tubes, which partly compose the Glands, and which are a Continuation of the former Arteries, when it arrives at that Place where it meets with Pores, which are so proportioned to the Magnitude and Figure of some of its Particles, as to be easily capable of receiving them, after they have engaged themselves therein, their Motion forward must be very languid and dull, and only such as is caused by the Pressure of Particles of the same Nature coming behind them, did not Nature so dispose the Course of those Ducts, that when there is the greatest Demand of any of these Juices, their Motion is assisted by some other Means. This is evident in several Cases, tho' we shall instance but in One, *viz.* Mastication, in which Action of the lower Jaw, as there is a great Quantity of Spittle required, so by the Contrivance of Nature, the Glands and Ducts which convey it are conveniently placed, that when the Muscles are performing this Action, they promote its Discharge. Thus the excretory Duct of the parotid Gland, passing over the Masseter, and thro' the Buccinator, must be consequently so pressed in the Contraction of the former, as to oblige its Juice to a sudden Emission. From hence that large Discharge of Liquor during Mastication, in the Case above-mentioned, where the Duct being eroded, as the Liquor continued to move briskly forward,

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when it arrived at that Part where its Tunicles were divided, it must consequently make its way thro' the Aperture, and fall on the contiguous Parts: If the Juice happens to stagnate in any of these, or other Glands, the Trouble and Inconvenience it puts the Patient to, obliges the Surgeon to remove any Obstruction in the Ducts, or whatever else may occasion the Stagnation, and recover the Motion of the Fluid. This he accomplishes by proper Intervals, and applying emollient diffusible Medicines, which are qualified for setting at Liberty the stagnated Humour, by dividing the Cohesion of its viscid Parts, and disposing it to a State of Fluidity. We once saw this effected, by the repeated Application of a Cupping-Glass on a tumefied Gland, which had proved all other Means, that had been made use of, to be ineffectual: The Successfulness of this Experiment, was undoubtedly owing to the Rarefaction of the included Air in its small Vessels, which by enlarging their constipated Passages, and recovering the natural Consistence of the stagnated Juice, disposed it to re-assume its former progressive Motion, without any Interruption. To give a Reason how the Smoking proved so beneficial in the preceding Case, we ought to take Notice, that the Tumefaction of the Gland seemed to proceed from nothing more, than an Interruption of the Motion of the salival Juice; which, as it continued to move
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forward in its excretory Duct, when it arrived at that Part of it, where its Texture had been disunited, and where it was probably obstructed by some of the most viscid Parts of the stagnated Matter, which adhered closely to the internal Sides of the Duct; it must necessarily embarrass the Passage of those Particles which came behind them. From hence, as the Obstruction in this Part of the Duct could not at first hinder the regular Separation of this Juice in the Gland, its minute Vessels must be necessarily so distended, as to occasion such an Enlargement of its Dimensions. Now no sooner had the Patient accustomed himself to this Method of taking Tobacco, but some of the most volatile Particles of the Smoke insinuated themselves into the excretory Duct, where they soon divided the firm Cohesion of the most viscid Parts of the imprisoned Matter, and disposed it to re-assume its ordinary Course. It has been observed by some Authors, that Wounds of the Cheeks have been sometimes succeeded by an Emission of a limpid Juice, more especially in any Action of the lower Jaw, which has created no small Trouble and Inconvenience: But this never happens, unless this Duct be divided, or one of those which contribute to its Formation. The Case is taken Notice of by *Fabr. ab Aquapendente; Opera Chirur. Lib. ii. Pag. 108.* Where speaking of Wounds of the Cheeks,
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he expreffes himfelf thus: *Quotiescunque vulnera prope aures contingunt, glutinantur modo propofito; fed verſus aurem foraminulum anguſtiſſimum, vix oculis conſpicuum, apparet, per quod, potiffimum ubi patientes mandunt, tanta copia exit limpidæ aquæ, quæ eſt veluti lacryma ab oculis emiſſa, et durat aliquando unum, aliquando duos menſes. Unde, et quomodo effluat, ego certe nescio*.*

* Whenever theſe Wounds happen near the Ears, they are healed in the Manner propoſed: But there appears a very ſmall Hole towards the Ear, ſcarcely perceptible to the Sight, thro' which, eſpecially when the Patients eat, iſſues a great Quantity of limpid Water, reſembling Tears; and this Diſcharge continues ſometimes one Month, and ſometimes two. Whence and how this Fluxion proceeds, I own myſelf ignorant.

OBSERVATION X.

Of a Defect in Swallowing, which attended a Distention of the Fore-part of the Neck.

A BOY about 12 Years of Age, by I know not what Means, unhappily fell from a considerable Height, and violently distended the Fore-part of his Neck, which he was soon after sensible was succeeded by a Defect in Swallowing. The Boy being carried to a neighbouring Apothecary, he ordered him a Blister to be applied on the Nape of his Neck; but this not giving entire Satisfaction to his Relations, he was committed to the Care of another Person, who, on Examination of the Parts, after some Time observed that a slight Compression on the *Musculi Sterno-hyoidei*, occasioned an almost insufferable Pain, and that the other Parts of the Neck

were in a great measure exempt from it. Upon a due Consideration of these Things, he thought he might very easily account for the Defect in Swallowing; whereupon he immediately directed the disordered Parts to be embrocated with *Galbarat. Paracels.* which was repeated two or three Times a Day, for two Days; at the End of which, that Inconvenience which attended his Eating, was effectually removed, and the Boy continued well, without the Use of any other Means.

REMARKS.

AMONG the many and instructive Studies to which we ought to employ ourselves, for the better understanding the admirable Contrivance of the Author of the Animal Oeconomy, the Contemplation on the natural Functions of an Animal Body, seems to be one of the most necessary; for, from hence it is we can only expect a true Notion how such and such Parts act for the Preservation of each Individual; and this consequently leads us into a Consideration of those Things, which, by confounding the Springs of this curious Machine, are capable of destroying that well-established regular Order: For since the Disposition and Contrivance of each particular Part, is such as seems to be formed either for the Preservation of the Animal, or Propagation of the Species, a slight Disorder of any Part, must, in some measure, necessarily incommode the Whole. Thus, to instance only in our above-mentioned Case, where the Muscles, whose Office it was to pull down the *Os Hyoides*, and Root of the Tongue, were preternaturally distended, a Defect in Swallowing ensued, which, had it not been suddenly removed, must have necessarily occasioned an universal Disorder. Now, after the Aliment is sufficiently comminuted by the *Dentes Molares*, its Conveyance down the *Gula* to the Stomach, must be assisted by the Action of

several Muscles, which are conveniently situated for this Purpose; as those of the Tongue, *Os Hyoides*, *Fauces*, and *Oesophagus*; all which, by performing their several Actions of elevating some Parts, and depressing others, very much contribute to it: But the pulling down the *Os Hyoides* and Root of the Tongue, chiefly depending on the *Mus. Sterno-hyoides*, that the Aliment might be the more commodiously protruded over the *Epiglottis* into the *Gula*, could not be performed but with a great deal of Difficulty, by reason these Muscles had suffered so great an Extension: From hence this Faculty became necessarily depraved. The most methodical Way to effect a Cure in such a Case as this is, must be certainly owned to be that which is capable of recovering the Tone of the distended Fibres of the Muscles; because they are at once disposed to re-assume their natural State, by retrieving them from their former Indispositions. This was very well accomplished, by the Remedy mentioned in the Relation of this History; which, as it consisted of Particles, which were capable of insinuating themselves thro' the Pores of the Part, and constringing the extended Fibres by its astringent Quality, we might very well suppose it proper for producing such an Effect.

OBSERVATION XI.

Of a Ganglion on the Back of the Hand.

A GIRL about 13 Years of Age, had, for near a Twelvemonth, complained of a hard painful Tumour, much about the Bigness of a large Hazel Nut, which was situated on the *Metacarpus* of her left Hand. This she first discovered soon after a violent Distension of the Part, which a little before she had procured, by endeavouring to lift a heavy Weight: In the mean Time the Colour of the Skin did not suffer the least Alteration; tho' the frequent acute intermitting Pains, with which she was afflicted in the Part, incommoded her for doing any Business with that Hand. Means had been made Use of for some Time to discuss the Tumour; among other Things, was applied that-so-

much-celebrated Plaister *de Ran. cum Mercur.* but without Success; whereupon an Instrument was procured, which was framed of Box, somewhat resembling a *Ferula*, in the Head of which was contained a Quantity of Metal, which made it the more ponderous. With this the Tumour was struck two pretty smart Blows, which caused it to subside in a great Measure immediately. After which, by the Application of *Emp. Diach. cum Gum.* and good Bandage, it was perfectly dissolved in a short Time.

REMARKS.

THESE are scarce any Tumours which affect a Human Body, that have caused so many unnecessary Divisions among our Writers, as this we have been now speaking of; especially when they have endeavoured to adjust its true Cause. However, since they are frequently the Consequents of violent Distensions, it may be necessary we give an Account how the Distension of a Part is capable of producing such an Effect. In order to account for this Phœnomenon, let us observe that when the Tendon of any Muscle is extended to a preternatural Degree, some of the Fibres of which it is composed, may be probably distorted or broken. Now seeing these are according to our Notion, capable of producing what is generally termed a *Ganglion*, we shall endeavour to explain the Method of its Formation from each. If the Fibres are only distorted, the Motion of the fluid Particles, which usually part those minute Channels, must be consequently interrupted, which stagnating in the Tendon, will necessarily embarrass the Passage of those Particles which come behind them, by which Means the Fibres are obliged to recede laterally, and the Dimensions of the Tendon in that Place must be so enlarged as to form a Tumour; but if the Distension should cause a Dissolution of the Continuity of any of the Fibres of the Tendon, the homogenous fluid Par-

ticles which they contain, must consequently discharge themselves from the Orifices of the Fibres, when they arrive at that Part where their unity is dissolved, and there stagnate, till being propelled by Particles of the same Nature coming behind them, they must considerably enlarge the Diameter of the Tendon in that Place, by obliging those parallel Fibres to separate from the other, till its common investing Membrane is not capable of any farther Extension. Then it is the Tumour is observed to continue in the same State, without any visible Increase, the Fluid being confined to such a Cavity, as is easily capable of resisting its lateral Pressure: However the Dimensions may be so far enlarged, as to elevate the common Teguments, in that Place, above the Surface of the contiguous Parts, and so occasion such a Tumour as we have been speaking of,

OBSERVATION XII.

Of a Gangrene of the Foot and Leg.

A MAN about 30 Years of Age, after having been for a considerable Time exposed to the Violence of a Northern Air, was seized with an unusual pricking Pain in one of his Feet: This was soon after succeeded by a very large Tumour, which extended itself all along the Leg to the Knee. The Colour of the Part seemed to be somewhat pale, which was here and there interspersed with reddish Streaks. The Pain he at first felt, beginning now to be more remiss, an intense Coldness and *Stupor* affected all the tumefied Parts. In this Condition he continued a Day or two without any Relief; during which Time, his Leg and Foot became in some Places perfectly livid. Whereupon, after Scarification, which

was

was performed in order to disengage some of the stagnated Juices, and give free Liberty for the Medicines to operate; the Parts were fomented with a very strong Decoction of such Ingredients as were qualified for removing Obstructions, and recovering in some measure the Heat of the Parts. After this had been for some Time continued, the Scarifications were dressed with a Solution of *Egyptiac* in *S. V.* made very hot, over which was applied a warm Cataplasm, sufficiently large to encompass the whole Member. In the mean Time Internals were not omitted, which were capable of removing those feverish Symptoms which attended him, and reviving the depressed State of his Spirits. The same Method of Dressing was continued to the third Day, at which Time the Tumour appearing considerably subsided, the Scarifications were dressed with equal Parts of *S. V.* and

and *Ol. Terebinth.* On the fifth Day there was an Apostumation discovered itself on the Inside of the Leg, which being opened, a considerable Quantity of Matter discharged itself. After this had been digested with proper Medicines, which promoted large Suppurations, the better to relieve the Part from those stagnated Juices, which in some measure hindered the Influx of the Blood and Spirits, it was deterged with *Tinct. Myrrhæ et Mel. Ros.* However, during the Use of these Means, there were several small Apostumations arose; some of which being opened, were cured by superficial Applications. Others, which by the corrosive Quality of the Matter, were become sinuous, would not be cured without the Use of a proper Injection, which, by removing those viscid Particles of the Matter that firmly adhered to the internal Sides of the Abscess, soon disposed them
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to a Re-union, which was very well effected, by applying convenient Compresses.

Thus was this poor Man, who had undergone such a Fatigue during his Indisposition, perfectly recovered in less than two Months.

REMARKS.

IT is a certain Modification of the Blood, that gives it its Heat and Fluidity. In order to give a rational Account how any Extremity of Cold proves the efficient Cause of a Gangrene, it may be requisite we make first some Remarks on those Particles on which the Life of the Parts seem intirely to depend; because it will inable us to account for several Phænomena which must necessarily occur in such Discourse. Now were we positive the Hypothesis of the vital Flame would pass without Censure, it would be almost sufficient to engage us to comply with it, by reason it would afford us such happy Resolutions of several abstruse Appearances. However, since we are not well assured there is any such Thing actually existent in an animal Body, we shall confine ourselves to the Consideration of the intestine Motion and Presence of the Principles of the Blood, which we are assured are sufficient to maintain the Heat and Life of all the Parts of the Body. This intestine Motion, or perpetual Agitation of the Particles of the Blood, seems to be so necessary for the Continuance of that regular Order established by the Divine Architect, that if at any Time it begins to be suppressed, the Part gradually loses its Heat and Motion, till at length it is seized

seized with a Gangrene. It is, without doubt, the most subtle and volatile Particles of the Blood, which serve continually to inspire and actuate the other Parts, that by their perpetual Tendency to stagnate, would at once destroy its progressive Motion, and consequently occasion a Gangrene; for if by any Means, these active Particles of this Fluid should become so dissipated, concentered, or suppressed, as not to be capable of displaying their Influence on the other Parts, they must gradually lose their Motion, and become a heavy unactive Mass. This is evident from the Gangrenes which are occasioned by the Extremity of cold Air, where the Parts no sooner suffer the first Attacks by the frigorific Particles, but the most spirituous Parts of the Blood retire, during which they must necessarily affect the nervous Parts, which may occasion those pricking Pains the Person is at first sensible of. At the same Time the nitro-aerial Particles, which insinuate themselves thro' the Pores of the Part, are easily capable of fixing the unactive Fluid, which is at this Time deserted by the most spirituous Parts: By this Means the Blood having lost all its Activity, its Passages must be necessarily so embarrassed, as to deny the Admission of any more of this Fluid; from whence the Part soon suffers a Diminution of Sense and Motion, which is succeeded by a Gangrene. And this, if a sudden Stop be put to its Progress, usually terminates in a Mortification, as the last

Actor

Actor in the Tragedy. These Mortifications are most frequent in the Northern Regions, where poor People, by some Casualties, have been exposed to the cold Air, which always first effects the Extremities, as the Hands, Feet, &c. From what has been premised, we may observe that all animal Bodies, whose Substance abounds with Fluids, and those contain a proportionable Quantity of volatile spirituous Particles, while they remain intimately mixed one with the other, the Fluids are defended from the Action of any frigorific Particles. Thus the Blood in a human Body receives no Injury from the cold Air, so long as it is invigorated with its active spirituous Parts, which maintain its Fluidity, and by which Means a continued Circulation is carried on. But when these Particles, by the Extremity of cold Air, are concentrated, (the Vessels and Teguments of the Parts not being sufficient to defend them from its Action) the Blood remains in the Vessels as an heavy unactive Mass, the Part gradually loses its Sense and Motion, and at length mortifies. For the same Reason, fermenting Liquors, which contain a proportionable Quantity of spirituous Parts, are not congealed by Cold, so long as those Parts display their Activity, by maintaining a continued Fermentation: But when this begins to remit, it lies liable to the Injuries of the cold Air, which obliges its more spirituous Parts to retire to the Center, while the other Part, which is nothing more than an insipid Phlegm, is
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consequently congealed. This is confirmed by a notorious Instance (mentioned by Dr. *Sympton*) of some *Hollanders*, who fishing for Whales in the Northern Seas, had their Wines all frozen by the Extremity of Cold. The Hoops being taken off, and their Wines uncasked, they were found congealed into Ice, which retained the Form of the Vessels the Wines were put in. This Ice they perforated, and found about its Center a little Liquor of an Amethyst-Colour, which was the pure balsamick Spirits of Wine concentered, and therefore incapable of being congealed. A Dissolution of the Body of Ice by Heat, proved it to be nothing more than an insipid Phlegm or mere Water of Wine. The same Author relates the History of a Man, who being drunk at a Country Town, in returning home, his Partner left him on a Bridge, where, exposed to the cold Frost upon the hard Stones, he had his Lodging that Night. The next Morning he was found alive; but his Hands and Feet (the most remote Parts from the Fort of vital Heat, the Heart) were absolutely mortified; grew black as Pitch, and were never reducible to Life or vital Heat again; and therefore were cut off. His Remarkson it are, "That it is probable if the Man had not been drunk, the Cold would absolutely have killed him; but the Spirits of the Liquor fortified the vital Spirits against the total Subversion thereof by Cold. It is observable, that those Mortifications which succeed any

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Plaisters, when they have been applied to the Legs of Hydropic Persons, to discharge the extravasated Serum. In order to account for this Phenomenon, let us observe, that the Blood in such Cases is nothing more than an indigested languid Mass, diluted and liquified with a vast Quantity of Serosities, which disengage themselves from the Mass of Blood, and stagnate in those Parts, and so consequently compress those Vessels whose Office it was to impart a sufficient Quantity of spiritous Particles (if the Mass of Blood had been capable of furnishing them) to invigorate and animate the Parts, for which reason they lie very liable to be assaulted by a Gangrene as soon as any inconsiderable Cause offers itself. Thus a Blistering Plaister may cause it, by the Action of the caustic Salt of the Cantharides, which we conceive in such a Case does not a little contribute to produce such an Effect.

OBSERVATION XIII.

*Of a Tumour which succeeded the Use
of the Cold-Bath.*

A Young Lad about 15 Years of Age, by the Fall of one of the Masts of a Ship, received a violent Blow on the upper Part of his Shoulder, by which in a short Time he was totally deprived of the Use of that Arm and Hand; soon after (the useless Arm not being confined to a Sling) by its pendulous Posture, occasioned so great a Relaxation of the Ligaments and Tendons of the Muscles, which connect the upper Part of the *Os Humeri* to the *Scapula*, that the round Head of the upper Appendix of the former Bone seemed to be at least half an Inch below the *Sinus* of the short Process of the latter: During the Use of strengthening Plaisters to the Joint, the Bone was often replaced with all the Ease imaginable; but to retain it

there required a great deal of Judgment; however, to accomplish it, the Arm was kept suspended for a considerable Time together in a Scarf, by which Means the Head of the Bone seemed to be confined to its proper Seat, and the Ligaments and Tendons of the Muscles were freed from the Weight which before kept them continually extended: But this Attempt not succeeding, he was ordered to make use of the Cold-Bath, in Hopes it might relieve him, by corroborating some of the disordered Parts, and recovering the natural Tone of the relaxed Fibres. This was continued for some Time, but without its desired Effect, tho' it occasioned a Swelling, (as we have several Times observed) which arose on the Inside of the Arm a little above the Elbow. After some Time, Part of the Matter which it contained, that was most fluid, discharged itself by a small Apertion it made thro' the Teguments; the remaining Part, which was of a thicker
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Consistence, continuing till the Abscess was laid open by Incision. The first Dressing consisted of dry Dossils only, to absorb the superfluous Humidity; after which the usual Method in such Cases was made use of, till it was perfectly cured, which was in about 3 Weeks Time. Some Time after the Arm impostumated again, became finous, and at length tended to mortify, which gave the Surgeon sufficient Encouragement to amputate it, which being done, he was successfully cured, and so continued well.

REMARKS.

AMONG the various Instances of the surprizing Successes which have been effected by the Use of the Cold-Bath in the most obstinate Diseases, we have frequently observed that after its Use has been continued for some Time, a Tumour has arose on some Part of the Body, which tho' frequently confined to a diseased Part, yet we have sometimes known it to arise where the Person has not been sensible of the least Disorder. By the Matter which has been discharged from these Tumours we may reasonably suppose them to be formed by the gradual Assemblage of certain viscid Particles, which when united seem to form a Matter of a pretty uneven Texture. This tho' we have for some Time proposed to analyse, yet we have never had Conveniency to effect, for which Reason we cannot give so satisfactory an Account of its Principles, notwithstanding we may reasonably suppose them to be such as by their Union may form a pretty weighty Fluid; but how this should happen to be separated from the Mass of Blood, and deposited in some particular Part a such at Time, is what we fear requires more Philosophy than we are Masters of: However, as we have That on our Side which we hope is sufficient to protect us from Censure, we shall attempt it. In order to succeed

in this difficult Enquiry, we ought first to examine what immediate Effect the cold Water has on our Bodies: Now, beside the Disorder it occasions in the Spirits immediately on the Immersion, it certainly constipates all the Pores of the Body, and by its lateral Pressure, lessens the Dimensions of each particular Part, whose Diameter is chiefly owing to Fibres that are continually kept distended by proper Fluids; for at the same Time the Body is contained in the Water, as its Pressure is greater on the Surface of all the Parts than that of the external Air before, so it must necessarily compress the Fluids, as they abound with Air, into a less Compass. Now after the Fluids are exempt from this violent Pressure, by the Body's being removed out of the Water, the springy Particles of the Air, which are intimately mixed therewith, are capable of exerting their Elasticity, and expanding all the Parts of the Fluid till the Sides of the Vessels recede to their former Diameters, or the internal Air is come to an Equilibrium with the External. By this Means we may reasonably conceive, that those Particles whose Magnitude or Figure render'd them incapable of a mutual Correspondence with the Particles of the Blood, during its Pressure, were obliged to assemble themselves together, and so form larger Corpuscles, which by reason of their Weight, were not capable of being buoyed up by that Fluid, but were gradually disengaged from it, and precipitated into that Part, which thro' a Disorder was most

capable of receiving them; tho' if there be not any particular Part of the Body that suffers at that Time more than another, Nature without doubt expels it to that Place where it may be the most commodiously discharged. Now, notwithstanding it may be possible to give a mechanical Account how the above-mentioned Bath is capable of removing several Diseases to which a human Body is liable; yet we may reasonably suppose the Disorders it occasions in the Spirits, on the sudden Immersion of infirm Bodies, does not a little contribute to the Removal of some: Add to this the Dread, Terror, and Affrightment wherewith it affects the Mind, and by which Means Nature is excited to act more violently in resisting That, which by being so very disagreeable might produce some corporeal Damage. It is for this Reason asserted, that timorous and over-tender People receive the greatest Benefit, especially in Palsies, and some other Cases.

OBSERVATION XIV.

A Man about 50 Years of Age had for a considerable Time been incommoded in his Business, by reason of an apparent Defect in his right Thumb, which when required to be extended with its Point against any Object of his Touch, it was immediately involuntarily contracted, which forced him to retain, what his then present Necessity obliged him to, betwixt the first Joint of the Thumb and the Fore-finger. This Inconvenience was at first probably caused by a violent Contortion of the *Mus. extensor. tertii in ternodii pollicis*, by a Gripe by the Hand of a strong Man, on the outward Part of the Arm below the Elbow. The several Persons attributed it to the putting his Hand alternately into hot and cold Water, his Business being such (as he was a Barber) as required it; the Means he had made Use of for the remedying
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this Disorder, were almost as various as the Persons by whom prescribed, notwithstanding which he received no Relief from any: This caused him to fear the true Use of the Part was irrecoverably lost; however, a Reflection on what seemed to be the most probable Cause of this Inconvenience, was sufficient to authorise the attempting it, seeing among the great Variety of Medicines he had made use of, as they were oleous or unctuous in themselves, or consisted chiefly of such Ingredients, there was not one which was capable of effecting a Cure; which consisted only in removing the Obstructions of the Fibres of the disordered Muscles, and recovering their natural Tone, which the former Medicines did but the more relax; whereupon he was advised to hold his Arm and that Part where he was sensible of the greatest Disorder over the Vapour of *S. V.* when fired, once a Day, and to continue it for several Days successively; but the Person's Business being

being such as during the Use of Means obliged him to be some Miles distant from his Surgeon, this Attempt did not succeed so well as might have been otherwise expected.

We lately saw a Man who had a violent Blow given him on the Back of his Hand, which bruised the Extensor of his middle Finger. From that Time the Finger could never be sufficiently extended, but the contracting Tendon appeared hard and ridged on the Inside of the Hand.

REMARKS.

AMONG the many Advantages which a judicious Person may receive, in order to render him capable of curing Diseases, there is certainly nothing of greater Importance than a true Idea of their Causes; for, without doubt, he who endeavours to remove the most insignificant Disorder to which a human Body is liable, without acquainting himself with the Etiology, must either fail in his Attempt, or if it succeeds according to his Desire, be incapable of giving a satisfactory Reason for his Practice: This it is which is certainly sufficient to influence all ingenuously disposed *Tyros* in this Art to the Study of this Particular, as it is the Basis and Foundation on which a regular Practice is to be established. Thus as the Contortion, which occasioned a violent Distension of the Fibres of the Muscle in the preceding Case, seemed to be the most probable Cause of the Disorder, the Artist thought himself sufficiently authorised to prescribe those Means which were capable of removing Obstructions, and constringing the relaxed Fibres. Now that a Contortion, or Distension, of this Muscle should produce such an Effect, is very reasonable to suppose; for as it was then in some Measure deprived of the Power of contracting itself, sufficiently to oppose the natural Force of its Anta-

Antagonist, the Top of the Thumb when fixed against any Subject, could not be kept as it were in an Equilibrium, but must be necessarily drawn down, the Force of the extending Muscle not bearing a Proportion to that of the contracting.

The Practice of Surgery affords us sometimes Instances of the Inconvenience of the Relaxation of one Muscle, which necessarily occasions a Contraction of its Antagonist; but this is in no Case more apparent than in that which is generally termed a wry Neck; where a Relaxation by Means of a Palsy, or otherwise, of one of the *Mus. Mastoidei*, gives Liberty to its Antagonist to contract itself, by which Means the Head is drawn to one Side: Now if it continues for some Time, the Fibres of the contracted Muscle not being capable of being extended by that which is relaxed, assume a Rigidity and Stiffness, which is the Reason it is generally intitled to the efficient Cause of this Disorder.

III CHIRURGICAL

OBSERVATION XV.

Of a Sphacelated-Face, after the Measles.

A CHILD about 3 Years of Age, without any preceding Indisposition, was attacked with some of the usual Symptoms of the Measles, which on the Eruption began to remit. On Recovery from this Distemper, it was seized with an Inflammation of the right Cheek, Lips, and internal Parts of the Mouth, which by its gradual Increase, at length terminated in a Mortification. This first discovered itself externally, by a black Spot near the right Corner of the Mouth, tho' at the same Time some of the internal Parts of the Mouth were perfectly mortified, but had remained undiscovered till it appeared externally. Those Parts which were already mortified, and likewise those that tended thereto,

thereto, were scarified, and dressed with the following Mixture hot, often in a Day, *R. S. V. ℥iij. Ther. Venet. ℥jm.* The Parts were likewise often fomented with this following. *R. Summitat. Absinth. mij. Hiperic. Scord. Centaur. Flor. Camæmil. ana. mj. coq. in aq. q. s. f. fatus. adde S. V. q. s.* but these Means proved unsuccessful, for the Mortification continually increased, and such was the Progress it made, that those Parts which were gradually attacked, by the next Day became perfectly rotten, stinking, and cadaverous. Most of the sphacelated Flesh being cut away, the remaining Part was cauterized, which was reiterated several Times, till the Child, by its Strugglings, made it appear that it affected the sensible Parts. Notwithstanding all this, the Sphacelus extended itself almost over the whole right Side of the Face, consumed most of the internal Parts of the Mouth, and rotted the upper and lower Jaw-Bones, all which Parts continually emitted
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such a foetid *Synonia*, that the whole Room was infected with its offensive Miasms: In short, this miserable Object died on the seventh Day, reckoning from the first Day the Inflammation commenced.

REMARKS.

FROM what has been related in the preceding History, we may reasonably infer, that the Measles were but an Effect of the spontaneous Endeavours of Nature to purify the Mass of Blood from those Particles, which by residing in the Body, were prejudicial to its Oeconomy. Now these Particles, which were probably of the volatile alkaline Family, were first conveyed into the Body thro' the cuticular Pores, or received by reiterated Inspirations; which when they had insinuated themselves into the Mass of Blood, soon destroyed the due Proportion of its Parts, confounded the Cohesion of its Particles, and gave Original to a vicious Fermentation. This violent Commotion and Confusion of the Principles of the Blood excited that internal Agent, Nature, to evacuate the offending Matter. Part of this was expelled to the Surface of the Body, and occasion'd those little red Spots termed the Measles. Soon after these cuticular Eruptions, the Symptoms began to remit, and the Child seemed to be in a fair Way of Recovery; till the remaining disproportionable Salts were precipitated into those fungous soft Parts, and there being continually diluted, with such a Quantity of the Fluid secreted by the salival Glands, they were made capable of diffusing
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themselves through the internal Parts of the Mouth; where by the Briskness of their Action, which was favoured by the lax Texture of the Parts, they soon corrupted the natural Juices, which like a corrosive *Menstruum*, corroded, and as it were, cauterised the Flesh and the Vessels, and rotted the very Bones. It is nothing more than the Action of a corrosive lixivious Salt, that causes the quick Progress of some Gangrenes; so that in some Cases, a Part shall be intirely mortified in a Day and Night's Time, by the Action of these Salts. We likewise suppose the Cause of the sudden Mortification of a Carbuncle, and Parts continuous, may be accounted for, without having Recourse to a malign or occult Quality. It is certain, that by mixing a proper Quantity of such Salts with a convenient Fluid, and artificial corrosive Dissolvent may be composed, which shall have such an Effect as that abovementioned; so that the Corruption of a Part in such Cases seems entirely to depend on the Action of the saline Particles, which by destroying the natural State of the Juices, disposes the Parts to grow black, fœtid, and attain the highest Degree of Corruption. And of this Opinion does the illustrious *Etmuller* seem to be, where speaking of Gangrenes, he expresses himself thus: *Acida corrosiva non inducunt nigredinem mortificantem: Acria, viz. lixivialia omnimodum partis mortificationem & nigredinem inducunt, quæ subinde ulterius proserpit dolore ardente; id quod similiter fit in carbunculo, ubi etiam talis subitanda*

*tanda nigredo & mortificatio.** One might have thought that the reiterated Application of the actual Cauteries, with those Means that were made use of, might have been sufficient to put a Stop to the Progress of the Mortification: But Experience has made it most certain when it happens in such soft fungous Parts. Sometimes it is not to be overcome by Cauteries or any other Means. There is a very celebrated Author that very much recommends the actual Cautey in such Cases. *Hanc prærogativam cauterium habet (says he) quod id, quod corruptum est, combustione auferendo, reliquam partem sanam exsiccat, corroborat, & putredini ineptam reddat: Adeo ut non tantum, quod nunc corruptum est, sed etiam id, quod successive corrumpi posset, a putredine vindicet, totam putredinis auferat radicem.† Thom. Fienus, lib. 1. cap. 8. de Caut.*

* Acid Corrosives do not produce a Mortification: Sharp lixivious Salts intirely promote one, which gradually extends through the Violence of the Pain: This is what happens in a Carbuncle, where sometimes the Mortification is sudden.

† The Cautey has this excellent Property, that in burning away what is corrupted, it dries and corroborates the sound Part, and renders it unapt to putrify: So that it saves from Putrifaction not only what is now corrupted, but what might corrupt hereafter, by removing the very Cause of such Putrifaction.

OBSERVATION XVI.

A M A N of about 30 Years of Age, soon after a violent Attempt to lift a heavy Burden, became very much indisposed with an unusual Pain in his left Side, Spitting of Blood, and Difficulty in Breathing; some Time after a Tumour discovered itself on the left Side of his Neck, which at certain Intervals, as the Wane of the Moon, almost wholly disappeared. In the mean time he made use of several Physicians Prescriptions, but with very little Relief: At length he became asthmatic to such a Degree, that he was not capable of breathing, unless he sat upright in his Bed, or continued standing or walking. About this Time likewise the Tumour in his Throat increased very considerably, and in a few Days the Patient died, as it were perfectly suffocated. On a Division of the Teguments, to discover

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ver the Rise of that Tumour in his Throat, it at first appeared to be a Cyst filled with coagulated Blood, which induced some to believe it was an *Aneurism*; but in prosecuting its Examination, Part of it was discovered to pass underneath the left Clavicle; whereupon the *Thorax* being laid open to trace it to its Original, the last Lobe of the Lungs, or rather its investing Membrane (there being scarce the least Footsteps of its proper Substance remaining) was found so vastly dilated with coagulated Blood and a little *Pus*, that it filled almost the whole Capacity of the Breast: Part of this prodigious Mass had forced its Way underneath the left Clavicle, and produced that Tumour in the Neck: Beside this, we observed the right Auricle of the Heart and Ventricle, with the *Arteria Pulmonaris*, to be very considerably dilated, and a small Quantity of limpid Water lodged on the *Diaphragma*.

REMARKS.

IT is certain, that during that Interim of Time a Person endeavours to lift a heavy Burden, he at first draws in a sufficient Quantity of Air to inflate the Lungs considerably; and so long as he continues the Attempt, expires but very little. By this Means the pulmonary Vesicles continuing to be inflated, the Artery and Vein, in conformity to the *Bronchi*, must be necessarily extended and divaricated, which must both lengthen and enlarge their Cavities: Now, as the Inspiration is at this Time continued longer than ordinarily, a great Quantity of Blood must be conveyed from the Heart through the *Arteria Pulmonaris* into the Lungs, which not receiving its usual Compressure in the Veins, by the Subsidence of the Lungs, to force it to the left Ventricle of the Heart, Expiration being for some Time suspended, it must unavoidably so enlarge the Diameters of the Blood Vessels, as to render the Lungs incapable of performing their Office regularly afterwards. This in the abovementioned History, was confined to one Lobe of the Lungs only, where, as we have intimated, the Motion of the Blood being necessarily interrupted, it must unavoidably embarrass the Passage of those Parts which come behind it; from hence the Vessels were so distended, as to occasion a Division of their Coats: This being
 so,

so, after the Person expired, the Blood, which disengaged itself from its Vessels, must so alter the Tone of this Lobe of the Lungs, by compressing some of the *Vesiculæ Aeriæ*, as to indispose it for a regular Expansion; from whence it must unavoidably occasion an asthmatic Indisposition. Now, as the Quantity of Blood which was conveyed into this Lobe of the Lungs, was, for some time after the Commencement of this Disorder, almost equal to the Quantity which continued its Course through the other Lobe, its whole Substance after some time must be little less than a prodigious Heap of coagulated Blood, which in our History we have observed to be confined to the distended Membrane, though some Part of it, whose putrefactive Principles were set at Liberty, had assumed the Form of a whitish coloured *Pus*, and in Process of Time, it would probably have all assumed the same Consistence and Colour. That which next offered itself in prosecuting our Examination of the Parts, was the dilated Auricle, Ventricle, and Vessel, which we shall endeavour to prove, was necessarily a Consequent of the former; for after the investing Membrane of the left Lobe of the Lungs became so distended as to be incapable of admitting any additional flowing Matter, the other Lobe was not capable of opening a Passage sufficient for all the Blood which was expelled from the right Ventricle of the Heart; for which Reason its Velocity must be necessarily impeded in those Parts,

which considering the Force of the Blood, must be certainly sufficient to oblige any one to believe it was capable of enlarging their Diameters. The same Inconvenience we have sometimes had the Opportunity to observe in dissecting those morbid Bodies in whom some Time before Death that Complex Action of Respiration was performed with Difficulty. Now it is certain, in order to the Passage of the usual Quantity of Blood through the Lungs, they should be inflated as much as naturally; but on the contrary, in those that are afflicted with asthmatic Indispositions, &c. the Enlargement of the Cavity of the Breast being but inconsiderable, the Quantity of Air admitted into the Lungs must be but little, seeing it always bears a Proportion to the greater or lesser Dilatation of the Breast: From hence, that large Quantity of Blood, which was determined to pass through the Lungs, must meet with some Obstruction in its Passage, by reason of the Folds and Corrugations of the Vessels, which must necessarily happen when the Lungs are not sufficiently expanded. This Interruption of the Motion of the Blood in these Parts, we have already proved to be sufficient to occasion the Enlargement of the Diameters of those Parts we have taken notice of; the Water in the Breast of this Person is what we almost always observe in dissecting those Bodies that die asthmatic, which we shall take Opportunity to account for elsewhere.

OBSERVATION XVII.

Of a Wound of the Head.

A MAN of about 30 Years of Age, by the Fall of a Tile from a House, received a large Wound on his Head, on which he immediately fell to the Ground, but was not attended with Vomitings as is sometimes observed in these Cases: The Wound was accompanied with a large Flux of Blood, which after the Head was shaved, and the Wound cleansed, was effectually stopped by the applying a small hard Dossil of Lint to the Mouth of the divided Artery. This, by its Compressure, so resisted the Impulse of the arterial Blood, as to deny its Effusion. The remaining Part of the Wound was filled with dry Lint, over which was applied a Plaister, and the continuous Parts were embrocated with *Ol. Ros.* After which a convenient

ent Compress and Bandage was applied. Bleeding was at that Time omitted, in Consideration of the Quantity lost by the Wound. The next Day the Dressings being removed, the *Cranium* was discovered to be divested of its Teguments about the Breadth of a Sixpence; which Part of the Bone was covered with dry Lint to absorb the Matter, and the contused Lips were dressed with this following. *R. Terebinth. Venet. Part 1. Balsam Arcei. Part 2. m.* Over the whole Head was applied *Emp. è Cym.* through which there was a Hole cut for the more commodious Application of each Dressing to the Wound. Care was taken that at the Removal of every Dressing, there was immediately applied a Stupe wrung out of a Decoction of proper Herbs, not only to prevent the Access of Air to the Wound, but likewise to relieve the contused Lips. The second Night a Clyster was prescribed, and the following Paregoric Draught: *R. Aq. Lact. Alex.*

Alex. ℥ii. *Ceras. Nig.* ℥i. *Syr. è Mecon.* ℥vi. *m.* This somewhat moderated the Hurry and Disorder of the Spirits, and procured him a little Sleep. The Method in Dressing was not in the least varied till the fifth Day, at which Time the Wound seemed sufficiently digested, the Bone retaining its Colour, without the least Alteration; whereupon it was still covered with dry Lint; but the Wound was dressed with *Tinct. Myrr.* over which was applied Plaister, Compress, and Bandage, as before. This Method was continued to the tenth Day, at which Time the Bone appeared perfectly re-invested with new Flesh, and in a few Days more the Wound was sufficiently incarnated; so that by the only Application of dry Lint, and a Plaister, it was brought to a firm Cicatrix.

REMARKS.

IT has been the frequent Custom of many Surgeons, especially those of the antientest Date, as soon as any Part of the *Cranium* has been divested of its Teguments, either to rasp the Bone, to give way to the small Vessels to supply it with fit Matter for the Generation of Flesh, or to keep the Wound open till the Bone exfoliated. This Practice was so successful, as to proselyte the Opinions of several of the Moderns, who firmly maintained it, and endeavoured to extricate themselves from some of the greatest Difficulties their Cotemporaries had alledged against it. However, Experience makes it evident, that notwithstanding the Custom of the Antients (to whom we pay all just Deference) treating Wounds of the Head after their Method renders the Cure much more tedious, difficult, and uncertain; it is for this Reason most Artists at this Time solely confine their Intentions to the preventing the Alteration of the Bone, and accelerating the Incarnation of the Wound as soon as possible; to defend the Surface of the Bone from the Action of any aerial saline Particles, or those which may be contained in the Matter. Mr. *Belloste* has within these few Years ushered into the World a small Treatise, wherein he informs us of a Way to prevent the Exfoliation of discovered Bones, if they have received no Alteration; this he assures us he performs by
piercing

piercing the Bone in several Places with the Pyramid of a Trepan; that so a Way might be given (says he) to the marrowy Juice, which thickening upon it, covers over the Bone in a little Time. Probably, that Gentleman might have good Assurance for what he advanced as to that Point; and had our Attempt been succeeded by so sudden and prosperous Effects, we should have had no Room left to doubt of the Integrity of the Author's Assertion. If but a small Portion of the Bone be discovered, it may be dressed with dry Lint till it is re-invested with new Flesh; for this not only absorbs the undigested Matter for the first 3 or 4 Days; which if it were permitted to lodge on the Bone, if it partake of any corrosive Quality, would undoubtedly cause an Alteration of it; but likewise very much contributes to the preventing the Increase of fungous Flesh. It is observable, that if the Air has a free Access to the Bone by its being long and often exposed, the saline Particles with which it abounds, do not fail to fix themselves on the Surface of the Bone, and so corrupt it. That the Air abounds with saline Corpuscles is most certain; but why they should be mostly supposed to be of a nitrous Nature, is not easily proved; though when our Writers endeavour to explain the Cause of the Alteration or Corruption of a Bone by the Action of the Air, they have still Recourse to its nitrous Particles, as if they were the only Actors in this Case: But considering with some Gentlemen the vast Quantity of fuliginous

fuliginous Vapours that are daily produced, and which abound with a volatile alkaline Salt, the same being likewise exhaled in large Quantities from the putrified Matter of animal and vegetable Bodies, we think it reasonable to suppose, the Air abounds with Salts of this Kind more than any other. If this Opinion is granted, we shall find it no hard Matter to account for the sudden Corruption of a Bone, by exposing it to the Air; for it is certain, it is the Action of volatile or fixed alkaline Salts that causes such an Alteration in all animal Substances.

OBSER-

OBSERVATION XVIII.

AN Old Gentleman of about 60 Years of Age, had for a considerable Time been troubled with a large *Polypus*, which had its Rise from the upper Part of the Inside of his Nose; one large Branch of it was distributed to each Nostril, though the greatest Part of its Substance hung down on the *Fauces*. During the Time of its Increase, he was gradually deprived of his Hearing; so that after it had arrived to its Extent, he was not capable of receiving any Influence from the most violent Sounds, unless the Air was first strongly agitated, very near those Organs which were framed for its Reception. After some Time, the Trouble and Inconvenience it put him to, obliged him to have it extracted: This was very well effected, on which he perfectly recovered his Hearing, though those
Sounds

Sounds which violently agitated the *Tympanum*, as the Ringing of Bells, &c. were extremely troublesome to him; but what was no less surprizing, was, that on the Growth of the *Poly-*pus** a second Time, he was likewise deprived of his Hearing.

REMARKS.

SUCH is the inimitable Contrivance and Frame of the auditory Organs, which the divine Architect has seated commodiously for performing their united Office, that notwithstanding the various Advantages we have received, which relate to their Structure and Manner of being affected by proper Objects, there is still sufficient Room to admit of new Discoveries, without which the Theory in some Measure seems to be incomplete; though at the same Time the Difficulty which must necessarily occur to those Persons, who, by their Diligence, endeavour to advance it, ought not to discourage them, till by their gradual Successes they have obtained a just Idea of it. Upon this Account we thought it reasonable to take notice how far this Sense came depraved by the Imprisoning the Air in the *Meatus ad Aures*, which was occasioned by the Occlusion of their Orifices, by the abovementioned fungous Excrecence. It is true, these Instances are somewhat rare, though in the Writings of our Predecessors, we sometimes find that the *Fauces* being ulcerated, or a Tumour possessing those Parts, has been succeeded by such an Effect. Now this Passage, which extends itself from the *Fauces* to the Barrel of the *Tympanum*, as *du Verney* calls it,

is by him supposed as a Duct to convey aqueous Humours; while others have been of Opinion, it is chiefly formed for the Passage of Sounds through it to the Ears. This latter seems to be fortified by an Observation, that those Persons who hear with Difficulty, generally hold open their Mouths when they listen attentively; but still this not satisfying our Curiosity, by reason the former cannot be demonstrated, and the latter would be of Use only in those Persons that are thick of Hearing, we may reasonably suppose it is of some more extraordinary Use in the Animal Oeconomy. Now in order to frame a reasonable Judgment, what this Use is, we ought to take notice that the undulating Air being collected in the *Concha*, in order to be transmitted through the *Meatus Auditorius*, though it be somewhat impeded by the several Inequalities in the Passage; yet its Impulse on the *Membrana Tympani* must be necessarily so great, as to occasion a Convexity on its internal Surface: This must certainly communicate a Motion to the internal Air, and oblige Part of it to retire into the aforesaid *Meatus*. Now no sooner does the first Impulse of the external Air begin to remit, but the internal Air returns with a Force almost equal to that it received: By this Means the Action and Reaction of the external and internal Air is continued, which must undoubtedly occasion a Vibration of the Membrane that separates them, which is always more or less according to the Variety of Impressions made on it externally.

ternally. From these Premises, we may rationally conclude, that if the Orifices of the *Meatus ad Aures*, which open into the *Fauces*, are by any Means obstructed, the external Air is not capable of impressing any tremulous Motion on that Membrane: For the internal Air being so imprisoned, as to render it incapable of a Reflux, presses against the internal Surface of the Membrane, with a Force proportionable to resist the Pressure of the external Air; from hence those Vibrations are unaccountably prevented, and the Membrane is kept in a constant *Equilibrium*. If a Person is by any Means unhappily deprived of the external Part of the Ear, he is obliged to supply the Defect by augmenting the Concavity, with his Hand or some proper Instrument, either of which conveniently applied, may be sufficient to collect the undulating Air, in order to its Transmission through the *Meatus Auditorius*.

OBSERVATION XIX.

*Of a violent Contusion of the Fore-
Part of the Knee.*

A Man of about 30 Years of Age, by some Accident, received a violent Blow on his Knee, a little below the *Rotula*, whereby the Fibres of that Tendon which is formed by the Union of those that belong to the Extensors of the Leg, was very much discomposed. The Pain which he was at first sensible of, was very violent, which continued for some Time, though several Means were made use of to remove it. Soon after this he found it so much incommoded him in walking, that (to use his own Expression) he could not support his Body on that Leg, or draw it after him, when his Body was supported by the other. He was likewise attended with very great Difficulty in going up Stairs, or any other Ascent. After some useless Applications

plications had been continued near a Fortnight, he committed himself to the Care of a Surgeon, who on Examination of the Part, discovered that Part of the Tendon, which had been chiefly affected by the Blow, to be considerably relaxed; on which Account the *Rotula* was drawn somewhat out of its Place, by the Action of the *Rectus*, *Vastus externus*, *Vastus internus*, and *Crureus*. Beside this, by the Pressure of the Fingers, there was observed to be a gelatinous Substance lodged underneath the Tendon, which made the Part in that Place appear somewhat prominent. On a due Consideration of those Things, the Part was very well embrocated with *Galb. Paracels.* and a Plaister of 2 Parts *Paracels.* and one of *Cymin.* was applied; over which, just above the *Rotula*, was placed a Compress, with a Roller over the whole Part. The fourth Day the Plaister was removed, and all Things appearing as well as could be expected, the for-

mer Applications were continued :
These were a third Time repeated ;
after which the coagulated Juices
seeming to be pretty well dissolved,
the *Emp. Sticticum Rub.* was ap-
plied, which after some Time com-
pleted a Cure.

REMARKS.

IN order to be capable of giving a satisfactory Explication of the Accidents that attended that unhappy Blow on the Knee, we ought to reflect on the Uses of those Parts which were immediately concerned, and furnish ourselves with a competent Knowledge of their Structure : For by this Means we may solve those Difficulties, which will necessarily occur according to the established Rules of Mechanism. It is true, the human Body being looked on as a Machine which consists of several Parts, if any of them are disordered, we may easily collect which they are, by the Remissness or Non-performance of their Offices regularly ; by reason they have a mutual Dependence on each other, to maintain that agreeable Order designed by the first Mover of the Springs, the divine Architect. Now the Inconveniencies that attended the Contusion, we have shewed to be besides a violent Pain, and Congestion of a thick viscid Matter in the Part, a great Difficulty in Walking, and more especially in getting up any Ascent : As to the Pain, it was undoubtedly occasioned by the violent Stroke which caused such a Divulsion of the Fibres, as must necessarily procure a Disaffection of the Soul, and this will more evidently appear, if we do but consider that

the Soul having a particular Interest in all the Parts of the Body, if the Union of any be by any Means dissolved, the Soul must be certainly concerned, by reason the Nerves convey the Impressions they receive to it. That Congestion of a viscid Matter in the Part was in some Measure a Consequent of the Division of some of the Fibres, which then were rendered capable of giving Liberty to their Contents to disengage themselves; though we suppose that which contributed chiefly to it, was Part of that mucilaginous Liquor which before served for lubricating the Extremities of the Bones. Now the Mixture of these two Juices, we are pretty well assured, qualifies them for forming such a gelatinous Substance. It is probable, if convenient Means had not been made use of, that were capable of insinuating themselves through the Pores of the Part, and disuniting that firm Cohætion of those viscid Particles, by their long Continuance there, they might have proved of very ill Consequence, by preventing the Recovery of the Fibres to their natural Tone. But now the Embrocation that was made use of, beside dissolving that congested Matter in the Joint, was qualified for correcting the Laxity of the distended tendinous Fibres, by reason it constricted, and as it were closed up their enraged Vacuities; by which Means they were capable of expressing those Particles which were lodged in their Interstices. It is certain, that at the same Time any liquid Preparation that partakes

takes of such Qualities as that abovementioned insinuates itself into the little Cavities of the disordered Fibres, it gently forces them to moderate Contractions, and so consequently rectifies their too lax Tone; and this Faculty it must necessarily exert on those Parts, whose Exigencies are greatest, because those that retain their natural State, are not so fitted to receive, or at least be affected by them. The Difficulty in walking that was observed to ensue on the Disorder of the Parts, may be in a great Measure collected from what we are going to advance in relation to the Inconvenience the Patient was sensible of, in endeavouring to get up any Ascent. Now in order to succeed in the Enquiry of this difficult Phænomenon, we ought to remark, that all such Motions of the Body, and some others, seeming chiefly to depend on the Action of the Extensors of the Leg, if these Muscles are so disordered, as to act with a great deal of Difficulty, the Person must be sensible of a very great Inconvenience during the Time he attempts to put the in such a Motion. This is made evident by taking notice, that when we place one of our Feet on a Step in order to ascend it, the Leg being then in a contracted State, those Muscles we just now mentioned are obliged to be distended very much, during the Time the Breast is advanced forward, to throw the Centre of Gravity on the Step the Foot rests on. After this the Leg is to be extended, which requires a violent Action of those Muscles, in order

der to raise that Leg which had its rest on the lower Plain; though perhaps the Extensors of the former contracting themselves, communicate a Motion to the upper Parts, and so contribute something to the Raising the Body. Upon this Account we may reasonably suppose, that the Tendon of those Muscles, whose Action was so much required, being considerably relaxed, the Muscles were rendered incapable of contracting themselves with a sufficient Force, to keep the Parts of the Body in an *Equilibrium*. Thus likewise a Person that labours under such a Disorder, cannot stand upright without a great deal of Difficulty, if his Feet are placed near each other, and not at all on the Leg affected without Support; for when the Body is in an erect Posture, all its Parts are in an equal Poise; those on each Side counterbalance one another, as likewise those on the fore and hind Parts: Upon this Account it is that when the Line of Direction is determined to take its Rise from another Point than that which before being supported kept the Body erect, some Muscles must act during that Time more violently, to recover the *Equilibrium* of all the Parts; and, that the Line of Direction, as before, may pass betwixt the two Legs: But when we stand on one Foot only, the Line of Direction has but a very small Basis, for which Reason the Action of the Muscles of the Leg and Thigh will be almost constantly required, because the Body will be still inclining to one Side or the other. For this Reason, if any of
the

the Muscles are so disordered, as to be incapable of contracting themselves with a sufficient Force to regulate those Postures, the Machine must unavoidably fall. Sometimes Persons have been so unhappy as to have the *Patella* fractured by a Fall, Blow, &c. but if this happens transverse, all those Accidents we have described are very much aggravated; for that Bone, which seems to be an Enlargement and Ossification of the Tendon in that Place, when it is divided after the Manner we have mentioned, the upper Part of it must be drawn out of its Place very considerably, by the Action of those Muscles to whose Tendon it is connected, and which by these Means are rendered useless: Upon this Account it is the Extension of the Leg will be impossible, as likewise Standing, Walking, &c. though we once saw a Gentleman, who by a Fall, on a Stone, whose superior Part was pretty prominent, fractured the *Patella* transversely; and notwithstanding the Parts of it were immediately separated from each other a Finger's Breadth, yet they seemed so to adhere by some membranous Filaments, that they continued without any farther Separation: After some Time, proper Means being made use of, and he confined to his Bed, he so recovered the Use of the Part, that in seven or eight Week's Time it did not much incommode him in walking, although the divided Parts of the Bone could be brought no nearer to each other; so that Nature was obliged to supply that Distance with an intervening *Callus*.

OBSERVATION XX.

Of a Boy cut for the Stone.

A Boy about 8 Years of Age, after having been for a considerable Time fatigued with some of the usual Symptoms of the Stone in the Bladder, was at length committed to the Care of a Surgeon, in order for Cure. He being searched, and a Stone discovered, some important Circumstances were regulated, and the Artift proceeded in order to extract it. To effect this methodically, the Patient was placed on a Machine, which is contrived for that Purpose, that the Person may lay on it commodiously with a Pillow under him. His Hands being tied to his Feet, a Servant on each Side, with one of their Hands placed on each Ankle, fixed his Heels to his Breech, and with the other kept his Knees afunder. The Patient being in this Posture, the Operator took

took the Top of the *Penis* betwixt the Thumb and two Forefingers of his left Hand, and gently extended and pulled it upwards; then slipping the Prepuce a little back, and squeezing the Glans to open the *Urethra* with his other Hand, he gradually thrust in the Oiled Cross Stafe, till its Point came near the Neck of the Bladder: At which Time, by giving it a half Turn, he caused it to slip under the *Os Pubis* into the Bladder. This being done, the Stafe was committed to the Care of an Assistant, who by bringing its End near the Belly, caused its convex Part to press strongly on the interior Surface of that Part of the *Urethra*, which lies under the *Perinæum*; by which Means the Teguments were in that Place raised above the Surface of the continuous Parts. The *Scrotum* being drawn up by a Servant, the Operator, with the Thumb and Forefinger of his left Hand, fixed the most eminent Part of the Stafe to the left side of the *Perinæum*,

Perinæum, and with his Bistoury made an Incision along its Furrow, betwixt his Thumb and Finger. The Length of the Incision was regulated by his Judgment of the Magnitude of the Stone. Before the Removal of the Stafe, he slipped the Tip of the Gorget into its Furrow; and all the Time the Stafe was withdrawing, continued to keep them engaged by pushing forward the Gorget, and making it follow the Motion of the Stafe. The Gorget being conveniently placed, the Forceps were introduced over it into the Capacity of the Bladder. On the Removal of the Gorget, Search was made after the Stone, which being soon discovered, it was dextrously extracted. After this a Quantity of *Worm. Ol. Hiperici* was injected, and a Stupe applied. Upon the Removal of this, the Wound was dressed with Dossils dipped in warm *Linimen. Arcei, & Terebinth.* over which were applied Pledgets armed with the Liniment, a Plaister

ter of *De Minio*, and a Bolster kept on with the Bandage, called the double T. The next Dressing the former Applications being continued, the contiguous Parts were embrocated with *Spirit. Vin. Camph.* A few Days after the *Scrotum* began to be very much tumefied; but upon the Application of a Cataplasm of *Ther. Lond.* it soon subsided. About 10 Days after the Operation, a Bolster of Cloth was applied on each Side of the Wound, to oblige its Lips to come close to each other, that the Re-union might be the sooner and more commodiously effected. The same Dressings were continued till the Wound was incarned, and brought into a very narrow Compass; only the injecting the Oil was omitted. All Things appearing in so good a Condition, the Cure was compleated by the Application of Epuloticks, and the Boy continued perfectly well.

REMARKS.

SINCE Cutting for the Stone has been, and still is looked upon to be one of those Operations that requires the greatest Skill and Dexterity in the Artist, we need not wonder, if some Persons, by their diligent Applications, have endeavoured to advance it to a higher Pitch than their Predecessors; though the little Number of the Followers of those that attempted it, since *Celsus* and *Joannes de Romanis* invented and described the *Apparatus minor* and *major*, have never been sufficient to recommend the Methods they have prescribed. What Success the latest they have heard of may meet with in the World, we are not yet sensible of; though according to the best Accounts we have received, it has been very much caressed by some *Parisians*. Those Ways we just now mentioned, whose long Continuance, and general Approbation, have been sufficient to establish them in several Nations, by regulating some little Circumstances which belong to them according to the Variety of Subjects, we suppose may be practised with as great Success as any yet known; for, not to mention how commodiously the Part offers itself, in order for the better Performance of the Operation, the very Structure and Disposition of it is such, as seems to be sufficient to entitle it to a Preference before any other
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it is true, we are pretty well assured, there are some Things which have been practised, that relate not only to the Operation, but likewise to the Manner of Dressing, that seem to require a Regulation, by reason they are attended with such unhappy Accidents as very much prolong the Cure, if not totally prevent it. The first we shall take notice of, is the Use of the *Dilator*, which as it so violently distends, lacerates, and discomposes the regular Order of the Fibres and capillary Vessels, by forcing them into a foreign Situation, must unavoidably occasion an Interruption of the Motion of the Juices; from whence an Inflammation generally succeeds; and if proper Means are not immediately made use of, perhaps a Mortification: Beside this, the Suppuratives which are to be made use of, and continued for some Time to open the Orifices of the Fibres and Vessels, in order to give Liberty to their stagnated Juices to disengage themselves, very much contribute to retard the Cure. Though if by reason of the Largeness of the Stone, the Use of the Dilator be absolutely necessary, as perhaps in some Cases it may, the Artist is always very circumspect not to use Digestives too long, but to have recourse timely to the Use of such spirituous Medicines as are enriched with a moderate astringent Force, to correct the too great Laxity of the Fibres of the Parts, and in some Measure to recover their natural Tone; for by this Means, he not only removes that Extraversion of the Lips of the Wound, which is frequently observed,

but at the same Time corrects the offensive Smell of the Matter, and lessens its Discharge. Likewise the continued Use of too many Dossils, proves always very inconvenient; for they certainly in a great Measure prevent the Consolidation of the Parts; upon which Account the Urine does not re-assume its ordinary Course, but discharges itself continually by the Wound, in the Sides of which the Salts do not fail to fix themselves, and so occasion such a Callosity, as is always observed in a Fistula, in which it generally terminates. Besides this they often cause such an Irritation of the Parts, and so block up the Passage of the separated Matter, as to occasion Inflammations, Abscesses, &c. But above all that we have hitherto said, or can say upon this Subject, the injecting large Quantities of *Ol. Hyper.* immediately after the Operation, and continuing it for some Days, as we have oftentimes seen, is to us the most unaccountable; for in the first Place, we cannot imagine what Advantage can be proposed by it. If it be alledged that it is a Vulnerary, and so must consequently contribute to the Re-uniting the divided Parts; we answer, that though *Hyper.* be a Vulnerary itself, and consists of such noble balmy Particles, that when set at Liberty, and afterward engaged in any proper *Menstruum*, may form a Medicine, whose extraordinary Qualities may entitle it to a Preference before several others; yet when those temperate volatile oily Salts, with which it abounds, become so sheathed, and locked up by the

Viscidities

Viscidty of the Oil which is made use of in such Cases, it can contribute little or nothing to the Union of Wounds: Besides this, all the World owns that Oil is of a direct contrary Quality: If those Gentlemen, who approve of its Use, do it merely upon the Account of its promoting Digestion, they may easily acquaint themselves, that it effects it by relaxing the Fibres and capillary Vessels of the Parts, and enlarging their Orifices; for by this Means, the Juices they contain, have an Opportunity of discharging themselves, which mixing with Part of the Oil that is lodged among the Membranes, must in a short Time form such large Quantities of Matter, as by its constant Discharge, may be sufficient to inform any Person, that the natural Tone of the Parts is utterly destroyed. There are some other Methods of performing this Operation beside those we have taken notice of, as that described and first practised by *Peter Franck*, generally termed the High Operation, the Performance of which *Dr. Lister* likewise mentions in the Philosophical Transactions. The same Author, in his Journey to *Paris*, informs us of a new Way practised by one *Pere Jaques* a Monk, which we wish he had been more particular in describing: However, he tells us, that he cut in the *Hotel Dieu* ten in less than an Hour's Time; the third Day all were hearty and without Pain but one. His Methods are by the grand and little Appareil; in both he boldly thrusts in a broad Lancet, or Stiletto, into the Middle of the Muscle of the Thigh, near the *Anus*, till he joins the Ca-

theter or Stafe, or the Stone betwixt his Fingers; then he widens the Incision of the Bladder, in proportion to the Stone, with a Silver oval Hoop; if that will not do, he thrusts in his Forefingers and dilates it; then with the Duck's Bill he draws it out. The same Operator cut eleven at the Hospital *La Charité*, whereof one died, and being dissected, it was found he had his Bladder pierced in four or five Places, also the *Musculus Proas* sadly mangled, and the left *Vesicula Seminalis* cut. Since our Author's Return, he received a Letter from a very learned and industrious young Gentleman: Part of it related to this Matter, which we shall transcribe.

“ *Paris, August 2. 1698, Pere Jacques's* Reputation mightily flakens. Out of 45 which he cut at the *Hôtel Dieu*, but 16 of them survived; and of the 19 in *La Charité* but 11. He has practised at the Hospital at *Lyons*, but it is said with worse Success than at *Paris*. I am sensible he has got Abundance of Enemies, which makes me very often question what I may hear said of him. *Dr. Fagon*, the King's Physician, told *Dr. Tournefort*, that he had cut 7 at *Versailles*, and that 6 of them are alive, and as well as if never cut. The Person that died, was so distempered, that he was not expected to live; and it was thought, if he had not been cut, he had not lived so long. The Surgeons have a great Mind to cry down the Man, though

though they practise his Method: For *Marshal* (who is reputed the best of the Surgeons in *Paris* for this Operation) has since cut after *Pere Jaques's* Manner, only with this Difference, that *Marshal's* Catheter was canulated. *Le Rue*, the second Surgeon of the Charity Hospital, cut after the old Manner, at the same Time when *Marshal* cut *Pere Jaques's* Way, but had not so good Success as *Marshal* had; for all that *Marshal* cut are alive and well, whereas the other lost one or two of his Number. Besides, those that lived, were not so soon cured, no, not by a Month or 6 Weeks."

Among the various Methods of cutting for the Stone that we have yet met withal, we never found any that came nearer this of *Jaques*, than that mentioned by *Dr. Wittie* in his *Fons Scarb.* where he relates the History of a Person in whom the Incision was made through the *Glu-teus major.*

OBSERVATION XXI.

*Of a very large Tumour in the Throat
of a Woman, that suffocated her.*

A Woman near 57 Years of Age, that for several Years had had the satisfactory Enjoyment of a great Measure of Health, one Morning complained of a small Swelling on the Fore Part of her Neck, just above the *Sternum*. All the Account she could give of the Cause of it, was, that the Night before she had a very pleasant Dream that made a very great Impression on her, which was of her deceased Husband's coming to her, and chucking her under the Chin. The Inconvenience the Tumour put her to before it came to a considerable Bigness, was not great, though the almost continual Reflection on her imaginary Husband's kind Dealing with her, and attributing the
Cause

Cause of the Swelling to that, made it much the more troublesome. After some Time, it became so considerably large, extending itself over the Fore Parts of the Neck, and to the left Side as high as the Ear, that it very much incommoded her in Eating, Drinking, and Breathing; in a few Days after which she expired. The Case being very uncommon, or perhaps never before observed, attended with such Circumstances, several Surgeons were solicitous of being present at the Opening of the Tumour; which at length being complied with by some Persons who before opposed it, the Teguments were divided and removed, which discovered a prodigious Mass of glandulous Flesh, which appeared to be very compact and firm, the upper Part of it being disengaged from those Parts to which it was connected, and a considerable deal of it dislodged from underneath the left Clavicle; the only Part of it that remained unseparated, was, that which seemed to be

be continued a considerable Way underneath the *Sternum*. However, the Diffector, by passing his Knife down the *Thorax*, soon separated it from several large Vessels, and brought it away. The whole Substance of it weighed somewhat more than one Pound six Ounces.

R E-

REMARKS.

IN order to form a right Judgment of such surprising Appearances as these, which we sometimes find in morbid Bodies after Death, we ought to observe, that all of them owe their Original to the first Conformation of the Parts; so that when we discover any Part, whose Magnitude, Figure, and Solidity, so far disagree with what it was originally, as not to be conformable to it in the least Respect, we are obliged to consider first its Situation, and to what Part it is connected, and then to examine what Part is capable of such an Extension, &c. as that which has undergone such an Alteration. The Gland from whence the Tumour was first derived in the preceding Case, in our Opinion, was the *Thymus*, and we believe there is a Possibility of proving it to be so by very good Reasons. In the first Place, the Swelling that was observed, was but just above the Place where the *Thymus* is naturally seated, and a very little Distension of the Gland might be sufficient to occasion it. Secondly, the Vessels that passed through that glandulous Substance were the very same that constantly pass through the *Thymus*. Thirdly, there is no Gland placed thereabout that is capable of being extended to such a prodigious Degree, except the *Thymus*. And fourthly, if it was not the *Thy-*
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mus, the Woman had no such Gland, for there was no other to be discovered. What remains now to be solved, provided the other is allowed to be as we have proposed, is how this Gland came to be distended to such a prodigious Degree as was observed. Perhaps, if we say the Woman's Imagination had some Relation to it, it may be looked upon by some to be of too little Force to account for such a surprising Phenomenon, while others, should we take notice of it, might say one of the chief Circumstances was omitted. Upon this Account, as every particular Thing may be of Use to us sometimes in unfolding the Secrets of Nature; so we ought not to omit even the least, if we design to form a reasonable Opinion. That there are abundance of strange Accounts in Authors relating to the Force of Imagination, a Man of Diligence and Application cannot be unacquainted with; and I think we do not do Justice to our Predecessors, without we give Credit to those they relate on their own Knowledge. A very remarkable History we find in *Diemerbroeck's* Anatomy, of an old Woman of 66 Years of Age, who out of Commiseration to her deceased Daughter's Child, undertook to nurse it. Her Breasts, which for many Years had been withered and flabby, she offered it with an intense Desire of giving it suck: At length they began to give Milk, and that so plentifully, that the Child had scarce need of any other Sustainance. The Story, as it is related by the Author, is backed with such considerable Circumstances,

as are sufficient to engage a Man to credit it. Now if it were so that the Force of Imagination was sufficient to cause a fresh Quantity of milky Juice to be detached to the Breasts, after they had been so many Years exempt from it, I think we may as reasonably suppose, that a greater Quantity of Blood and Spirits, than passed any particular Channels before, may be determined to pass the same Channels to any Part which is the Object of so strong an Imagination.

OBSERVATION XXII.

A Young Fellow of about 18 Years of Age, had for above 2 Years complained of some of the usual Symptoms of the Stone in the Bladder: At length he was committed to the Care of a Surgeon to be searched; but in passing the Catheter through the *Urethra*, the Artist met with some Obstructions, which gave him Reason to suppose there were Caruncles. This Opinion seemed to be fortified by the young Man's Master, and some other Persons asserting he was venereal, he himself not positively affirming the contrary: Upon this, soon after he was ordered a Salivation, and treated as is usual in such Cases. During the first Fortnight he continued in it, he spit but little, by reason of a constant Pain he was afflicted with about the Loins and *Pubis*, that fatigued him Day and Night. About the fifteenth Day

Day

Day he expired, a little before which he had a total Suppression of Urine. On Dissection, we discovered the Gall-Bladder to be very much distended with its Juice, the Stomach being almost wholly empty. In the Bladder was found a Stone about as big as a Child's Fist, the Surface of which was interspersed with various coloured Concretions. On the Removal of its external Part, the internal Substance appeared to be of so loose and soft a Texture, as rendered it easily dissolvable in almost any Fluid. Both the Kidneys were distended with a thick foetid Serum, which made them appear prodigiously large, and of an unequal Superficies. The same Sort of Liquor was likewise contained in the Ureters, by which Means they became as large as one of the small Intestines.

REMARKS.

WHAT it was that deceived the Operator in passing his Catheter, we cannot well conceive, unless the Stone, by pressing on the Neck of the Bladder, occasioned some Corrugations in its internal Coat; and that this has been the Occasion of forming a wrong Judgment in some Cases, we are pretty well assured; though we have observed it seldom happens, but when the Bladder is in a contracted State: However, the positive Affirmation of some Persons that were very well acquainted with him, that he was venereal, might easily induce a Person to believe they were Caruncles; because they are what are often observed in such Cases. To account for the Stagnation of that purulent Serum in the Ureters and Kidneys, we need only remark, that the Bladder was so contracted, that the Stone seemed to press on its internal Surface, equally alike on all Sides; by this Means the oblique Insertion of the Ureters into its Coats, must be so compressed as to hinder the Discharge of the separated Juice. Now as the Kidneys continued to perform their Office, the Serum not being received by the Bladder, the Ureters in a short Time must be necessarily distended, till the Fluid, by its natural Pressure, is not capable of farther enlarging their Diameters. When these could no longer afford a Space for the entertaining any additional

tional Serum, the Kidneys themselves must be consequently after the same Manner affected. This Etiology, in our Opinion, seems to be the most probable, by reason it so agrees with the Mechanism of the Parts. Beside, we are assured there was no Obstruction in the lower Extremities of the Ureters, more than what we have taken notice of; because after the Stone was removed, the Serum discharged itself very freely, and the Ureters and Kidneys immediately subsided. As to the large Quantity of Bile in the Gall-Bladder, it must unavoidably happen by reason of the Laxness and Flaccidity of the Stomach; for when this is distended, it always so compresses the other, as to oblige it to discharge its Contents. There are some uncommon Instances of Persons that have had Stones perforated in their Bladders, by the Distillation of the Serum from the Ureters, by which Means they have been in a great Measure exempt from some of those Symptoms that usually attend the Stone in the Bladder; as it happened in a certain Gentleman about 50 Years of Age, till by some unusual Commotion of his Body, the Stone became removed, upon which he was assaulted by the most severe Symptoms imaginable, as a total Suppression of Urine, &c. which finished the unhappy Gentleman's Life.

OBSERVATION XXIII.

Of a cancerated Breast extirpated.

A Woman near 40 Years of Age, by some unhappy Accident, received a Blow on her Left Breast, which in a few Days was succeeded by a small hard Substance, resembling a little indurated Gland, when felt with the Fingers: This continued to increase gradually, till its Enlargement was manifest to the Eye. The Pain she was afflicted with about this Time was tolerable, though in a short time after it became much worse. At about 10 Months End, the Tumour was observed to be very large, the Skin appearing livid, sleek, and shining; soon after this, that Part of it that was the most prominent, was attended with an almost continual Itching, which terminated in an Ulceration. Now no sooner had the Air
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an Opportunity of exerting its Influence on a small Part of the divested cancerous Mass; but the Ulceration daily increased, till it became a very terrible Sore, with extraverted Lips, and covered with spongy Excrescencies. In this Condition this poor Woman continued a long Time; at length she applied herself to an experienced Surgeon for Cure, who after a strict Examination of her Condition, (being fortified with the Opinions of some Physicians and Surgeons then present) proposed the Extirpation of her Breast; which being agreed with, was thus effected: A convenient Place being chosen, the Patient was seated on the End of a Form, a Servant being placed behind her, to confine her in that Posture, and another on the right Side to sustain the sound Breast, that it might receive no Damage during the Operation. Then the Operator passed a Needle, armed with very strong Thread, through the Basis of the Breast; after which he passed

another to cross with the former ; then tying the four Ends of the Threads together, it formed a Sort of double Loop, wherewith he suspended the Breast: This being done with a proper Knife contrived to perform the Operation commodiously, he separated the Breast from the Body ; after which the Operator made his Ligatures on the Mouths of those divided Arteries which required his Assistance, the Flux of Blood being intirely stopped (which was emitted in continued Streams without any Interruptions) from 4 or 5 Arteries. The Wound was dressed with a Digestive, over which was applied a Compress, with a Napkin and Scapulary to sustain the Dressings: The three Dressings being removed, and all Things appearing under very good Circumstances, the Wound was dressed as before. About the fourth Day after the Use of a Digestive, it was dressed with the Yolk of an Egg and Turpentine. Three or four Days after, the

the Matter began to discharge in a great Quantity, which likewise smelt very offensive ; whereupon the Wound was dressed with with *Tinct. Myr.* and *Mel Ros.* This in a few Days deterged and attenuated the Matter, and corrected its foetid Smell. Some time after this, a Part of the cancerous Substance that remained after the Operation, began to grow spongy, and assume a blackish Colour, which had a considerable Effect on the contiguous Parts that were otherwise very well disposed to cicatrise ; upon this Account its Extirpation was attempted by Incision, but some Part of it still remaining, the Actual Cautery was applied, which likewise proved ineffectual. In short, after the Sore was brought into a pretty narrow Compass by the alternate Application of *Ung. Aur.* and *Desic. Rubrum*, common dry Lint or the cathartic Lint being applied over it as Occasion required ; but the same mischievous Accidents attended it as are generally

observed to be the Concomitants of ulcerated Cancers, as a violent Pain, Running of a ferous Juice, tingured with Blood, &c. During this she made use of the internal Prescriptions her Phyfician ordered her, but without the least Relief: At length she committed herself to an old Woman for Cure, by whose Applications the Disease became very much enraged, and in less than 3 Weeks she died.

R E-

REMARKS.

AFTER the Extirpation of this Woman's Breast, we had the Curiosity to examine its Substance; upon the Division of which it appeared to be a prodigious Mass of a close and compact uniform Texture. From a considerable Quantity of this Substance, we expressed a Juice, which though at first very fluid, soon coagulated into a perfect Jelly: A Quantity of it being held over the Fire in a Spoon, as it began to grow warm, there flew off a small Vapour, immediately after which it congealed, like the White of an Egg boiled. We put a Quantity of it, while it retained its Fluidity, to some Syrup of Violets, in hopes we should discover whether it abounded with acid or lixivious Particles; but it wrought no distinguishable Alteration in the Colour, that tended either to Red or Green. After a due Consideration of these Things, it may be proper to offer a few Conjectures concerning the Cause of the Cancer described in the preceding History. In order to succeed in this Enquiry, we ought to make some Reflection on the *Lympha*; seeing we conceive, that when it extravasates and insinuates itself into the Texture of a Gland, it soon coagulates and causes such a Discomposure of the glandulous Substance, as will easily make

us believe it has all the requisite and necessary Conditions to qualify it to contribute to the Formation of such a Tumour. Chymists, by a chymical Analysis of this Juice, assure us it is a Composition of a great deal of fixed Sulphur, a little Volatile, some Phlegm, and much Volatile Alkali, to which some add a little Earth. It is observable, the Lymph remains in a State of Fluidity, while the Volatile Alkali keeps the Sulphur dissolved; but when by any Means the Volatile Alkali is evaporated, the Remainder coagulates, and forms a pretty compact Substance. The Juice that we expressed was certainly nothing more than the most fluid Parts of the Lymph, that was not so well qualified for Coagulation as the other; or it was that which had not been long supplied to the Tumour, and so had not continued long enough to undergo such a Transformation. To give an Account of the Formation of the Cancer, that shall be agreeable to the mechanical Disposition of the Parts, we are obliged to have an Idea of the Structure of that glandulous Substance that was disordered: This was nothing more than a Heap of small glandulous Bodies regularly disposed, and tied together by fine intermediate Membranes, which is what is termed a conglomerate Gland: Over it are extended Abundance of lymphatic Vessels, some Branches of which probably enter into its Substance. Now we may reasonably suppose, that the Blow the Woman received on her Breast, had such a considerable Effect on
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some of those Vessels, as to cause a Division of their tender pellucid Coats, and at the Time occasioned a very great Contusion of the little glandular Bodies that lay under them. Upon this Account, as the Lymph continued to distil from the Orifices of the divided Vessels, it gradually insinuated itself into the Interstices of those glandulous Grains; where after a short Time, it coagulated and disposed all those little Bodies, with their excretory Vessels, firmly to coalesce with it, and form a Substance of a uniform Nature, which was capable of Increase by a continual Supply of a proper Matter from the broken Lymphatics. This Substance must be necessarily very close and compact, not only from the Nature of the Juice, but the Structure of the Part; for the Compressure of the elastic Integuments upon it, before the Ulceration, contributed very much to it. As to the violent Pain that attended the cancerated Breast, it must be a necessary Consequence of the Increase of so hard a Substance as the Cancer is; for it not only engages all those small Branches of the Nerves that were distributed among the little glandular Bodies, to promote the Secretion of a milky Juice, at such a Time as Nature shall determine, but likewise compresses the larger Branches from which those were detached, that entered into its Substance. That there are such Nerves that serve for such a Use, we have the Authority of that accurate Anatomist, *A. Nuck*, who, speaking of the Necessity for Spirits in the Filtration of the Milk,

expresses himself thus: *Ductus autem hi lactiferi, soli non sufficiunt ad lac secernendum, sed simul necessarium fuit, per nervos numerosissimos, ex nervis thoracicis oriundos, copiam spirituum affluere, lactis secretionem promoventium.**

It is a Matter of very great Importance, in order to regulate the Extirpation of Cancers, to consider that a small Part of it that remains after the Operation, is capable of producing so many ill Effects; and this it is certainly disposed to, because it is a Substance so very unfriendly to Nature, that the common Medicines can never operate on it, though applied to it, so as to cause any advantageous Alteration in it: Beside this, it is altogether unqualified for entertaining a Correspondence with the Fibres of the Part, that by a sweet Suppuration gradually extending themselves, closely surround it, so that this remaining Part of the cancerous Mass a few Days after the Operation, appears to be a hard Substance of a whitish Colour, circumscribed by a bright red Circle, formed by the Pressure of the Fibres and capillary Extremities of the Vessels against it. After some Time, notwithstanding the Wound has continued to cicatrise from its Edges, looks as well as possible, and is brought into a pretty narrow Compass, the little cancerous Lump begins to assume a blackish Colour, about which

* These lactiferous Ducts are not sufficient alone to secrete the Milk; but it was necessary at the same Time, that a large Quantity of Spirits should flow through a great Number of Nerves, arising from those of the *Thorax*, in order to promote this Secretion.

OBSERVATIONS. 169

Time it generally emits a Juice of a very offensive Smell: This is probably occasioned by nothing more than its being often exposed to the Air, which if it contains any considerable Quantity of saline Particles, does not fail to cause such a Dissolution and Corruption of that Part of it, that was capable of receiving such an Impression; so that we cannot allow any inherent acid Quality of its own to be the Cause of such an Alteration.

OBSER-

OBSERVATION XXIII.

Of a luxated Shoulder reduced by a newly improved Machine.

A Woman about 54 Years of Age, by a Fall luxated the *Os Humeri* of the Left Arm forward. The Pain not being very violent, and she finding she could move her Arm tolerably well, by the Assistance of her other Hand, imagined it was nothing more than a Bruise, and so omitted the applying herself immediately to any proper Person for Relief: However, the Stiffness of the Parts increasing, at length she thought herself obliged to comply with the Use of Means. To add to this poor Woman's Misfortune, some Years before she had unhappily scalded the upper Part of her Arm and a Part of her Breast, by boiling Water, whereby the Integuments to this Time continued to be very much contracted and hardened

hardened in that Place, which formed an ugly and very unequal Scar. Upon this Account, it was thought proper to make use of an emollient Application, before the Reduction should be attempted, to relax the indurated Membranes, and remove the Tenfity of the Fibres of the Muscles: This being two or three Times repeated, there were some Effays made to reduce it the next Day; the first was by that Way invented and recommended by *Joannes de Vigo*, which is by putting the Heel in the Armpit; the next was by the Girt; but these proved ineffectual: Whereupon the Day after, a small Machine was made use of, which consisted of a considerable Number of small Brass Wheels, properly disposed, by which Means the Extension is made as easy and regular as possible, and which may be looked upon as an Improvement of the Pulley designed for such Ends described by *Parry* and other Authors. It is true, the *Apparatus* in this Case, makes

makes the Patients apprehensive of a great deal of Pain they are to undergo; but it is most certain, it does not contuse and distort the Muscles after such a Manner as several other Methods do. To effect it commodiously, there must be a Bar fixed horizontally, of a convenient Height, round which, about the Middle, there is a Napkin to be wound, after it has been folded lengthways. On this Part of the Bar, which is thus armed, is the Armpit to be placed; then you encompass the Arm just above the Elbow, with another Napkin; over which a Cord is to be fastened, that is to be so disposed, that it may have four Ends at pretty equal Distances from each other, which are to reach about a Yard from the Ends of the Fingers: These Ends, after they have been exactly extended, so that they may draw equally with the same Force, are to be fastened to a Sort of a Loop, at the End of the first Pulley; the other is to be fixed to a Hook drove

drove firmly into a Post near the Ground; which Method is infinitely more commodious and useful than the antient Method of extending by one Cord only, which must draw the Muscles after a very irregular and unequal Manner. After these Things are thus ordered, the Surgeon places himself commodiously to assist the Replacing of the Bone; an Assistant stands behind to hold the Patient, while another makes a considerable Compression on the *Acromion*; a third takes care the Arm be kept extended in the Middle of the four Cords, and the fourth draws the Line according as the Surgeon directs, to make the Extension, which it does with very little Force, and extremely gradual. After this has been sufficiently made, if the Bone does not slip into its Place (as it did in the preceding Case) the Extension is to be no longer continued, but the Surgeon suddenly brings the Arm to the Side, and at the same Time pushes the *Os Humeri* upward, and so reduces it.

R E-

REMARKS.

THE various Methods the Antients discovered of reducing a luxated Shoulder, perhaps first of all proceeded from the Difficulty they found in effecting it; however, it is evident, they were not ignorant of the Force that must be applied to overpower that of the Muscles, by the Machines and other Contrivances they invented to make a vigorous Extension. Now if we do but consider that the Force of all the Muscles depends purely on the Multiplicity of their Fibres; or, according to *Dr. Pitcairne*, if their comparative Force be as their Solidities or Gravities, we may very easily imagine, that in all the Actions of the Arm, some of the Muscles that contribute to its Motions are so disposed, that they must continually act with a great deal of Force in keeping the Head of the *Os Humeri* close to its *Sinus* in the *Scapula*, which is its Center of Rest: Upon this Account it is, that if the Head of the Bone be removed from its Cavity, it gives an Opportunity to some of the Muscles to shorten themselves to a much greater Degree than usual; because that which opposed their contracting Force, is removed out of its Place, and the Head of the Bone rests itself nearer the Original of the Muscles. The very Articulation of these Bones, the

the wise Contrivances, and prudent adapting the Muscles for the Performance of the several Motions of the Arm, is really very surprising: To this we may add, that Nature has been so very provident to prevent the Dislocation of the Head of this Bone, as to form a perfect tendinous Case, which is placed on the Margin of the *Sinus* of the *Scapula*, that chiefly contributes to the confining the Head of the Bone to its Cavity, which would be otherwise liable to be displaced on several Motions of the Arm. *Borelli* hath shewn, that these Bones are so many *Vectes*, of which the Center of the Articulation is the *Fulcrum*, the Tendons are the Ropes, by which the *Vires Motivæ* of the Muscles elevate or move any Weight: And indeed there is a wonderful and exactly nice Geometry, used by the Author of Nature in the Articulation, Disposition, and Motions of these Bones, which are likewise contrived of the best Make that could be possible: Their being hollowed in the Middle is for very wise Ends and Purposes; for by this Means they are not only more light, and so less Force in the Muscles required to move them on all Occasions, but really stronger, than if they had composed one solid Cylinder. To prove this, *Galileo* has demonstrated, that of two Bones of equal Lengths, and of equal Number of Fibres, the Strength of the one is to the Strength of the other as their Diameters are; so that a hollow Bone, of a double Diameter, is as strong again

as

as a close one of the same Number of Fibres. As to the Method we have made mention of, we have seen it successfully practised in a robust Body, when the *Ambi*, the Girt, the Heel, and the Door have failed, though there are several Surgeons present that had all the Assistance they required.

OBSER-

OBSERVATION XXV.

A Little Boy about 3 Years and a half old, after having been allowed too great Freedom in recreating himself with his Playfellows, was seized with a violent Fever, the next Day. By the Use of some proper Prescriptions, the Disease somewhat abated, and the Child continued in a pretty good Condition for three Days; the fourth Day from the Commencement of the Disorder, a Clyster was given, which worked very well; but the Mother of the Child being impatient, and thinking the perfect Recovery of it altogether depended on the purging of him, the next Day gave it a purgative Medicine; but this not working, she repeated it the next Day after, but, as the former, it was not succeeded by so much as one Stool. About this Time the Child became much worse, the

N Fever

Fever was very much increased, it had a violent Asthma, a Pain of its right Side, and the next Day it died. On Dissection, the right Lobe of the Lungs appeared to be very much inflamed and enlarged, by reason of the vast Quantity of Blood it contained; its external Membrane was covered with thick whitish Matter, the internal Substance of which seemed to consist of an infinite Number of small Cells that were formed of the most viscid Part of it, and contained a limpid Juice. The left Lobe had some of this Substance adhering to it, but it did not seem to have undergone such an Inflammation as the former. The right Auricle, that was prodigiously dilated, and the right Ventricle, were filled with coagulated Blood, the Weight of which, that in the Auricle more especially, and the Enlargement of the right Lobe of the Lungs, had forced the Heart into a very odd Position. The left Ventricle
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of the Heart had a *Polyplus*, and some coagulated Blood in it. Upon the Division of the *Aorta*, just before it divides itself into the ascending and descending Trunks, a Part of the *Polyplus* was discovered, which being taken hold of, and some Part of it drawn out, it was observed to divide itself into two Branches; one passed up the right carotid Artery, and the other down the descending Trunk of the great Artery: The first of these was divided into five Branches, the longest of which, after it was taken out of the Vessel, was eleven Inches without being extended; that which passed down the *Aorta* was eight and a half. The Substance of the *Polyplus* very much resembled a viscid Juice coagulated, though it seemed to be of a more compact Substance than we had ever observed any to be before. It is observable, that to some Parts of it there were some Particles of coagulated Blood united, but

these were chiefly to be found on that Part that was lodged in the Ventricle, or near it; the Extremities of the Branches being altogether exempt from them.

REMARKS.

OUR Reflections on what appeared on the dissecting of this Body, were chiefly owing to some Instances we met with of Children that were indisposed much after the same Manner as that we have made mention of, in whom, after Death, there was not only an Inflammation of the Lungs discovered, but a *Polytus* in one or both Ventricles of the Heart: And indeed, if we do but consider the State of the Blood in such a Case, and how it may be disposed to stagnate in the Lungs, either by its too great Viscidity, or by a particular Constitution of the Air, it does not seem so very difficult to give a Reason for such Appearances. Now, if we do but observe, that as the Blood continues to be thrown out of the right Ventricle of the Heart, into the *Arteria Pulmonalis*, to be conveyed to the Lungs; if it does not find a ready Passage through them, it must necessarily stagnate, and by its Weight, so compress the little Air Bladders, as to prevent their regular Expansion, from whence there will be a Difficulty of breathing, or, in other Words, the Person will become asthmatic: By this Means likewise the left Auricle and Ventricle of the Heart will be deprived of the Influx of their due Proportion of Blood; upon which Account, the Quantity being so small, it cannot act by its lateral Pressure so as to distend the

left Auricle and Ventricle to their usual Degree ; for which Reason, the nervous Juice will be squeezed into them but in a small Quantity, and consequently their elastic Force (which is of Use to propel the Blood forward) will be but very inconsiderable. There is nothing more certain, than that the Blood and the Auricles, Ventricles, and Arteries, continue to act on each other ; and that the constrictive Power of the latter is always proportionable to the expansive Motion of the former. Now if the Quantity of Fluid they contain is but small, their Vibrations, as they bear a Proportion to its lateral Pressure, can have but very little Effect on it ; so that it will be disposed to stagnate, upon which a Separation of its Parts will ensue, by reason of the Difference of their Bulk and Figure : This Separation being made, the branched Particles firmly engage with one another, from which intimate Cohesion they obtain a greater Degree of Solidity. Beside this, some Parts of it are entangled about the little tendinous Fibres that draw together the Sides of the Ventricle, so as to prevent its being easily disengaged. Now those Parts of the Blood that are the best qualified for uniting with one another, and forming such a Substance, we take to be such as compose the viscid Serum, which at this Time must necessarily become so, for a very considerable Reason, which we shall take notice of. Dr. *Wainright*, in his Treatise of Non-Naturals, intimates, that the Heat of the Body in Fevers acts an universal *Stimulus*, whereby

whereby all the Glands will be straitened, and consequently the fecerned Matter will be thinner or more fluid, and the remaining Part of the Blood more solid than in a natural State. Now the gross Parts of the Blood being retained in this Condition, it is therefore more viscid. Beside, its Viscidity is increased by Heat, as is known by Experiment: For if you apply a much less Degree of Heat than will boil Water, it will turn the Serum into Jelly: The Heat of the Blood in Fevers is greater than most imagine; the Heat of a Man's Skin, whose Pulse beats 60 Strokes in a Minute, is to the Heat of boiling Water, as 16 to 52, as appears by the Thermometer; so that boiling Water is but little more than three Times as hot as the Blood of a healthy Man: Now if the Heat of the Blood should increase, in proportion to the Frequency of the Pulse (as it must if the Pulse beat with the Strength it did, and generally it is stronger) a Man then, whose Pulse beats 195 Strokes in a Minute, would be as hot as boiling Water; and it is common for a feverish Pulse to beat 120 Strokes in a Minute; hence (says our Author) we may account for the Siziness of the Blood in Pleurifies, and other inflammatory Distempers.

OBSERVATION XXVI.

Of a prodigious Piece of the Skull extracted, after which the Patient recovered.

A Woman about 50 Years of Age, received a Blow on the Head with a Stone, which laid a small Part of the sagittal Suture bare. This small Wound was at first dressed by an unskilful Person, who by applying unctious Medicines, fouled the *Cranium* a considerable Way, and produced a very large Discharge of Matter; by this Means the muscular Membranes were in a short Time corrupted, which emitted a very offensive Smell: My Master, Mr. *Bateman*, to whose Care she was committed, separated the Teguments by Incision, as far as the Bone had received any Alteration, which was dressed with *Tinct. Euphorb.* and oftentimes cauterised. After the Use of these Means about four Months, several small
 Particles

Particles of both Tables came away with the Dressings, so that the Pulsation of the *Dura Mater* might be easily discerned. Notwithstanding this, it was several Months before the Bone became so loose as to be extracted without putting the Patient to violent Pain. The Piece consisted of both Tables of the Skull: The greatest Part of it was of the left Parietal Bone, the rest being a small Part of the right parietal and occipital Bones. It is very observable, that over the *Dura Mater* Nature had framed a hard carnous Tegument, to defend the Brain from external Injuries. This carnous Cover was not so compact but the alternate Elevation and Depression of the Brain may be observed at this Time, which is above a Year and a half since it was cicatrised. After the Cure was completed, the Patient constantly wore a soft Compress of Lint, Tow, or Cloth, with a large Cap of Tin quilted over it, to resist any Compressure on the Part.

REMARKS.

THIS Observation may serve to confirm the Opinion of those Authors that have assured us of the Inconvenience that may attend the Application of oleous or unctuous Medicines to bared Bones ; though at the same Time, we conceive that it is not so much any particular Quality in these Medicines that disposes them to have such an Effect, on Parts of such a Nature as the Bones are ; but it seems to be chiefly occasioned by the large Quantity of Matter that those Applications produce, seeing all of them very much promote Suppuration. Now after a Bone becomes denuded, if such Medicines are applied, as are capable of relaxing the Fibres of the Part, they do not fail to discharge their Contents in very large Quantities, and continue so to do, till by the Application of some spirituous or moderately astringent Medicine, their too lax Tone be rectified. It is some Particles of the Matter that continually lay on the naked Bone, that first insinuate themselves into its Pores, and so soften the Fibres it has the Opportunity of having its Effect on ; after this the bony Fibres begin to recede a little from each other, to which the Pores on the Surface of the Bone are proportionably enlarged : At this Time it is that the Bone seems to be somewhat thicker in this Place

Place than usual, because all the Vacuities of the Bone are filled with such a Matter as has disposed the Fibres to extend themselves; but this must be necessarily much sooner effected in such a Case as that above related, where, by Means of the Suture, the Matter had an Opportunity of insinuating itself betwixt the Bones, as soon as ever it began to be lodged on the Part. As to the Use of Actual Cauteries on such a Part, *Fallopious* gives us a very necessary Precaution. * *Fugite ustionem in capite* (says he) *quando imminet periculum inflammationis. In ossibus thoracis similiter; ne febris & mors succedat. Præterea in vertebra dorsi fugite ferramenti, ne incandescat medulla & pereat æger.* See his Treatise *de Morb. Gallic. cap. 97.*

Ambrose Parrey, in his *Chirurg. lib. 10. pag. 249. Edit. Anglican.* informs us, he had a Person come to him, who had the *Os Bregmatis* of the left Side broken with a Sword, which did not reach the second Table: A few Days after his Recovery, the Bone being agglutinated, by eating plentifully of Tripe fried with Onions and Spices, and drinking a great Quantity of strong Wine, he presently fell into a continual Fever, and lost his Speech and Understanding; his Head swelled, his Eyes looked

* Forbear to cauterise the Head when there seems Danger of an Inflammation. Observe the same in the Bones of the *Thorax*, lest a mortal Fever should succeed. Avoid likewise the Use of the Iron on the *Vertebrae* of the Back, lest it should melt the Marrow, and destroy the Patient.

red and fiery, and as though they would have started out of his Head. These Things being considered, our Author let him Blood, having first, by the Advice of his Physicians, given him a Clyster, and applied to his Head such Things as were fit; he also laboured with Frictions and Ligatures of the extreme Parts, to draw the Humours downwards; yet for all this, the Part of the Head which was formerly affected, began to apostumate, which being opened, there came forth a great Quantity of Matter, and at length the Integuments sinking down, both the Tables of the Skull became putrefied and rotten, as might be easily known by their Blackness and Stench. Now to take away this Corruption, there were applied actual Cauteries at certain Times, both to amend the Corruption, and separate that which was altered. After some Months Space, a great Number of Worms came forth by the Holes of the carious Bones, from underneath the putrified Scull; which moved our Author to hasten the Separation and falling away of the putrid Bones; which being done upon the very *Dura Mater*, in that Place which Nature had covered with Flesh, he observed three Cavities of the Largeness of One's Thumb, filled with Worms about the Bigness of a Point's Tag, with black Heads diversly wrapped among themselves. The Bone which Nature separated was of the Bigness of the Palm of One's Hand, so that it was strange (says he) that so large a Portion of the Skull should be cast off by Nature, and the Patient

Patient not die thereof, for he recovered beyond all Men's Expectation; but after the Agglutination of the Wound, the Scar remained very hollow; in short, the Patient wore a Cap made of thick Leather, more easily to withstand external Injuries, whereby he grew much better.

Vauguion, in his Chirurgical Operations, p. 179. gives us the History of a Woman that was in the *Hotel Dieu* at *Paris*, who receiving a Blow on the Head, the Teguments were all corrupted, and a Moiety of the Skull was laid bare. Both Tables exfoliated, so that Part of the Frontal Bone, and a Moiety of the two Parietal Bones came away all at a Time; and this bony Case being removed, the Brain lay bare, and its Motion was very discernible: By Degrees it was covered again by a carnous Matter, which consolidated; but this Cover never arrived to such a Degree of Hardness, as to resist the Impression made by the Motion of the Brain. Upon the least Touch imaginable with the Finger on this carnous Membrane, the Woman instantly seemed to see a thousand Candles. She had a Cap of Lead made to cover the Part, and defend it from external Injuries, and carried about the exfoliated Bone, as a Cup to receive Alms in.

OBSERVATION XXVII.

Of a Leg amputated, in which the Arteries were perfectly petrified.

AN old Man of about 67 Years of Age, that for a considerable Time had laboured under a scorbutic Habit of Body, was frequently attended with such a Chilness of his Feet and Legs, that (to use his own Expression) it was hardly possible to keep Life in them: After some Time, he observed a black Spot upon one of his Great-Toes, which not being painful, nor in the least Respect troubling him, he at first took but little Notice of, though he was very sensible of its Increase. It was a considerable Time before he applied himself to any Person for Cure, nor had he then, had not the Mortification, by its gradual Progress, extended itself over the next Toe to that which was first disordered. There were
some

some proper Applications made use of, that contributed to the Separation of the mortified Flesh, but were not effectual in putting a Stop to its Increase; for the whole Foot became very much tumefied, and seemed to threaten an approaching Gangrene: The Surgeon that had the Care of the old Man, did not give him so favourable a Prognostick as he expected when he asked his Opinion of his Case, whereupon he was resolved to have his Leg amputated. There were some Persons present that endeavoured to dissuade him from so rash a Proposal, telling him the Danger of such an Undertaking in a Person of his Years and so disordered, and the ill Success the Operation might be probably attended with. Notwithstanding this, he persisted in it, alledging, there was no other Way to be proposed to save his Life. The Leg was taken off after the usual Manner; but there was one Thing very remarkable during the Operation, which was that
when

when the Ligature was loosened, in order to discover the Vessels, that they might be taken hold of by the Forceps and tied, the Blood discharged itself in so small a Quantity, that the Mouths of the Arteries could not be discovered without a great deal of Trouble. A Stop being put to that little Effusion of Blood, the Stump was dressed up, and all Things else were ordered as is customary; but the Part was never brought to a good Digestion: In short, in a few Days it began to to mortify, the Patient was seized with a violent Fever, began to be attended with Rigours, and presently after died. The Dissection of the Leg obliged us with the Discovery of the Arteries being perfectly ossified, the Diameters of the Bones of which were so wonderfully lessened, that they would not admit a small Probe without a great deal of Difficulty.

REMARKS.

THIS was the first Instance of this Nature that ever we took notice of; though some time after, by examining the Legs of old Persons, after they had been amputated, we saw one that afforded us just such a Case, and in several we have observed the Arteries have assumed a cartilaginous Hardness: It is no Wonder that Persons in such a Condition are attended with Mortifications, and that these revive after the Part has been taken off. It has been a common Observation, that Mortifications from an internal Cause, are to be esteemed incurable, more especially, if they happen in aged Persons; and it is very probable, those that seize such Subjects, are often occasioned by such a Petrification of the Arteries. We once saw a very old Man, who had been fatigued with a tedious Indisposition of Body, that a few Weeks before he died, was brought to such a languishing Condition, that his Fingers began to grow black and mortify: Notwithstanding this, he was not sensible of any Manner of Pain in them, though in a short Time they were perfectly withered up, and dried like a Stick. It is observable, that the Mortification never extended itself farther than the Fingers, nor did it ever emit any offensive Smell. This Mortification must be either from

the preceding Cause, or else the Blood was reduced to such a depauperated State, by the Expence of its active and spirituous Particles, that it no longer contained any Characters of Life, but remained in its Vessels as a dead unactive Mass, incapable of influencing the Part either by Heat or Motion: Now the Blood being in this Condition, the Parts will be necessarily disposed to mortify, seeing their Health and Life altogether depends on a certain Modification of the Particles of the Blood which gives it its Warmth and Fluidity: It is upon this Account, that tedious Fluxes, great Abstinences, and all Sorts of great Evacuations, are generally succeeded by Mortifications; for the Spirits by these Means become dissipated, the proper Modification of the Blood destroyed, and the natural Heat consequently extinguished.

Mr. *Cowper*, in the Philosophical Transactions, Numb. 280, relates the History of an old Gentleman in the 67th Year of his Age, that for near twenty Years before, lost the Use of his Legs; and in that Time he had been so persecuted with Convulsions in them, that neither Leg was free a Quarter of an Hour together, whether sleeping or waking. At length, one of his Toes mortified, which was taken off by an expert Surgeon of *Salisbury*. Not long after, more Toes of the same Foot followed the like Fate: The Convulsions following that Leg stronger and quicker, that Part of the Foot next the Toes became tumid and inflamed,

inflamed, the Tumour extending itself above the *Maleoli*; a sinuous Ulcer passed by the Side of one of the metatarsal Bones, the Extremity of which Bone (whence the Toe was taken off) lying bare. Our Author finding the Leg very chilly, the Necessity of parting with it was too evident; which the Gentleman suffered with extraordinary Fortitude: On the Abscision (which was about five or six Inches below the Knee) it was unexpected to see so little Blood spouting from the Arteries. The Stump being bound up, and committed to the Hands of two or three Servants, a less Number not being sufficient to hold it, by reason such strong convulsive Motions pursued the Part on the Operation. When our Author had discovered the Ends of the Arteries in the Leg abovementioned, he endeavoured to pass his Probe into one of them; but meeting with some Opposition, he suspected he had mistaken the Vein for the Artery, and that the Valves opposed the passing of the Probe that Way; but on farther Dissection, he cleared the Trunks of both those Blood-Vessels, and found the Veins in their natural State; but the Sides of the Arteries were grown bony or stony.

OBSERVATION XXVIII.

A Young Fellow about 20 Years of Age, by I know not what Accident, had his left Leg fractured aboard one of her Majesty's Ships. The Surgeon immediately attempted its Reduction, and bound up the Part: The next Day he was sent ashore, where on an Examination of the Member, it appeared to be of a very ill Figure; the Extremities of the Bones were as much displaced as ever, and the whole Leg was exceedingly tumefied and inflamed: Means being made use of to remove the Swelling and Inflammation, the Reduction was a second Time attempted, which to all Appearance was very well effected; for the Part continued pretty free from Pain, and in its true Position near a Month, about which Time he being permitted to walk with Crutches, by some unhappy Accident
got

got a Fall, and distorted the fractured Bones: In this Condition he continued about three Weeks, and at length he was sent up to Town, where the Surgeon that had the Care of him, on a strict Examination, finding the *Callus* very near confirmed, desisted from attempting its Reduction, but bound up the Part, and laid it in as good a Posture as possible, in hopes he might walk with it tolerably well, though he must always have been contented with the unpleasing Prospect of a crooked Leg. However, soon after this, he got a second Fall, whereupon the Part was examined, during which it was observed, that on a considerable Compressure on the protuberant Part, the Ends of the fractured Bone and *Callus* seemed to give way. This gave some Encouragement to attempt its Reduction, which was thus performed. Two Assistants commodiously placing their Hands above and below the Fracture, made a vigorous Extention; in the mean while,

the Person who designed to reduce it, compressed the most prominent Part with the Palm of his Hand so violently, as obliged the fractured Bones to recede sufficiently, to recover the natural Figure of the Part. After this, by applying his Hands on each Side the Fracture, and pressing it equally all round, he was sensible the Extremities of the Bones were reinstated in their proper Places: This being done, the Part was encompassed with a proper Plaster, over which, on that Part which had been the most protuberant, was fixed a Compress of Plaster, consisting of several Folds; then was applied a Bolster and gradulated Compresses, to fill up the Inequalities of the Part; all which were retained in their proper Places, by means of a Rowler about three Fingers broad, and of a sufficient Length. During the Application of these Things, the Part was kept in a true Posture, and a moderate Extention continued. Then the Remainder Part of the Dressings being

being applied, as is usual in such Cases, the Part was laid in such a Position as was capable of preserving its natural Figure. About 16 Days after, the Dressings were removed, and all Things appeared in a very good Condition : In short, in a Month's Time, he was permitted to walk with Crutches, but with better Success than before ; in five Weeks Time, the Dressings were all removed, and the Person had the Satisfaction of a very serviceable Leg.

REMARKS.

THIS Attempt in the preceding Case, was altogether owing to a successful Undertaking of the same Nature, that was practised on the Arm of a Gentlewoman, which had continued ill set above three Weeks; and indeed we see no Reason but that it may be effected in any Person, if no ill Accidents attend, provided it be attempted before the *Callus* be confirmed, or arrived to so hard a Consistence as the Bone itself. This *Callus* seems to be nothing more than an Assemblage of the nutritious Particles of the Blood, that receive a particular Modification, by passing through some peculiar Channels in the Bone. The Particles are at first somewhat viscous and branched, which qualifies them for engaging with one another, at which Time they lay hold of the little bony Fibres that form a Sort of Network in the Middle of the Bone, and probably support the Marrow that would otherwise sink to the lower Extremity: This being so, its extending itself round the Bone so far, is in a great measure prevented; though it does sometimes happen, when the Bandage is so slack as not to have any Effect on it by its Compressure. There is but little more Difficulty in bringing a Bone to its proper Figure, before

before the *Callus* be arrived at a sufficient Degree of Hardness, than there is in reducing those curved Bones, which are generally the Effect of a Fall in young Children, where the Fibres of the Bone are not divided, but exceedingly extended on the convex Side, the concave Side being mightily contracted, or its Parts forcibly pressed together. The same Alteration we observed in bending a green Stick; only on that Side where its Fibres are compressed, they always run into Folds, and so form little Convexities. *Fallopious* and *Etmuller* are of Opinion, that if the Bone be attempted to be broke after the *Callus* be sufficiently hardened, it will sooner break in any other Place than in the *Callus*; and indeed the Opinion seems to be reasonable enough; for the Diameter of the Bone in this Place will be greater than it was before, upon which Account a greater Force will be required to break it in this Place than any other, for the Strength of the Bones chiefly depends on their Thickness.

In the Leg of a Man that was amputated three Weeks after it was fractured, we saw the *Fibula* united by a *Callus*, which was so soft and pliable, that it would easily yield any Way upon bending the Bone. This *Callus* wholly proceeded from the internal Substance of the Bone, nor did it at all unite to the bony Fibres that composed its Sides, though it was lodged
betwixt

betwixt them. Its Substance, which was of a whitish Colour, exactly resembled a Piece of Horn made soft by boiling. *Fernelius* and *Hollierius* have observed, that in some Persons by Sickness, the Bones have become so soft and flexible, that they might be easily bent any Way.

OBSERVATION XXIX.

*Of a large flatuous Tumour above one
of the Knees.*

A Young Man about 22 Years of Age, that had been for a considerable Time confined to his Bed by Means of a fore Leg, and some other Disorders he then labour-ed under, one Day requested the Surgeon that had then the Care of him, to look on a large Swelling that was a little above one of his Knees, which he said he began to be first sensible of about three Weeks before; the Tumour was soft, painless, not at all discoloured, easily gave way to the Pressure of the Finger, but immediately re-assumed its former State; all which were distinguishing Characters of its being flatulent: Upon this Account it was embrocated very well with *Spir. Vin. Cam.* and an *Emp. è Cym.*
was

was applied. After three or four Days the Plaister was removed, and the Tumour seemed to be somewhat less. The same Means were again repeated; but they causing no distinguishable Alteration in it, a Puncture was made with a Lancet, of a considerable Depth; upon which the Tumour immediately subsided a little, by the passing out of an imprisoned Air. This was succeeded by the Discharge of two or three Ounces of a viscid Juice of a whitish Colour: A Quantity of this being held over the Fire in a Spoon, some of the most volatile Parts of it immediately evaporated, and the Remainder hardened like the White of an Egg boiled. There seemed to be a considerable Quantity of Matter remaining behind, that was too viscous to be discharged by this small Aperture, whereupon a Caustic was applied about the Breadth of a Shilling: Upon the Division of the Eschar, there came away about two Ounces of Matter, which had received

ed a considerable Alteration in its Colour by the Mixture of some of the Salts of the Caustic. In short, as the Eschar digested off, the remaining Part of the Matter discharged, and the Ulcer was incarnated and cicatrised in about three Weeks Time.

REMARKS.

WE do not find that the Antients, or Moderns, have declared their Sentiments concerning the Cause of flatuous Tumours, with so great a Probability as in most other Cases: And there is a late Author that seemed to be sensible of the Difficulty that must attend the attempting it, that has almost altogether declined it. Whatever the Reason of it is, it is certain, the Antients had not a true Knowledge of that which is necessary to its Production: And we are apt to believe, that without the Discovery of the lymphatic Juice, we had never been able to account for it. This Juice, when it is extravasated, grown somewhat viscid, and lodged at the Bottom of these Sort of Tumours, as it always does, is certainly what Authors generally distinguished by the Name of a thick pituitous Humour. It is very probable, this Juice does not begin to assume a Viscidity, till it is deserted by those active Parts that maintained its Fluidity. These subtle Particles endeavouring to make their Escape, press upon those Parts that contain them, equally on all Sides, till those are obliged to give Way, that have the least Power to oppose the expansive Force: This, if the subtle Matter is collected underneath the Integuments, is always outwardly, the Tumour bearing a Proportion to the Quantity of Matter it contains,
and

and the Compression and Rarefaction it undergoes. That the external Air will have an Effect on it this Way is most certain, and perhaps, the having a Respect to this, in those Tumours that are obstinate, may contribute very much to the removing them; for the Matter being thinned, it more easily perspires; besides, the Cohesion of the viscid Parts, that remain behind, may be the better disunited, when it is disposed to be rarefied. On the contrary, we always find a greater Difficulty in removing these Sort of Tumours in the Winter than the Summer, because all the Juices of the Body, more especially those that are extravasated, will be more viscid and fizy, and so continue, till the succeeding Warmth communicates a certain Degree of Motion to the Particles that compose them, by which Means they become rarefied. It is upon this Account a hot and dry Air is recommended by Authors, not only in flatuous Tumours, but also in those that are œdematous and aqueous. It is to be observed, that what we have said here, has no Respect to a pure *Emphysema*, it being very rare to be found, but only that which is mixed, which has always a viscid Juice attending it. Here we may take notice, that those Applications that refrigerate the Part, and those that are oleous, unctuous, or viscous, are to be avoided in those Sort of Tumours, because they not only constipate the Pores of the Skin, but condense the Air that is in the Tumour, and so render it less fluid; upon which Account the Cure will be rendered

rendered much more difficult and uncertain, because the Pores must be again enlarged and the Matter must receive a proper Modification, before it is qualified for Perspiration. On the contrary, those Remedies that are strongly discutient, which are enriched with a considerable Quantity of volatile, active, warm Particles, are adapted for accomplishing a Cure, seeing they are all of them qualified for enlarging the Diameters of the sudatory Pores, and having a considerable Effect on the most viscid Parts of the Matter that remain behind: For by the Briskness of their Action, they so agitate their Particles, as to disunite their firm Cohesion, and give them such a different Form and Degree of Solidity from that they had before, as disposes them to pass off, through the enlarged Orifices of the Ducts, that carry off the perspirable Matter. It is upon this Account that the holding a Part that is so disordered before the Fire, and applying hot Cloths to it, may be successfully made use of, as *Fienus*, in his Treatise *de Flatibus*, assures us.

Riverius, in the third Book of his Observations, *Obs.* 213. informs us of a Woman of 30 Years of Age, that had a Swelling for eight Months, in the lower Part of the Thigh, and on her Knee; it was not red, but it pained her so that she halted. Many discussing Remedies being applied, the Tumour remained as it was, at last in two Places, *viz.* on the Inside and Outside, there appeared a remarkable Rising, and

and round about it Softness and Fluctuation, so that all conceived there was *Pus* within; a Potential Caustic was applied to the most swelling Part, which was the outer. Afterwards the Eschar being divided, and the Tumour opened, there came out a certain Wind, and nothing else. There is a parallel History to this in *Zacutus Lusitanus's* first Book of his *Prax. Admirand. Obs.* 163. where from *Galen* and *Avicenna*, he assures us, that such Tumours as these in the Knee, are many times opened, supposing there is *Pus* concealed within, whereas nothing comes out but a windy Spirit.

Forestus, in his *Obs. Chir. lib. 3. Obs. 3.* tells us, he cured a certain Person of a flatuous Tumour on his Knee, by the following Cataplasm, (Generals having preceded) *Rx. Sem. Anisi subtiliter pulverisati, Sem. Feniculi, Cumini, Carui, ana Quart. ss. Farinæ Fabarum ʒi. Succi Eluli & Sambuci, Vini Arom. ana q. s. decoquendo fiat Cataplasma.*

OBSERVATION XXX.

Of an Atrophy of the Leg and Foot.

A Gentleman about 34 Years of Age, had for near two Years been very much incommoded with an Atrophy of his left Leg and Foot; for the Cure of which he had patiently indured the various Attempts of Physicians and Surgeons both in *England* and *France*, who made use of internal and external Means, as dietetic Drinks, Plaisters, Lineaments, Embrocations, Baths natural and artificial, &c. but with little Success. Some considerable time after the Use of these Means, he being on Horseback, coming to *London*, his Horse, by some Accident, fell with him, and violently contused the emaciated Member, which excited an Inflammation of the Parts, and violent Pain, whereupon an experienced Surgeon was consulted, who as soon as the Patient was laid

laid in his Bed, involved the contused Member in the Skin of a Sheep just killed, and that Night ordered a Diaphoretic. By the Continuation of the Sheepskins two or three Times a Week, for some Time, the Dimension of the Parts were evidently enlarged; and in a short time after, they re-assumed their natural State, and performed their Offices as before. During the Use of those Means, and for some time after, he lived regularly, and took a Decoction of *Sarsa*. with his other Prescriptions as were ordered. Thus was this Gentleman perfectly recovered, that for near two Years before could not walk without the Assistance of two Servants to support him.

REMARKS.

A Necessary Reflection on this surprising History obliges us to take notice of the Method of the Antients used in the Cure of an Atrophy: Seeing we conceive the accidental Cure of the above-mentioned Gentleman, depended as much on the Effect of Contusion, as theirs on that of Percussion, the natural Consequence of both being an Inflammation of the Part. It is observable, that the Antients, after the Use of Dropacisms or Pications, used to strike the emaciated Part with Ferulas, till it became tumefied, inflamed, and painful; but how these effected a Cure, may in a great Measure be conceived by what we shall advance in endeavouring the Explanation of the Cure of this Gentleman: To give a probable Account of which, we must conceive that the Contusion dissolved the Continuity of some of the small Vessels, which emitting the little Quantity of Blood they contained, it soon coagulated, and would have corrupted, its putrefactive Principle being set at Liberty; but to prevent this, the vital Powers rallied up all their Forces, and immediately detached a greater Quantity of Blood and Spirits to the Part than usual, which distending all the minute Ramifications of the Vessels, tumefied and inflamed it; by this Means the stagnated Matter was attenuated,
and

and qualified for Discussion, which was effected by the Application of the Sheepskin; after this, the Spirits re-assuming their ordinary Course, and the Motion of the Blood being more fierce and fervent in the Part, the contracted Fibres of the Vessels were expanded, and the Course of the Blood and Spirits continued, without any Interruption. *Charleston*, in his *Oeconomia Animalis*, endeavours to prove the Parts are nourished by the *Succus Nutritivus* of the Nerves, and to fortify his Hypothesis, brings an Example of an Atrophy that succeeded a Puncture of a Nerve; but those Gentlemen that endeavoured to establish that Opinion, gave Credit to a groundless Notion concerning Nutrition, *viz.* that the Substance of the solid Parts of the Body was in some Measure daily expended, and that the nutritious Juice was united to the Parts during the whole Course of a Man's Life. Now Nutrition seems to be nothing more than a maintaining a Plenitude of the whole vesicular Compages, with proper Matter; so that an Atrophy must be consequently a subsiding of the Parts, by reason of a Defect of proper Fluids to keep their respective Tubes in their due Distention; not but we must allow that a Deficiency of Spirits in a Part, may cause the like Effect; thus, in a Palsy, the Member is frequently emaciated to a great Degree; the Reason of which seems to be an Obstruction of the Nerves, which intercepts the Influx of the Spirits into the muscular Fibres, by which Means the

Parts are not tumefied or inflated, nor the Vessels turgid; all which, as Dr. *Havers* observes, entirely depends on the free Motion and Energy of the Spirits flowing into them. From hence we may conclude, it is not reasonable to suppose, that though the Blood does in some Measure continue its Course through a paralytic Part, that the Vessels will be so much expanded, as when the Parts are inflated by the Influx of the Spirits; so that the Consequence of this must be a remarkable Alteration in the Dimensions of a Part.

There are several Examples related by Authors of very remarkable Cures that have been wrought by some extraordinary Accident, some of which we shall take notice of, because we are not furnished with an Observation pertinent to that Case last related: *Ægrotorum quidam ex maximis sæpe morbis, omnem medicam manum eludentibus, casu sæpius & fortuito liberantur.* *Less. Obs. Med.* p. 17. *Skenkius* informs us of a certain Epileptic Person, that happening to have a fractured Skull, was cured of a Distemper which he had been for many Years afflicted with. *Hildanus* likewise gives us an Instance of a Wound of the Head that proved very serviceable to the Patient: It was of a certain Person that had the *Cranium* fractured, just at the Concourse of the sagittal and coronal Suture, by which Means he was cured of a *Vertigo* of long Continuance. It is observable there remained a slight Ulcer on the Place of the Fracture,

ture, which perhaps effected this Cure, by the Discharge of Matter. *Riverius*, in his Communicated Observations, *Obs.* 382. relates a very remarkable History of a Boy that was deaf and dumb, that after the hinder Part of his Skull had been fractured, and cured by the Industry of a skilful Surgeon, he perfectly recovered his Sense of Hearing and his Speech. It is to be observed, the Pronunciation of his Words were very imperfect at first, though afterwards he spoke very perfectly. We might here add two or three Instances of Persons that have been cured of an *Ascites*, by the accidental Discharge of the Water, on a Division of these Teguments; but these Cases and others no less remarkable, are very frequent in the Writings of some Authors that have obliged us with the Histories of diseased Persons.

OBSERVATION XXXI.

Of Condylomata, Ficus, Marisca, &c.

A Young Man of about 18 Years of Age, being with a Companion of his that had some time before contracted a *Gonorrhœa*, suffered him, not knowing his Condition, to satiate his abominable sodomitical Inclination, for which several Persons have been lately very justly punished by the Government. This Person, though he thought his Secrecy a sufficient Protection, was not long exempt from the Punishment of the Effects of it; for in a Month's Time several Excrescences began to arise about the *Anus*, which in four or five Months were increased to the Bigness of a Child's Fist. The Tops of several of these about this Time became excoriated, which had the same Effect on those Parts that were contiguous to them:

them : This created so great an Uneasiness, that the Person could neither sit or walk without a great deal of Trouble. Soon after several of them became so much exasperated and inflamed, by the rubbing the Parts one against another, that he was obliged to discover it, and confess what he had through Shame concealed to this Time. It is observable, that about six Months after the Act was committed, he began to be sensible of Pains in his Shoulders, Arms, and Legs, after he began to be warm in his Bed, which increasing, he had Recourse to proper Means for Cure. The first Thing that was done, was the Removal of those Excrecences, which according to their respective Figures, go under the Denomination of *Condylomata*, *Ficus*, *Cristæ*, *Marisca*, and *Morus*; each of these was clipt off close to its Basis, the largest of which were touched with the Lunar Caustic; others, that were not so broad, being only rubbed with the

Vitriol

Vitriol Stone every Day, and dressed with a Solution of the same; thus was this mighty Heap consumed, and the Patient perfectly cured of his Distemper, by going through a slight Salivation.

REMARKS.

THERE is nothing more certain, then that the usual Distemper may be contracted several Ways; but, as *Etmuller* observes, its Symptoms display themselves most in the Part through which the Virulency is first conveyed. If a Nurse be infected, says he, by a Sucking Child, her Breasts are first attacked. If the Disease be contracted by lying in Bed with a foul Person, the Skin and Surface of the Body, are the chief Places where its Retainers assemble. If the Embraces of a foul Woman gave Being to it, the *Penis*, Groin, and adjacent Parts, are the first Scene of its tragical Appearances. To this we may add, that the Part which first received the Virulency, in the preceding Case, was the first that had the Venereal Character imprinted on it. It is the Softness, Laxness, and Spunginess of the Part, that disposes it for receiving and propagating the virulent Matter, sooner than if it were more close and compact: It is for this Reason, the Virulency has a more immediate Effect on the Juices that water the Part; for it is not long before it communicates a corrosive Quality to them. Now no sooner do they receive its ill Impression, but they become capable of eroding the Sides of their respective Vessels; upon which they are presently disengaged from them, and cause such Alterations,

terations, as such depraved Juices are qualified for. The first Effect they have on any Parts, are probably some neighbouring Fibres, which, with some capillary Vessels, become disposed to be lengthened and enlarged. Now these being kept continually distended by the Access of fresh Juice, shoot themselves out, and enfold themselves within the Windings of each other, so as to form such Excrecences, whose various Figures, which are owing to the different Combinations of the Fibres and Vessels, give each of them different Names whereby they are distinguished.

OBSERVATION XXXII.

Of a very large scirrhus Liver.

A Young Woman of about 17 Years of Age, was by an enraged Person struck a violent Blow with an Iron Poker across the *Hypochondrium*. The Effects of it at first were nothing more than might be reasonably expected, from a Contusion of the Integuments only, and were removed with the same Ease by the usual Applications: Soon after, a Tumour was observed to arise on the Part where the Blow was received, which continued to increase for near three Years, at which Time it appeared to be of a very monstrous Size. The Person, in giving us an exact Relation of her Case, assured us, that about a Year and half after the Commencement of her Disorder, she began to be afflicted with a continual Costiveness;

ness; and that afterwards she never had a Stool, without it was procured by some Medicines that were proper for such an Occasion. The other Disorders she complained of, were a Difficulty of Breathing, violent and continual Pain of her Head, and of her Stomach, as soon as ever what she swallowed passed through its upper Orifice, which was likewise very much aggravated, by any thing that was of a pretty solid Substance; upon which Account she seldom took any other Aliment than what was fluid. During the Time of her Indisposition, she continued to take those Medicines that were ordered her internally, from which she received no more Relief than we have taken notice of; the external Applications were nothing more than the Repetition of proper Plaisters, which she received no sensible Benefit by.

REMARKS.

THAT the Liver was chiefly affected in the preceding Case, we may easily collect from the Symptoms that were observed, they being such as must necessarily happen on such a Discomposure of this Part. Now every one (since *Malpighi* discovered the Fabric of the Liver) owns it to be chiefly composed of little glandular Bodies, whose Use is to filtrate a Juice from the Blood, that is of extraordinary Service in the Animal. Upon this Account, if these little Lobes are so disordered, as to render them incapable of being useful in that Office the Author of Nature designed them for, the Juices will unavoidably stagnate, and the whole receive such an Alteration, as is agreeable to the mechanical Structure of the Part. Sometimes in dissecting hydropic Bodies, we have discovered abundance of the little Glands to be perfectly scirrhus, which was probably occasioned by too great a Viscidity of that Juice which ought to have been qualified for passing freely through them. As for those scirrhus Livers that are occasioned by a Contusion, the little Lobes that are placed on the Surface of the Liver suffer the first Contusion of their Parts, and not being capable of performing their Office, the others having a Dependance on them, by Degrees suffer much
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the same Alteration as those that were first affected. To have an exact Idea how this must necessarily happen, we ought to remark that each of those little glandular Bodies consists of a minute Extremity of an Artery rolled up, to which is connected a small Branch of a Vein, and biliary Vessel; through the latter there passes a peculiar Liquor whose Particles are of such a Figure, as qualifies them for passing freely into it, so long as the former Vessels retain their natural State, but if by a Blow, or any other Means, the Vessels that compose some of the little Lobes, become distorted or broken, the Filtration cannot be carried on with that Exactness as is necessary to maintain a regular Order in the Animal Oeconomy; but the Blood, as it continues to move forward in the small Arteries, when it arrives at those Parts where their Passages are discomposed, the Celerity of its Motion must be very much lessened, if not altogether stopped, upon which Account they become disposed to fill with the most viscid Matter the Blood can supply; for it is observable, the most fluid Parts of the Blood pass those Channels where there is the least Resistance, while the Viscidity of the other Parts entitles them to assume that Course where the Motion of the Blood is most embarrassed. From these Premises we may reasonably conclude, that the Motion of the Blood, and Secretion of the Bile being interrupted in some of the small Glands, those that were contiguous to them, must be gradually disordered, and the whole

whole *Viscus* at length disposed, by the large Influx of Blood, stocked with a viscid Matter, to enlarge itself to such a prodigious Degree, as we have taken notice of. It is observable, as the Liver increased in Bigness, the Integuments in that Place continued to be raised, till at length the Tumour appeared to be of such a Form as was agreeable to the convex Part of the Liver, that pressed against them from within. As for the continual Costiveness the Person was afflicted with, it must unavoidably happen when the Bile is no longer discharged into the *Duodenum*, to stimulate the Fibres of the Intestines, by its Acrimony, to perform the peristaltic Motion. The Difficulty of Breathing must necessarily ensue on such an Enlargement of the Liver, because, by its Pressure on the *Diaphragma*, it lessens the Cavity of the Breast, and so consequently prevents a regular Respiration. The violent Pain that was occasioned by the passing of the Aliment through the upper Orifice of the Stomach, may be as easily accounted for by reflecting on the continual Compressure the Part was obliged to suffer. The Stomach being disordered, the Head must necessarily be affected by Means of the mutual Correspondence of their Nerves. And thus we see how the Oeconomy of our Machines is regulated, and what a Dependance one Part has upon the other, for carrying on that regular Order that was established by the first Mover of the Springs.

OBSERVATION XXXIII.

Of a Polypus in the Nose extracted.

A Youth about 15 Years of Age, had for some Time been incommoded in Respiration, by Means of a soft whitish Excrecence, which seemed to proceed by some small *Pedunculi* from the internal pituitary Membrane, that invested the *Foramen* of the right Nostril. This spongy Substance, before it arrived to any considerable Bigness, was attempted to be consumed by Catheretics, which were commodiously conveyed to the Part without the least prejudicing the *Septum*, but not without some Trouble and Pain to the Patient: This Method proved unsuccessful, for beside the frequent Hemorrhages it produced, the Excrecence was suppressed but very little; in a short time after it insensibly increased to such a considerable

considerable Degree as to occupy the greatest Part of the Nostril, and forcing out one of its Sides, it considerably enlarged the Dimensions of the Part, and made the Face deformed; whereupon its Extraction was proposed, and was thus effected. A peculiar Pair of *Forceps* being introduced into the Nose, the Ends of them, which were fitted to encompass great Part of the Excrescence, were dextrously applied to the Sides of it, which engaged it to its very Basis. After this, by turning the Instrument from one Side to the other, and at the same time gradually pulling with the *Forceps*, it was extracted. A small Flux of Blood ensued, which was immediately stopped by applying the following Powder to the Part, *R Vitriol. Ust. ʒii. Bal. Ner. ʒii m.* This was made use of for the two or three Days succeeding, which infallibly suppressed the remaining Parts, that in all Probability, by the Accession of new Matter, might have given Original to such another Tumour.

REMARKS.

THAT we may have an exact Notion of the Formation of a *Polypus*, we ought in the first Place to take notice of the Structure of the internal Membrane of the Nose, seeing we conceive it chiefly contributes to the Generation of this carnous Excrescence. This pituitary Membrane that invests all the Meanders of the Nostrils, consists chiefly of an infinite Number of small Glandules, disposed after a regular Manner, that separate that Humour which discharges itself by the Nostrils, after it is diluted with a Liquor that the *Foramen Lacrimale* furnishes. Now this being premised, it will be an easy Matter for us, by reflecting on such a Distribution and Order of Parts, to comprehend that a *Polypus* proceeds from a Disorder of some of the small Vessels, of which those Glands are formed that chiefly compose that Membrane we have taken notice of. This Discomposure must necessarily occasion an Interruption of their Filtrations, by confounding the Passages of the excretory Vessels, by which Means the Humour stops in the Texture of the Glands, where it consequently obliges them to dilate and expand themselves, till by the Weight of the Juice they contain, the external Plate of the Membrane that covers them is forced to give Way, and form as it were a Bag that

that is capable of being enlarged considerably by the continual Supply of fresh Matter. This Manner of its Formation may seem very rational, if we do but consider that an exact Examination of its Substance after Extraction, demonstrates it to consist of a glandular Substance, distended with a pituitous Humour, which is invested with a fine Tunicle. As for the Form of the *Polypus*, it is such as must necessarily happen from such a Disposition of the Parts, and such Circumstances we have taken notice of. It is observable, that *Hippocrates* always confounded this Tumour with a *Sarcoma*: Now a *Sarcoma* seems to proceed from the Operation of some Juice that is qualified for eroding the Glands and *Tubuli* of the internal Membrane, by which Means the capillary Extremities of the Blood Vessels are disposed to shed some Particles, and extend and fold themselves one within another, which is capable of forming a Substance that very well deserves the Name it is generally distinguished by.

OBSERVATION XXXIV.

Of a Paracentesis performed.

A Woman about 36 Years of Age, had for some time laboured under an *Ascites*, with anasarcaous Swellings of her Feet, Legs, and Thighs: These Humours at first in the Night-Time almost disappeared, but the succeeding Day they re-assumed their former State. The Disease was attended with a continual slow Fever, Difficulty of Breathing, insatiable Thirst, and an almost total Suppression of Urine; she had likewise several small cuticular Eruptions, which continually molested her with their troublesome Itchings. Various Means had been made use of for a considerable Time, in order for Cure, but with very little Success; on which Consideration it was unanimously agreed, in a Consultation of Physicians and Surgeons, that the *Paracentesis*

racentesis should be performed, provided the Patient would comply with the Propofal: This being agreed to, the Operation was effected after the following Manner. The Patient being feated in a large Chair, the Operator placed himfelf commodioufly before her, and at one Thrufi pierced the Belly with a Trocher, accompanied with its *Canula*, about four Fingers Breadth below the Navel, and much about the fame Difiance on one Side; by this Means he avoided penetrating the *Linea alba*, wounding the Epigaftic Veffels, and the Innervations of the *Musculus Reftus*. After this, the Trocher being drawn out of the *Canula*, a free Paffage was given to the Water to make its Exit. A fufficient Quantity being difcharged, which did not exceed three Pints, a fmall Tent was introduced into the *Canula*, over which was applied an adhesive Plaifter, with Comrefs and Bandage adapted to the Part. The next Morning the Patient feemed fome-

what relieved by what had been discharged the preceding Day; whereupon much about the same Quantity was taken away. The third Day all Things appeared under worse Circumstances than the Day before, and so continued till the next Morning, at which Time Death put a Period to her miserable Life. On Dissection, a vast Quantity of urinous Liquor discharged itself from the *Abdomen*; the Glands of the *Peritonæum* were so indurated and enlarged, that they became conspicuous to the naked Eye, which is only observable in Hydropic Bodies; the *Omentum* appeared of a blackish Colour, and was perfectly putrid and rotten; the Liver was preternaturally large, and its whole Substance intirely scirrhus; but a few Drops of Bile were contained in the Gall-Bladder; the Colour of the Spleen was very little altered, but its Size was considerably larger than is naturally observed. There was no remarkable Alteration in any other Parts

Parts in the *Abdomen*, except a few *Hidatides*, which were interspersed on the Surface of the Kidneys and *Tubæ Fallopiæ*. In opening the Breast there appeared nothing worth Observation but the Lungs, the Largeness and Compactness of which was very remarkable ; but this probably proceeded from nothing more than the Infarction of the Vessels with Blood, they always containing a much greater Quantity in astmatic Persons, or those that breathe with Difficulty, than in others, and this must necessarily happen, because it has not a free Passage through them. It is observable, that one of the Lobes of the Lungs was so firmly connected to the *Pleura*, that it could not be easily disengaged from it.

REMARKS.

THERE are several physical Authors that have given their Sentiments concerning the Causes that contribute to the Formation of a Dropsy, with a great deal of Probability, to which we refer the Reader for Satisfaction; only here let us observe, that a Constipation of the Emunctories of the Body, which is always succeeded by a Suppression of Urine, and that of insensible Transpiration, frequently enter into the List of the Causes, or are its inseparable Companions. Now it is easy to conceive, that if these saltish Serosities are not duly filtrated by the Glands of the Kidneys, and evacuated, Sweat and insensible Transpiration being at the same Time suppressed, the Blood must be necessarily clogged with so great a Quantity of it, that its *Crafsis* is soon vitiated, and it becomes altogether incapable of assimilating any proper Particles, so that its whole Mass becomes crude and undigested: From hence we may rationally conclude, that some small Fermentation may be excited by those Salts that destroy the Cohesion of the Particles of the Blood, which circulating through the Heart, may disorder its Motions; and this being communicated to the Arteries, may give Original to their irregular Pulsations. To explain the Cause of the Difficulty of Breathing,

Breathing, we need only remark the vast Quantity of Water in the *Abdomen*, which distending the Parts beyond their natural Degree, pressed the *Diaphragma* very considerably into the Cavity of the Breast, by which Means its Capacity was greatly diminished, so that the Lungs not having Liberty to expand themselves, Respiration must be consequently performed with a great deal of Difficulty. To have an Idea of the Cause of the insatiable Thirst, it is necessary for us to understand, that the *Saliva* of Persons in a State of Health, which is by Nature ordained to humect the internal Parts of the Mouth, and to be a proper *Menstruum* for the Dissolution of the Aliment, is impregnated with certain acid Particles, which the better qualifies it for allaying the Thirst; but in such a Case as the preceding, where the whole Mass of Blood was saturated with lixivious Salts, the Secretion made by the salivary Glands, which had lost their natural Tone, could never be so exact but that the filtrated Liquor must partake of a considerable Quantity of those Salts, which will undoubtedly produce such an Effect; beside this, the Viscidity of the Blood was such as must necessarily lessen the Filtration of this Fluid. The Suppression of Urine proceeded from an Obstruction of the little glandulous Grains, of which the Kidneys were composed, which not performing their Office of Secretion, the Serosities were obliged to return and discharge themselves into the Capacity of the Belly. In order to account for those continual Itchings that

that perpetually molested the Patient, let us take notice, that the Parts which pass from our Bodies by Transpiration, are Salts dissolved in Phlegms; that they are separated from the Blood, by means of an infinite Number of small Glands, which are situated under the Skin, and whose excretory Vessels end at small Holes, which are on the Surface of the Body, and are termed Pores. Now it is highly probable, that those saline Particles that should have passed off with the rest of the perspirable Matter, were detained in those little milliary Glands, where the Juices became saturated with these, by which Means they were capable of eroding the Texture of the Glands, and so causing little Ulcerations. Now the Angles of those Salts, by irritating the little nervous *Fibrillæ*, might occasion those troublesome Itchings the Patient was so subject to. Most of the modern Anatomists that have treated of the Use of the Spleen, have been divided in their Opinions, and puzzled in adjusting its true Use: However, some of them have asserted, it is one of the most useless of all the *Viscera*. But be its Use what it will, we are certain in morbid Bodies we have found it disordered as often as any other *Viscus*, which one would think is sufficient to prove it has a considerable Use, and is of very great Service in the animal Body. In one particular Person that died of a gangrened Ulcer on his Leg, it weighed five Pound four Ounces. The Operation of the *Paracentesis* is very commodiously performed after that

Manner

Manner we have taken notice of; but some Persons assured us it is very rarely successful. *Barbet* says, if we expect a good Issue of the Operation, we must use it only on a Body that is not emaciated or wasted: In a Dropsy that is recent (or at least when the Tumour in a short Time hath risen to a great Bulk) and which upon the Use of proper Remedies would not presently be removed; in such Patients as are not molested with a Fever, or with Difficulty of Breathing, and when the Parts are yet uncorrupted; and in Persons of a middle Age, since in Children and in old People it is unsuccessful. However, we are very well assured, it has been practised with all the Success imaginable; and there are several historical Authors that have given us Account of Persons that have been recovered from this Sort of Dropsy, by the accidental Discharge of the Water on a Division of the Integuments of the *Abdomen*; but see more of this in the Writings of *Beniverius*, *Amatus Lusitanus*, *Valeriola*, *Vidus Vidius*, *Marcellus Donatus*, *Skenkius*, *Laurentius*, *Fienus*, &c. *M. le Clerc*, in his History of Physic, informs us, that *Hippocrates* performed the *Paracentesis* not only near the Navel, but also behind near the Hips; and that he takes express Notice that very few are cured this Way: In another Place he gives a Caution, that the Operation be performed betimes, and that Care ought to be taken not to draw away all the Water at one Time, because those that lose all the Pus or Water at once, infallibly die.

OBSERVATION XXXV.

A Boy about 10 Years of Age, on the Termination of a tedious Disposition of Body, had a pretty large Tumour arose on the right *Hypochondrium*: At first it was inflamed, and attended with pulsitic Pains, and would have probably suppurated in a very little Time; but by the continued Application of Cataplasms that were ordered by some Women, in which the chiefest Ingredient was Hemlock, the Swelling became very much indurated, was cold, and of so ill a Colour, as seemed to threaten a Mortification. However, after a Month or five Weeks Time, it discharged its Matter (which was purulent and foetid) by a small Apertion it made through the Integuments; upon this an experienced Surgeon was consulted, who, on a Division of the Abscess, discovered a small Quantity of the
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the Excrement to come away with the Matter. This continued to discharge for at least three Months, during the greatest Part of which Time, he was ordered to lay chiefly on his Back, that the Excrement might the sooner re-assume its ordinary Course, and the Intestine be disposed to re-unite. To this latter, the thin Diet, and traumatic Decoction he was confin'd to, did not a little contribute. There was a Clyster given him, or a Suppository made use of, every Day, to bring away some Part of the *Fæces* that otherwise, by its Stay, might become indurated, and so probably obstruct the Passage of that which came behind it, and oblige it to solicit its Discharge at another Place, which would have been very inconvenient, the Abscess being brought to a tolerable good Digestion. It was dressed with a Decoction of *Hyper. Cent. & Rad. Gent.* to which was added a little Honey.

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This deterged and incarned it in three Weeks Time, and in less than a Month after, he became perfectly well, and so continued, he being living at this Time.

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REMARKS.

FÆCES *alvi, quæ secundum naturam per intestinum rectum & anum evacuantur* (says the celebrated *Sennertus*) *quandoque præter naturam per alia loca excernuntur.* And indeed this Assertion is abundantly confirmed by Examples related by Authors. *Mercurialis, Schenkius, and Thom. a Vega,* inform us of Persons that discharged their Excrements by their Mouths. *Alex. Benedictus* relates the History of a Boy, that after an Abscess, had great Part of the Excrement came away every Day by the Navel: And there is much such a Story in *Cardan de Subtilitate, lib. 18.* *Fernandus Senior* has given an Account of a Person that discharged his *Fæces* through his *Penis.* There is nothing more certain, than that Nature may be sometimes obliged to vary her established Laws, when there is such a Defect in the Conformation of some particular Part, as that *Hildanus* takes notice of, *Cent. 1. Obs. 75.* where, by reason of an imperforated *Anus,* the Excrement found a Passage through the *Meatus Urinarius* in a Woman with the Urine: But where there is a Perforation of one of the Intestines by a Wound or Ulcer, Part of its Contents will unavoidably discharge themselves, as they continue to be pushed on by the Action of the intestinal Fibres. It is very probable, that the Hemlock that was used on the first Appearance

ance of the Tumour, in the preceding Case, by its cold and repercussive Quality, did not a little contribute to produce those ill Effects that succeeded the Use of it. *Pliny* and *Dioscorides* have given it a very ill Character; and it is most certain, from its causing a Stagnation of the Juices in a Part, and preventing its Increase, for which it was recommended by some of the Antients, it may probably be attended with such Accidents as may not be easily recoverable; and this it will the sooner effect in such a Case as that abovementioned, where the Tumour being caused by a Crisis of the Disease, did not require such cold Applications, but those that were qualified for setting at Liberty the combant Particles that should have promoted Suppuration. It was a very unhappy Case, that a poor Boy about eight Years of Age laboured under, who having a cold hard Tumour about the Navel for several Months, was committed to the Care of a Person, that by the Means he made use of, seemed not to be apprehensive of the dangerous Condition he was in, the Tumour considerably increasing, but without any Manner of Pain, except what was occasioned merely by the Distention of the Parts: After some time it opened of itself, and a considerable Quantity of Matter, of an ill Colour and Smell, discharged itself, the Orifice being gradually enlarged by putting in Tents of different Sizes; a Quantity of the *Fæces*, with some Worms, daily came away with the Matter, the Smell of the Excrement being as offensive as if it had
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been discharged by the *Anus*. In short, all the Excrement that came away, soon after found a Passage through the Abscess; the Boy lost his Appetite, became extremely emaciated, and at length died. *Vauguion* assures us he has seen a Soldier who had one of the great Guts cut, which was joined by a Cicatrix to the Wound of the Belly, through which the *Fæces* passed, the *Anus* being closed up. The most observable Thing in this Case, was, the Excrement which he voided had no discernible Smell. The same Author relates from *Hildanus, Cent. 6. Obs. 72.* that a Surgeon having the Misfortune to cut one of the great Guts in the Operation of the Bubonocèle, the Gut cicatrised to the Wound, and the Party voided his Excrements, and sometimes Worms, by this Orifice.

Diemerbroeck gives us an Instance of a Person who laboured under a Bubonocèle for many Years; at length the Intestine burst, and the Excrement falling into the Cavity, was soon succeeded by a Gangrene: Proper Means were made use of for the Separation of the gangrened Parts; and this being effected, the Gut was found to be broken, the upper Part of which hung out, and gave Passage to the Excrement. This End of the Intestine afterward acquired a fleshy Substance, which united to the neighbouring Flesh, and gave Passage to the Excrement, which discharged into a little brass Pot, which he commodiously carried for that Purpose. It is observable the Patient was not in-

disposed in nine Years afterwards. The same Author gives us an Instance from *Platerius*, of a Captain, that after a Wound in the Belly, voided his Excrements through a Pipe for many Years, which was left in the Wound.

Rider, in his Practical Chirurgery, p. 61, 62, 63. *Obs.* 24. relates the History of a young Man that had the ill Fortune to receive a dangerous Contusion from the End of a Coach Pole running against his Belly, a little below the Navel. The neighbouring Women had for a Week or more applied Poulteffes of boiled Turnips and Sallet Oil; but at length, finding the Case to exceed their Capacity, our Author was sent for to take care of him. When he came into the Room, he smelt a most filthy Stench, and removing their Poulteffes, he found the Excrements came through, and lay upon the Belly in a great Quantity; and that a Piece of the *Abdomen*, about the Bigness of the Palm of one's Hand, being of a livid Colour, began to separate from the rest. He applied Stupes hot from a Decoction of Centaury, St. *John's* Wort, Rosemary, Wormwood, Camomile, and Melilot Flowers, Rue, Agrimony, Speedwell, Bay-Berries, and Juniper-Berries, in equal Parts of Wine and Water; with this he fomented Morning and Night; he also at each Dressing injected some of the Decoction aforementioned, adding to it some *Mel. Ros. Tinct. Traumat.* and a little Tincture of *Tberiacæ Andromachi*; and then turning him
upon

upon his Belly, that the Injection, together with the foetid Matter and Excrements, might pass forth, he applied Dossils and Pledgets dipped in the same Injection warmed, to the Places whence the Matter and Excrements issued out, and upon them a Plaister of *Mitbride* spread on Leather, and over all a hot Stupe wrung out dry. In the mean time, the Patient wanted not for Cordial Juleps to refresh and fortify his Spirits against the Malignity of those venomous Vapours perpetually offending and debilitating him; and every other Day he took a Clyster of a Decoction of vulnerary Herbs, with Syrup of Roses solutive; the greatest Part of which for above a Fortnight came forth at the external Orifices below his Navel: At length the Intestines did consolidate, and the Clysters came not through as before; the Matter grew thick and white, and little in Quantity: The large and deep Slough being cast off, our Author incarned, and afterwards cicatrised; so that in the Space of six Wæeks he became well, and so continued.

O B S E R V A T I O N X X X V I .

Of a cancerated Arm amputated.

A Woman near 50 Years of Age, had a small Tumour arose on her right Arm, a little below that Place where a few Days before she had been let Blood: The Swelling at this Time being but inconsiderable, and not incommoding her in the least Respect, she omitted the making use of any Applications, and took but little notice of it, following her Business, which was Washing of Linnen, till by its gradual Enlargement it became extremely troublesome; at length she thought herself obliged to apply herself to a Person that was recommended to her for the Removal of her present Disorder. The Applications that were for some time continued to be made use of, were emollient, from which she received no Benefit,

Benefit, they only serving to relax the tense distended Teguments, and give Opportunity to the Increase of the Tumour; whereupon she disengaged herself from those Hands, and committed herself to the Care of another Person, who by applying improper Means, increased her Pain to such a Degree, as was almost insufferable; beside which, it was soon succeeded by a most horrid stinking Ulcer, with extraverted Lips, which with what else was observed, were distinguishing Characters of a Cancer: In this Condition she continued a considerable Time, the Tumour continuing to increase till it was of a monstrous Size: At length she was advised to have her Arm amputated, there being no other Way to be proposed with the least Prospect of Success. This she willingly complied with, which was effected as usual. At the Removal of the first Dressing, which was three Days after the Operation, the Stump was observed to be extremely dry,

there not being the least Gleet or Moisture, as is usually observed on the Dressings; infomuch, that in a Fortnight's Time, she became very much emaciated and dried. The Particulars that were remarkable in the cancerated Arm, after its Separation from the Body, were a prodigious Mass which seemed to be homogenous in itself, of a whitish Colour, and resembled coagulated Juice. After it was cleared from the Membranes, and other Parts to which it adhered: And at least half a Pint of Water, like Serum in Colour, discharged from several Cavities that were in its internal Substance. It weighed 3 Pound and 3 Ounces. There were several Branches that proceeded from different Parts of its Substance, each of which took a different Course from the other; a very considerable one there was that passed up the Arm, which was very near six Inches long, and of an unequal Bigness; some Part of it did not exceed the Largeness of a Goose-quill, while

while some others were near as big as the Top of the Thumb, which resembled so many Knots in it; those Branches were of a more tender Substance than the Body of the cancerous Mass: About the Middle of the Branch it divided, and passed separate about an Inch and a half, and then re-united. It is observable, there was double the Quantity of refluent Blood as is usual, discharged in and after the Operation was performed.

R E M A R K S.

THE particular Enquiry we made into the Composition and Nature of the cancerous Mass, was chiefly owing to some Circumstances we met with in the History of the Cure of a Cancer related by Mr. *Gendron* in his Treatise of the same Subject. The Case, as it contains somewhat rare, we shall transcribe: A Person came to our Author who had an ulcerated painful Hardness in the Middle of his Forehead that could not be cured, and had the same Symptoms as the Cancer of the Skin. He was of Opinion to attempt the Cure by Escharotics, and having so done, the Scab being fallen off, the Ulcer was cicatrised. Some time after, there appeared a little Hardness in the Scar, of a livid Colour, and painful, which made him resolve to apply the same Remedy as before; and having so done, and in a greater Degree, when the Scab was gone, he thought he had no more to do than to bring the Ulcer to a perfect Scar; He began as before, with a greater Proportion of Corrosive; and the third Day of Application, being impatient for the Scab to fall off, he stirred it here and there, holding a Probe on the Middle of the Sore, when he perceived some white Filaments in the Space between the Scab and the Flesh, which by a Probe were discovered to be hard: He continued

tinued to stir the Scab; then taking hold of it with an Instrument, and drawing toward him, he found it give Way, and drew along with it at the same Time those white and hard Filaments, which put the Man to much Pain; they proceeded from several Places, some coming from that Part towards the Eye, others from the Nose, while some again proceeded from above all the Forehead, from the Head. When he had got them loose, he found them to be like the Beards or Roots of Onions or Leeks. He made no Doubt of a Cure; in short, a Plaister healed the Sore. All the Reflections we could make on those white Filaments, were not capable of satisfying us what they were, or how they were produced; upon which Account we were resolved, the next Opportunity that offered itself, strictly to enquire into the cancerous Substance, and see if we could discover any thing that had a Resemblance to those Filaments or Branchings-out. The abovementioned Case was the first that came in our Way, and obliged us with the Discovery of what we have taken notice of. After this, we examined Cancers of the Breast, but could discover none of these Branches, which gave occasion to believe, they were never to be found where the Cancers spring from a Discomposure of the Glands; for in this Case the coagulated Lymph seems to be confined to the glandular Substance, to which it is so firmly united, that it seems to form one uniform Substance, too solid to suffer any Part of it to make its Escape into any Vacuities

cuities where they might be formed. One would think that Reason might inform us, that if ever we expect to be perfectly acquainted with the true Cause, Composition, and Method of the Formation of Cancers, we must diligently apply ourselves to the anatomizing of them, and with all the Scrutiny imaginable examine their Substance; for by this Means we shall soon undeceive ourselves, as to those Things which the Antients, for want of an exact Knowledge of the Juices, were obliged to give Credit to. The prodigious cancerous Mass we have made mention of, as it appeared to be a homogeneous Substance, altogether exempt from the Intermixture of Vessels, or any other Parts, was at first probably nothing more than a viscid Juice, coagulated by somewhat that was capable of causing such an Alteration in it: What we may reasonably suppose that to be, we shall take notice of when our Discourse leads us to it; at present we are obliged to examine what Fluid our Bodies contain, that is qualified to undergo such a Metamorphosis. Those that were of Opinion, that some particular Alterations in the Blood were the efficient Causes of Cancers, were altogether unacquainted with the lymphatic Juice, the Discovery of which is owing to the happy Industry of modern Anatomists. Indeed, we ought to do this Justice to the Antients, as to believe, had they been acquainted with this Fluid, they had never established their melancholy, atrabilious, and adust Blood to be the Cause of Cancers, seeing they might

very

very well account for their livid Colour and Ulceration, by reflecting on the Mechanism of the Parts, and gradual Increase of the Cancer: This it is that gives us an Idea of these Things, quite different to that of our Predecessors; which assures us it is a Composition of such Parts, which, when united, are disposed to coagulate, as soon as the Fluid they compose is extravasated. That which contributes very much to it, we suppose to be the external Air, or the frequent Emerfion of the Part in cold Water, as was that unhappy Woman's Case we related before: Now no sooner was some Part of it coagulated and fixed underneath the Integuments, but it formed itself a Cavity that was capable of containing it, till by the gradual Affemblage of Particles of the same Fluid, and perhaps some from the contiguous Fibres, its Bulk began to be considerably augmented; then it was that the Juice that continued to be supplied, was obliged to insinuate itself into those Spaces where it found the least Resistance, one Part of it directing its Course this Way, and another directly contrary. This was what formed those Branches we have before taken notice of; which according to the several Inequalities of the Cavities it lodged itself in, must assume a Figure conformable to them; and as these were the last Parts that were supplied, no Wonder we observed them to be of a Texture so different from the Body of the cancerous Mass, which was much more compact and close. This Closeness and firm Cohesion of the Parts
that

that composed the Body of the Mass, was effected by its gradual Advances outwardly; for by this Means the Membranes became very much distended, which having an elastic Power, must necessarily compress the Mass with a Force almost equal to that which opposed them; this being so, as the Membranes and Mass continued to act on each other, the Contiguity of the solid Parts of the cancerous Substance must become much greater; upon which Account, those Parts that were more fluid, not being qualified for uniting themselves with the other Parts, were, as it were, expressed by them, and obliged to collect themselves in Cavities in that Part of the Mass where there was the least Compression. This Advance of the Formation of the Cancer, as it is agreeable to the Structure of the Part, and Nature of that Juice which we conceive solely contributed to it, must be much more reasonable than to suppose (according to Mr. *Gendron*) that Cancers are nothing more than a Change of the nervous glandulous Parts, and the lymphatic Vessels, into an uniform, hard, close, indissoluble Substance, capable of increasing, and being ulcerated; for we can never reasonably imagine, those Parts of themselves can be sufficient to occasion Cancers of such a considerable Bulk as are sometimes observed. *Vide Salmuth. Obs. Cent. 2. Obs. 33.* Beside this, the Sinking of the Pipes, and close Union, we cannot conceive that a Cancer of
such

such a prodigious Bulk could be formed in this Part, by a Disorder of any Glands, because there are none that are capable of receiving such an Alteration, neither were the Parts that encompass it disordered or discomposed, any more than one might reasonably expect from the Compressure of such a prodigious compact Substance: We never yet saw any Substance, that to outward Appearance bore so great an Analogy to the cancerous Mass we have been speaking of, as the coagulated Lymph we have sometimes seen cover the Surface of the grumous Part of the Blood underneath the *Serum*, after it has been settled in a Porringer, above the Thickness of a Crown-Piece: This concreted Juice, which takes its Place in the stagnated Fluid, according to its specific Gravity, after it has been cleansed from the red Parts of the Blood, that cohered to it, by washing it several Times in fresh Water, seemed to be of the same Substance with the cancerous Mass, only of a little more loose Texture; beside this, the Alterations that were made on these two Substances, by putting them into various Sorts of Liquors, that were capable of having a considerable Effect on them, were equally alike the same. We cannot say but there seemed to be some Difference in the Colour, Composition, and Compactness of this cancerous Substance, and that which is generally observed in the glandulous Parts, which may very well be, because one appeared to be one or more of the Juices purely coagulated, the Parts of
which

which were compressed close by the Elasticity of the Integuments, and the other a Transformation of a coagulated Lymph and glandular Substance, which were intimately incorporated into a firm compact Mass. We have seen a diseased Foot where the Lymphatics have been discomposed and broken by Abscesses, Ulcers, &c. of a long Continuance, that after the Leg has been amputated, though upon another Account, the Integuments of the Foot have been so thickened by an extravasated lymphatic Juice coagulated, that a Piece cut off exactly resembled a Part of the cancerous Substance of the Breast. *Platerius*, in his Observations, *lib. 2. pag. 531.* tells us of a Maiden 14 Years of Age, that on the spontaneous Opening of a Cancer of her left Breast, *primo affluxit albuminis Ovi instar, albus, viscosus, tenax, actu frigidus humor, quantitate mensuræ unius.* Whether this was actually a lymphatic Juice, grown somewhat viscid, we cannot positively determine, though it seems reasonable to suppose it. The ill Success that is daily met with in attempting the Cure of Cancers, has given occasion for some Persons to believe, that a Depravation of the Juices of the Body is always their Concomitant; and that their Cure will be impossible, till the Juices are rectified. Now according to what we have advanced, the Cause of the Rebelliousness of Cancers must be confined to the Cancers themselves; and this seems to be confirmed by an Observation, that several Persons that have undergone the Extirpation

pation of Cancers, have been perfectly cured only by the Use of external Applications, and continued well during Life, without making use of any inward Means: Add to this, that Cancers are oftentimes formed during a State of Health; so likewise those that do not perform the Operation with that Exactness as is necessary, and suffer any Part of the cancerous Mass to remain behind, notwithstanding all their Internals, to recover the degenerate State of the Fluids, as they imagine, must seldom or never expect to be successful in their Attempts. As the Lividity and Ulceration of a Cancer chiefly led the Antients to a Belief, that adust Blood, Melancholy, &c. were the real Causes of Cancers; so the Moderns, upon the same Account, have assigned a corrosive Acid to be the only Cause: But to prove that the Lividity, without the Operation of an Acid, may be accounted for from the gradual Increase of the Cancer, we shall take notice, that as the Mass continues to enlarge itself every Way, it must consequently, by Degrees, compress those Parts that are contiguous to its Sides: Upon this Account, as the Integuments of the Body in that Part are the only Parts that are incapable of resisting the opposing Force, they must suffer a very great Distention: By this Means the small Branches of the Vessels, that are extended on the Surface of the Part, must be very much discomposed, and their Sides being obliged to be almost contiguous, the Blood must necessarily stagnate in them, and so occasion that

livid Colour that is observed: This will still have a greater Appearance of Truth, if we do but take notice that the Lividity is always observed to be here, where the Integuments and Vessels suffer the greatest Compressure: As to the Ulceration, it is generally effected a little after the Patient is sensible of a troublesome Itching in the most prominent Part of it; but this never happens till the cancerous Mass is increased to a very great Degree, and the Membranes themselves become incapable of any farther Extention. The Sleekness, Shining, and extraordinary Thinness that is observed where the Eruption begins, is sufficient to prove this. Now, no sooner is the Skin divided, but the Air has an Opportunity of displaying its ill Effects on that Part of the Substance that is thus divested; and as this Division or Ulceration increases, the Sides of the Integuments that firmly adhere to the outward Parts of the cancerous Substance, having suffered such a prodigious Distention, by their own proper Power gradually endeavour to recover their former contracted State (for they have a Faculty of Restitution, as they are elastic Bodies). Upon this Account those external Parts of the Substance, to which the Edges of the Integuments were united after their Division, must be necessarily drawn outward, and occasion those extraverted Lips that are always observed in these Cases. We shall conclude these Remarks with an Account how, from a mechanical Disposition of the Parts, the Juice that was disengaged
from

from its Vessels after the Mass became of a considerable Bulk, was more viscid and apt to coagulate; this requires us to consider the Compressure the Vessels, must undergo by a Substance of so considerable a Bigness. Now it is certain, if the Diameter of the Branch of any Artery, be at any Time considerably lessened, it immediately becomes qualified for receiving the most viscid Matter the Blood can supply; upon which Account we may reasonably suppose, the Juice the lymphatic Vessels receive from the same Branch will partake of a greater Viscidity than usual: Besides this, a very large Quantity must be necessarily discharged; for the slower the Motion of the Blood is, the more Lymph is separated, more especially if the Veins suffer a Compressure.

OBSERVATION XXXVII.

A Child betwixt 4 and 5 Years of Age, by some Accident received a Fall, by which the left Side of the Breast was very much contused. The Inconvenience that first attended it, was nothing more than an Uneasiness it occasioned upon some particular Motions of the Body. After some Time the Child began to be seized with a Cough, which daily increased, till a great deal of purulent Matter was almost continually cast up; during the Continuance of which, it breathed with a great deal of Difficulty, its Belly swelled, it became wonderfully emaciated, and at the End of about 5 Months died. The Body being laid on the Table, in order to be dissected, a Part of the Integuments of the left Side of the Breast appeared discoloured; after the same Manner as though there
was

was a Quantity of extravasated Blood lodged betwixt them: No sooner were these divided, and the *Sternum* with the Cartilages raised, but the left Lobe of the Lungs appeared so prodigiously large, that it filled much the greater Part of the Capacity of the Breast. In this Lobe there was a very great Quantity of purulent Matter contained, and a very large Ulceration on that Part over which the Blow was received. The Part of this Lobe, that before was contiguous to the *Pericardium*, was now extended quite over it, and firmly united to it. The *Pericardium* itself was grown perfectly cartilaginous, in which there was as much Water as it was capable of containing. The right Auricle and Ventricle of the Heart were wonderfully enlarged, as likewise the *Arteria Pulmonaris*. There was about four Ounces of discoloured Serum lodged in the Diaphragm. We prosecuted the Examination of the Parts, but found nothing more that

was remarkable, except the Glands of the Mesentery, which were extremely enlarged, and grown perfectly scirrhus. It is most certain, that this alone was sufficient to occasion a Consumption, because it must unavoidably cut off all Manner of Communication of the Child with the Blood. There might have been probably some other remarkable Phænomena in the Body of this Child; but the short Time that is allotted for making an Enquiry into the Parts on such Occasions, does not give an Opportunity of examining all the Parts with that Scrutiny as is necessary.

REMARKS.

IT is certain there is nothing of greater Necessity then a regular Respiration, in order to maintain the Body in a State of Health ; and whenever a Person is so unhappy as to have this disordered, he is soon sensible of several troublesome Inconveniences. Now there are some Causes that must conspire to render this Respiration agreeable and natural ; as a sufficient Enlargement of the Capacity of the Breast, a convenient Weight and Elasticity of the Air, a good Disposition of the Lungs, a proper Consistence of the Blood, and its regular Motion. We shall not particularly examine all these Points, but only take notice how such a Discomposure of the Lungs, or one of its Lobes, as we have mentioned, causes an irregular Breathing, Stagnation of the Blood, &c. We must look upon the Lungs to be chiefly a Composure of little Bladders, fixed to the Extremities of the *Bronchi*, which in Inspiration are very much distended ; among these are distributed an Infinity of Branches of Blood-Vessels, Nerves, and some Lymphatics. We cannot suppose, according to the Opinion of a very learned Physician, that the little Vesicles have a Power to contract or dilate themselves ; tho' we may reasonably believe they have a very considerable Spring which

assists them in recovering their depressed State, after they have suffered so great an Extension. Now, according to the Disposition and Order of these Parts, it must necessarily happen that whatever is capable of weakening the elastic Force of the little Air Bladders, must necessarily dispose the Blood to a Stagnation in that Part; for all the Time these little Cells remain extended, the Vessels continue to be proportionably lengthened and enlarged, upon which Account they become very much distended with Blood; but this not meeting with its usual Compressure from the Subsidence of the Vesicles, it stagnates there, and by its Corruption, causes an Alteration of the contiguous Parts. Now no sooner is this corrupted Blood extravasated, but by its Weight, it presses upon some of the little Air Bladders, and so effectually prevents their being expanded to their usual Degree, from whence the Patient must necessarily become Asthmatic: But it is certain this does not at all incommode the Action of those Muscles that served for the Enlargement of the Breast. The Quantity of Air that passes the *Aspera Arteria*, will after some Time be almost in the same Proportion to that which was received before; upon which account it must distend some of the *Vesiculæ* so much beyond their natural Degree, as to contain near as great a Quantity of Air as all of them would have done, had they retained their natural State. By this Means we may very well account for the Largeness of the left

Lobe,

Lobe, and particularly its being extended so far over the *Pericardium*. As to the Magnitude of the right Auricle and Ventricle, with the Enlargement of the Diameter of the *Arteria Pulmonaris*, it must unavoidably happen, because the Celerity of the Motion of the Blood was very much interrupted; and now this being so, its Quantity must be very much increased in those Parts, which must augment its expansive Force, and this being applied to the Sides of the containing Vessels, it will necessarily distract them, or enlarge their Cavities.

OBSERVATION XXXVIII.

Of a Fistula in Ano.

A Man of about 40 Years of Age, by some Accident, received a Fall, by which the *Anus* and contiguous Parts were very much contused. About 3 Weeks after a small Tumour discovered itself near the Verge of the *Anus*, which became very troublesome to him, by reason of the Pain and perpetual Itching it was attended with; which in a few Days was succeeded by a *Tenesmus*. The Tumour was opened by Incision, and a Quantity of viscous undigested Matter discharged itself: After this the Abscess was filled with dry Dossils, over which was applied a Plaister with convenient Compress and Bandage. The next Day the Dressings being removed, a *Sinus* was discovered, which past about 3 Inches high, and

and penetrated the Intestine. The Patient being made sensible of it, the Necessity of laying it open was too evident. This being complied with, the Operation was thus performed: The Patient was placed on the Side of a Bed, with his Thighs divaricated, a Servant being on each Side to be serviceable in keeping asunder the Buttocks; then the Surgeon passed a pliable Probe through the Fistula into the Intestine, and having introduced his fore Finger into the *Anus*, engaged the End of the Probe, and drew it outward through the *Anus*; after this he brought the Ends together, and drawing the Flesh and Intestine to him, he, with one Snip of his Probe Scissors, divided the Fistula. The Wound was filled with Dossils, dipped in a good Digestive, which was this. *R. Terebinth. Venet. ʒi. Linim. Arcæi ʒii. m.* The Dossils were so disposed, that the Medicine had its Effect equally on all Sides. The better to remove the Callosity and excite a speedy Suppuration;

ration, over these were applied Pledgets armed with more of the Digestive, with a Plaister and a triangular Compress, all which were kept on with the Bandage called the double T, the same which is used for securing the Dressings of those Persons that are cut for the Stone. In about 5 Days Time the Wound being well digested, it was dressed with this sarcotic Tincture. *Rx Flor. Hyperici. Centaur. ana mss. Myrrhæ, Aloes, ana ʒss. S. V. q. s.* In this warmed there were soft Dossils dipped and introduced, over which was applied Plaister, Compress, and Bandage, as before. This Method of Dressing was continued about 3 Weeks, (endeavouring as much as possible to dress immediately after every Stool) in which Time the Wound was sufficiently incarned, and in a Week more it was perfectly cicatrised with *Ung. Desiccat. Rub.*

REMARKS.

THESE Sort of Fistulas are more frequently caused by some Fall, Blow, or any Thing that violently contuses or compresses the Part, than by any other Means. Most of those that we have seen, have been procured by Persons accustoming themselves to ride long Journeys. It is most certain, that whatever causes a Stagnation of the Blood in the Part (which it is very subject to, by reason of the Disposition of its Vessels) or distorts and discomposes the true Order of the Fibres, so as effectually to prevent the regular Motion of the Juices, must necessarily produce an Abscess; and this it will effect, though the Matter never come to be suppurated, nor indeed can it well; for the Temperament of these Parts are such as is scarce sufficient to furnish such a Degree of Warmth to actuate the stagnated Fluid, as to cause a kind Suppuration. From hence it is when we open these Swellings near the *Anus*, we find the Matter to be generally viscid, and of an ill Colour; besides this, the Quantity of Salts it abounds with, renders it corrosive, and so qualifies it for causing a Callosity. If we endeavour in such Cases as these are to promote Maturation, by the Application of Cataplasms that

that consist of warm Ingredients, we do not find that they communicate such a sufficient Degree of Motion to those Particles that should engage one another, as to cause a subtile and active Putrefaction; but, on the contrary, if they are moist and juicy, it disposes the Matter to a slow, saline, and mucid Corruption. It is no hard Matter to conceive that if the Juices are extravasated in such a soft fungous Part, they will take an Opportunity of assembling themselves together, and lodge in some Place that is best qualified for receiving them, where they will continue till by the gradual Addition of fresh Matter, that Cavity they had formed begins to be incapable of containing them: Then it is that Part of them sollicit other Passages to empty themselves into, till at length several *Sinus's* are formed, the Sides of which, by the saline Quality of the Matter, generally become callous in a short Time: But this Callosity is always more or less in proportion to the Time the Fistula has continued, and to the Quantity of Salts with which the Matter abounds; the Consideration of which may sometimes save the Surgeon a great deal of unnecessary Trouble, when he shall be about to continue his escharotic Applications longer than there is a Necessity. One of the chiefest Cautions that Authors have given us in the Cure of Fistulas in *Ano*, has been not to make a Division of the Intestine, if it is penetrated above the *Sphincter Ani*: The Reason
they

they alledged for it was, that the Retention of the Excrement afterward would be impossible. *Fistulæ quæ quatuor digitos penetrant, et per musculos progrediuntur, curari non debent. Curando enim fit, ut alvus excrementa retinere non possit, says Sennertus**. But notwithstanding there have been Persons of such Authority as has been sufficient to recommend them that have all along been of the same Opinion; yet we must always chuse rather to check an established Notion, backed with the most refined Reason, than controul Matter of Fact. It is upon this Account, we shall take the Liberty to mention a Case, though it be such as cannot be reconcileable to the Sentiments of our Predecessors. The Instance is of a Gentleman that had a Fistula that penetrated almost four Inches up the Intestine, that was laid open by Ligature, and successfully cured, there being no such Inconvenience attending it as some Persons might have thought they had Authority to fear. After the Probe had been past along the Fistula till its End came through the Perforation of the Intestine, the Surgeon was obliged to make Use of a Pair of Forceps to engage it and draw it out, the Finger not being sufficient to effect it in this Case. The *Tenesmus* which afflicted the Patient, the History of whose Cure we just now related at large, was probably caused by the

* Fistulas four Fingers Breadth deep, and which pass through the Muscles, ought not to be cured: For by curing them, the Belly is rendered incapable of retaining the Excrements.

acrimonious Particles of the Matter, which vellicating the membranous Parts, solicited the Patient to go to Stool without any real Necessity. This seems to be evident enough; for on the Discharge of the Matter, this troublesome Accident ceased.

It is to be observed, that the *Sphincter Ani* hangs over the Extremity of the *Rectum* a Finger's Breadth, so that in the Operation if the Incision be not made above the *Sphincter*, there is always about an Inch more of this Muscle cut than of the *Rectum*.

OBSERVATION XXXIX.

A Man about 34 Years of Age, of a very ill Habit of Body, had been for a long Time incommoded in his Business, by Reason of a very large Ulcer upon one of his Legs: He had applied himself to various Persons for Cure, and confined himself for some Months to a Method prescribed him by one of his Surgeons, which chiefly consisted of mercurial Drugs and a dietetic Drink. The Ulcer was fordid, and the Edges of it of a very ill Colour at the Commencement of this Method; but by obliging the Patient to desist from Walking as much as possible, and Dressing the Ulcer with *Mundific. Paracel.* to which was added, a little *Pul. Scammonii*, it was in four or five Days Time very well deterged. After this it was brought into a very narrow Compass by *Ung. Basilic.* and

Præcip. The Sore looked very well, would have persuaded one it would have healed, and but little Matter discharged from it. Notwithstanding all this, though the Attempt had been so successful hitherto, it would not cicatrise any farther ; nor was it in the Power of the several Medicines that were applied to it to bring it into a less Compass than that of the Breadth of a Six-pence, or a little bigger. The Fault was at first laid upon the Patient, imagining he had not confined himself to the taking his Physic regularly, but given himself too great a Liberty in Eating and Drinking what had been improper : In short, soon after, upon a little Cold the Patient had taken, the Colour of the Matter which discharged itself, began to be altered, and in a few Days it became very fœtid. About this Time several little Ulcerations broke out round the Sides of the Ulcer, which likewise looked very ill, and in a Week's Time it extended it-
self

self to the Breadth of almost the Palm of the Hand, and began to mortify. Upon this it was dressed with *Tinct.* of *Myrrh.* and *Egypt.* which in a few Days put a Stop to its Progress. The Sloughs being digested off, the Ulcer remained very fordid, and discharged a very large Quantity of stinking Matter. This partaking of a corrosive Quality, eroded the Sides of it very considerably, enlarged it every Way, consumed the Flesh at the Bottom of it, and laid the Tendons of some of the Muscles bare. These were always dressed with a spirituous Medicine, to prevent their Corruption as much as possible: But in a Week's Time the greatest Part of two of them was entirely corrupted, and easily came away, by taking hold of them with the Forceps. The Expendence of Matter continued to be very great; the Patient was seized with a Looseness, lost his Appetite, and looked of a very strange Colour; his Eyes

appeared to be very dull and heavy; his Face seemed to be livid, and his whole Body was very much emaciated. He continued in this Condition about ten Days, and then expired. On Dissection the most remarkable Thing that offered itself was his Spleen, which was of a prodigious Bigness, and of a blackish Colour.

REMARKS.

ULCEA crurum plerumque difficilia curatu sunt, imprimis si et lienis vitio foveantur; tum enim crassi et melancholici humores ad ulcus affluentes ejus curationem impediunt*, says Sennertus, Lib. v. Part 2. Page 149. Hippocrates likewise takes notice, that those Persons that have large Spleens (*Lienosi*) are very subject to Ulcers on their Legs that are of difficult Cure. Such was the Case of a Man we saw that died of a gangrened Ulcer on his Leg, in whom the Spleen was found to be so large, that when taken out of the Body, it weighed five Pounds four Ounces. We have seen a Man of 35 Years of Age, who for a considerable Time had laboured under an *Ascites*, that had a very fordid Ulcer on each Leg, which could hardly be kept from mortifying, though the most proper Applications were made Use of: Beside this, there were abundance of cuticular Eruptions that discharged the Serosity in very large Quantities, and a great many blackish Spots that were in-

* Ulcers of the Legs are often difficult to cure, especially if they are nourished by a distempered Spleen; for then the thick and melancholy Humours flowing to the Sore, hinder its Healing.

terspersed all over the Parts. This Man's Countenance was very much like that mentioned before; though it is always somewhat remarkable in hydropic Persons, that the chief Alteration observable after Death in the *Viscera*, was in the Liver and Spleen, both of which were very much enlarged, and grown scirrhus. *Hippocrates, Epidem. 7.* mentions one or two Cases that are similar to what we have related.

The same Author says, That they are troubled with bad Gums and stinking Breaths, who have large Spleens; but they who having large Spleens, are subject to bleed, and yet have no ill Smell in their Mouths, are troubled with bad Ulcers in their Legs, and black Spots.

It is an Observation of some Physicians, that those that inhabit moist and fenny Places have large Spleens. *Wepfer* (as cited by *Diemerbroeck*) found a Spleen in the Body of a Noblewoman, that exceeded five Hands breadth in Length, four in Breadth, and one and a half in Thickness, and weighed about six common Pounds. *Cabrolus* makes mention of one that weighed five Pounds; and *Skenkius* relates out of *Gamerus*, the Story of one that weighed 23 Pounds.

Le Clerc observes, that *Hippocrates* cauterised the Breast and Back of those Persons whose Spleen was over-grown, as well as those that were pthical. The Instruments he made Use of for this End, were sometimes red hot Irons, sometimes Spindles of Box steeped in boiled Oil, and sometimes a Sort of Mushrooms, and likewise what he called *Linum Crudum*.

OBSERVATION XL.

A Man of about 32 Years of Age, of an unhealthy Constitution of Body, and one that for a considerable Time had been attended with an Asthma, applied himself to a Surgeon for Advice concerning a Swelling on the left Side of the lower *Vertebræ* of the Back ; which he said he began to be sensible of about 6 Weeks before. The Tumour was at this Time about the Bigness of one's Fist, not at all discoloured, pretty hard, and almost altogether exempt from Pain. The Surgeon supposed the Matter was contained in a Cyst, and judged it to be atheromatous : He was of Opinion to proceed to the chirurgical Part of the Cure immediately, because in such Tumours, and in such a Part, it is not at all adviseable to wait for a Suppuration ; for besides the Hazard there is in effecting it, the Distention of the *Pus* oftentimes

times corrupts the contiguous Parts, and proves of very ill Consequence. It was upon this Account he made a crucial Incision of the Integuments the very next Day following, and removed the greatest Part of the Cyst, with its contained Matter, which was of a whitish Colour, and a pretty unequal Consistence. The first Dressing consisted only of dry Dossils to keep asunder the divided Lips, and to absorb the Matter; over which was applied Plaster, Compress, and Bandage, which was adapted to the Part. The next Day it was dressed with a Digestive, which was continued about a Week, in hopes it might consume the remaining Part of the Cyst, which was united to the contiguous Parts by some Filaments so strongly, that it could not be drawn away by the Forceps. The Digestive procured a speedy and copious Suppuration, but it did not effectually answer the Design of its Continuance. It was about this Time that the Bot-
tom

tom of the Abscess began to fill with a loose fungous Flesh, Part of which seemed to proceed from the remaining Part of the Cyst; but this was at once consumed by the Application of an escharotic Powder; and no sooner was the Slough separated, but the Abscess looked very clean, and in a good Condition. After this it was dressed with a vulnerary Decoction, to which was added a little *Mel. Egypt.* By this Means in a Fortnight it appeared to be well incarnated; but the Matter continued to discharge in a very large Quantity. The Patient was advised to confine himself to the drinking a traumatic Decoction he was ordered, to rectify the degenerate State of the Juices, lessen the Quantity of Matter, and dispose the Part to heal; his Diet was Meat of easy Digestion once a Day, at other Times Biscuit with Raisins, or sometimes Butter. After some Time he effectually laid aside the Use of Malt Drink, and wholly confined himself
to

to his vulnerary Decoction. He thought he was obliged to observe the Rules that were prescribed him, even to the nicest Particular, and omit nothing that might contribute to a happy Recovery; but notwithstanding this, all the Means made use of proved to be ineffectual; the Quantity of Matter did not at all lessen, but formed a *Sinus*, which could be traced to the acute Process of one of the *Vertebræ*: There was an Injection made use of, which was continued for some time; but as large a Quantity of Matter still continuing to discharge, the Patient became emaciated to a very great Degree, so that he was obliged to be confined to his Bed, where after he had continued about 6 Weeks, he was seized with a Looseness, made purulent Water, his Feet and Legs swelled, and then he expired. On Dissection, two of the *Vertebræ* were discovered to be carious; the Processes of which were so rotten, that they might be rubbed to Pieces with the Fingers;

Fingers; the *Sinus* was traced, and found to penetrate into the left Kidney, a great Part of which was consumed by an Ulceration; there was about a Pint of Water lodged on the *Diaphragma*, the Heart was very loose and flaccid, and the Lungs were of a livid Colour.

REMARKS.

THE Prognostics the Antients made of the Danger that Abscesses near the *Vertebrae* were attended with, have been all along sufficiently confirmed by the Experience of later Ages. The chief Reason they gave for foretelling such an unhappy Event, had respect to the Nobility of the Part affected, it being the Seat of the spinal Marrow, and a Multitude of Nerves which were detached from it. There were several other Parts that they distinguished by the same Character of being more noble than the rest, as the Brain, Heart, &c. and in general, any Part, whose Use they thought was most immediately serviceable for the Continuation of Life. There are certainly some Circumstances which relate to the Structure of this Part, that disposes it to be attended with dangerous Accidents, whenever a Person is so unhappy as to have it affected after such a Manner as we have taken notice of: Beside this, the Matter that is contained in these Abscesses, can hardly ever be brought to an active and kind Suppuration: Whether this proceeds from a Deficiency of Heat in the Part, that being always necessary in such Cases, to communicate such a certain Degree of Activity to the Particles of the Matter, more especially those
that

that are saline, as may dispose them to engage with one another, and maintain a perpetual Intercourse with the other Parts; or whether it proceeds from such a Disposition of its Parts, as altogether unqualifies it for such an Engagement, we shall not determine; though it is reasonable to suppose, that both in some Measure contribute to it. It is probable, the Abscess was occasioned by a too great Viscidity of the Juices, which by that Means became disposed to stagnate; and this obstructing the Passages of that which came behind them, occasioned a prodigious Distention of the Vessels, till at length they were obliged to disengage themselves from them, and lodge themselves in a Cavity, that was capable of containing them, where they became intimately incorporated. Now as this increases in Bulk by the Addition of fresh Matter, by its Continuance it begins to grow more viscid, and assumes a greater Degree of Solidity; by this Means it becomes the better qualified for distorting and discomposing the true Order of the Fibres, which formed the Sides of the Cavity it lodged itself in; this displacing of the Fibres will necessarily procure a larger Accession of Juice than ordinarily, whereby they will enlarge and distend themselves till they shoot out other smaller Branches, which engaging themselves, and en-folding within each other, they form a Sort of membranous Bag, which is fashioned into various Figures, according to the re-
 spective

pective Cavities the stagnated Matter is lodged in. There are other peculiar Tumours that are continued in Cysts, beside what we have taken notice of, the Substance which composes them being of a very different Colour and Consistence; but these Alterations proceed from nothing more than the Modification the Parts of it receive by its being differently mixed with other Juices. We never had the Opportunity of seeing more than two of these Cases, beside what has been related. The first was a Boy that had two Abscesses on his Loins, one on each Side the *Vertebræ*; but by the Care of a skilful Surgeon, he recovered, and is living at this Time, though a Part of one of the Kidneys might be easily discovered, for several Weeks after the Abscess on the same Side was laid open. The other was a young Fellow who had several Abscesses near the *Vertebræ* of the Back, some of which being opened, ended in incurable sinous Ulcers, which discharged so large Quantities of Matter, that the Patient died emaciated to the last Degree. We could not discover the *Vertebræ* to be carious in this Patient, nor could we ever find out the Termination of the *Sinusses*, some imagining they penetrated into the Cavity of the Breast; others being of Opinion (which was most probable) that several of the *Sinusses* had Communication one with another, and that was the Reason they were traced with so great Difficulty. It is to be observed, that we do not give
the

the Impostumations that happen near the *Vertebrae* on the Termination of a Disease, or such like, so ill a Character, as those where the Matter is a long Time in congesting, and remains cold and heavy in the Part, and only tends to a slow mucid Corruption; the former of which are for the most Part free from Danger, being attended with Heat, Redness, Tension and pulsific Pains, all which are Signs of a speedy Suppuration.

OBSER-

OBSERVATION XLI.

A Man of about 40 Years of Age, in an Engagement, received a Wound in the right *Hypochondrium*. A Surgeon being called some Time after, found it to be several Inches in Length, with a Part of the *Omentum* hanging out of it, which was very much discoloured, the Lips of the Wound being turgid and inflamed. The Air, which at that Time was pretty cold, had had a free Access to the Wound, which causing an Inflammation of it, so straitened it as to press on the prolapsed Part of the *Omentum* equally on all Sides. This Strangulation was likewise increased, when the Juices became stagnated, which will immediately happen in a Part that is so disposed to receive the Impressions of the Air. A Ligature was immediately made on the Caul, a little above that Part that had received

ceived the Alteration, which was cut off, the Ends of the Thread being left hanging out of the Wound. After this the Surgeon was of Opinion to perform the *Gastroraphia*, notwithstanding the Inflammation the Parts were attended with. In order to effect this commodiously, the Artist introduces the Fore Finger of his Left Hand into the Wound, and a little raises one of its Sides; then he passes his crooked Needle betwixt his Finger and the *Peritonæum*, and pierces the Integuments from within outward: He afterwards takes another Needle, which is armed with the same Thread with the former, and pierces the *Peritonæum* and Muscles as before. If there is no Necessity of making any more Stitches, a Servant applies his Fingers to each Side of the Wound, and moderately compresses them, till he obliges them to be contiguous. Then the Surgeon makes his Knot to retain them in that Posture. The Suture being made, the
Wound

Wound was dressed with Pledgets, armed with a proper Balsam, over which was applied convenient Compress and Bandage. The Inflammation ceased, and the Parts were disposed to unite as soon as ever the Wound began to digest, which was the second Dressing; though before, the extraordinary Tension of the Parts gave Occasion to fear the Suture would not be sufficient to retain the Lips together. In short, there was no ill Accident attended it afterwards; but it united firmly in less than a Fortnight, and the Stitches being cut out, the Patient became perfectly well in three Weeks Time.

REMARKS.

GALEN in *Lib. 6. Method. medend. contra Thessalium*, gives us the first Hint of making a Ligature on the Caul before we would take off the corrupted Part; which Method has been continued to be mentioned by some of our most valuable Writers, only with this Difference, that some of them are for applying an actual Cautery after the Abscision, which is to be made about an Inch from the Ligature. Of this Opinion is *Johannes de Vigo, Cap. 11. de Vulner Ventris*, who recommends it as a very safe Way. However, there seems to be an absolute Necessity for the making a Ligature on it, before any Part of it be cut off, lest the Blood discharge itself into the Capacity of the Belly, and there corrupt, and so procure a Train of mischievous Accidents; as it happened in that Person whose Case is related by *Forestus* in his *Obs. Chirur. Lib. 6. Page 23, 24, &c.* where he tells us, An unskilful young Surgeon inconsiderately cut off the *Omentum*, that was fallen through the Wound, without making a Ligature on it; from whence it was attended with an Effusion of Blood, a Corruption of the *Omentum*, a Fever, and other troublesome Symptoms. *Hippocrates* seemed to be very sensible of the Inconveniences that must necessarily attend the exposing the
the

the *Omentum* to the Air, by his 58th *Aphorism*, where he says, *Si omentum exciderit, necessario computrescit*. Now, in order to understand how this Part becomes disposed to corrupt soon after the Air has had an Opportunity of exerting its Influence upon it, we must observe that it is of an exceeding loose Texture, watered with Abundance of Juices, and chiefly a Composure of Vesicles, filled with a thick oily Substance. Now no sooner is such a Part exposed to the Air, but it will immediately coagulate and harden its oily Juice, whose Fluidity is only preserved by the moderate Degree of Warmth the contiguous Parts communicate to it: Beside this, it will condense and fix the Blood and Lympha in its Vessels, they not being clothed with any Thing sufficient to defend them from its Action. By this Means it will immediately appear cold and lifeless, nor is it in a Condition to be animated by any active Particles, could they be transmitted to it. Add to this, that the very Continuance of any Part of the *Omentum* without the Wound, will very much contribute to the Stagnation of the Blood; for during the Time it is in such a Posture, the venal Fluid will be obliged to remount against its own Weight; which it cannot well do, because that in the Arteries will lose so much of its Velocity, as not to be able to communicate a sufficient Degree of Motion to it. From hence its Stagnation will gradually begin to commence, which in a little Time will be succeeded

ceeded by a Mortification. One of the worst Accidents that attend these Sort of Wounds, is the violent Tension they are subject to, upon the indiscreet Application of improper Medicines, or Miscarriage of the Patient. But whenever this happens, it may be proper to make use of some emollient and resolute Applications, which by softening the Fibres, unqualify them for making an Effort for disuniting themselves.

Galen de usu part. Cap. 9. informs us of a certain Gladiator, who being wounded in the Belly, had the greatest Part of the Caul cut off, notwithstanding which he became well. There was a very remarkable Circumstance which our Author takes notice of in this Case; which was, that he was so much incommoded by the external Cold, that he was obliged to wear Woollen upon his Belly daily. But notwithstanding this, *Riolan* affirms from his own Observation, that such as have had the Caul cut out, have found no prejudice by it to their Concoction.

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That you shall haue of it.
- Printed by *Adam Ifflip* 1599. It treats of, 1. Urines. 2. Oyles. 3. Gun-Shot Woundes. 4. Astrologie. 5. A Discourse of Human Nature, by *Hippocrates*.
- 4 The Institution of a *Christen Man*. Conteynyng the Exposytion of the Commune Crede; of the 10 Commandementes; of the 7 Sacramentes; of the *Pater-Noster*, *Ave Maria*, Justification and Purgatory. Dedicated to King *Henry VIII*.
- 5 The Doome, Warning to the Judgement. Being an Historie of the most surprizing Prodigies. Collected by *Stephen Bateman*, with many Cuts. _____ 1581
- 6 The Byrth of *Mankynde*. Treating of all suche Thynges the which chaunce to Women in theyr Labor. _____ 1540
- 7 *Evonimus*, his Treatyse of Destillacyon, with Cuts. _____ 1565
- 8 Dr. *Jones*, his Treatyses, viz 1. Of the Natural beginning of growing and living Things, &c. 2. *Galen's* Booke of Elements. 3. The Bathes of Bathes Ayde; at *Asple-Hall* besydes *Nottingham*. 4. The Benefit of the Ancient Bathes of *Buckstones*, at the *King's-Mede*, nigh *Darby*. 5. The Art of preserving Bodie and Soul, &c. _____ 1572
- 9 The Decades of the Newe Worlde; or West-India Conquered by the Spanyards. By *Peter Martyr*. _____ 1555
- 10 The Questyonary of Cyrurgyens, with the Formularge of lytell *Guido* in Cyrurgie. (No pages nor date.)
- 11 *Guydo's* Questionaries of Chyrurgerie. 2. The 3d and 4th Books of *Galen*. 3. An Antidotarie of picked Medicines. All published by *George Baker*, Surgeon. _____ 1579
- 12 *Barrough's* Method of Phisick. _____ 1590
- 13 *Vigo* and *Gale's* Surgery. _____ 1586
- 14 *Clowes* his Chirurgerie, and *De Morbo Gallico*. _____ 1585
- 15 *Eden's* Art of Navigation. _____ 1579
- 16 *Fourestier's* Pearle of Practise in Physicke and Chirurgerie. 1594
Also, with it, A Storehouse of Physicall and Philosophicall Secrets.

- 16 Boorde's Breuiary of Healthe. ————— 1557
 17 Sir John Smythe's Discourses on several Weapons; of Archery and
 the Long-Bow. ————— 1590
 18 Baker's Haven of Health, or the Arts of Physicke, Surgery and
 Distillation. ————— 1576
 19 Cooper's Chronicle. ————— 1565
 20 The *Castel of Health*. Gathered and made by Syr Thomas *Elyot*
 Knight, out of the chief Authors of Phisyk. ——— 1539
 21 Bishop Latimer's Sermons. ————— 1548
 { *Menardus's* Natural Historie of the West Indies, with Cuts. 1596
 22 { *Alonardu's*, of the Virtues of the *Bezaar*-Stone, and of the
 Hearbe *Escuercónera*. —————
 { *Escriuano*, of the Virtues of Yron. ——— 1589
 23 *Laufrana's* Surgery. ————— 1565
 24 *Arceus's* Surgery with Cure of the Caruncle and Fistula. 1588
 25 *Woodall's* Surgeons Mate. ————— 1617
 { *Clowes*, of the Venereal Disease. ————— 1585
 { *Baker*, of the Nature and Propertie of Quicksilver. 1588
 { A Proved Practise for all young Chirurgians in the Cure of
 Gunshot and all other Wounds, &c. By Mr. *Clowes*.
 26 { A Treatise of the French Pocks. By *John Almenar* a Spanish
 Physician. —————
 { *Clowes's* Artificial Cure of the Kings-Evil. ——— 1602
 { A Treatise of the *Lues Venerea*. ————— 1596
 { These Pieces are all bound up in one Volume; and this was the
 Author's own Book. *W. Beckett*.

English QUARTO'S.

- 1 DOCTOR *Rutty* of the *Urinary Passages*; and of the *Stone* in
 the *Kidneys* and *Bladder*. with Cuts. ————— 1726.
 2 Dr. *Stukeley's* Account of a *Roman-Temple*, and other Antiquities,
 near *Graham's Dike* in *Scotland*. And of the *Roman-Amphitheater*
 at *Dorchester*. with Cuts. ————— 1723.
 3 *Wright's* Errors in *Navigation*, detected and corrected. ——— 1657.
 4 Dr. *Power's* Experimental Philosophy. ————— 1664.
 5 Mr. *Greatrakes's* Account of his own *Wonderful Cures* perform'd by
Stnoaking. Sent to the Honourable *Robert Boyle* Esq; with a curious
 Print of Mr. *Greatrakes* by Mr. *Faithorne*. Also Dr. *Stubbes's* Account
 thereof sent to Dr. *Willis*. ————— 1666.
 6 *Barlowe's* Nature, Properties, and Experiments of the *Loadstone*, 1626.
 7 *Read's* Chirurgical Works, ————— 1630.
 1. The Damnable Life and Deserv'd Death of Dr. *John Faustus*.
 ————— 1608.
 2 The Notorious Life and Ignominious Death of Dr. *John Lambe*.
 ————— 1628.

- 3 The Murther of HENRY the 4th of France by *Ravillac*. 1610
- 4 The Life and Death of *Martin Luther*. 1641.
- 5 The Life and Penitent Death of *Francis Cartwright* Gentleman, who murther'd the Reverend Mr. *Storr* of *Market Rayson* in *Lincolnshire*. Written with his Own Hand- 1621.
6. The Life and Death of *Freeman Souds* Esq; (Son of Sir *George Souds*, of *Lee's-Court*, in *Shelwich* in *Kent*) who murther'd his Elder Brother: Being a Mirrour of Judgment and Mercy. 1655.
- 7 The Life and Death of that famous *French* Robber *Monfieur Du Vall* (written by Mr. *Butler*, Author of *Hudibras*.) 1670.
- 8 The vain prodigal Life, and tragical penitent Death of *Thomas Hellier*, who murder'd his Master, his Mistrefs, and their Maid Servant. 1680.
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- 12 The Life and Memorable Actions of *Father Petre* the *Jesuit*, &c.
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- 11 Memoirs for the Ingenious, Philosophical, Mathematical, Historical, Physical, Phylological, &c. 1693.
- 12 A Catalogue of the printed Books and Manuscripts given by the Duke of *Norfolk* to the *Royal Society* of *London*. 1681.
- 13 *Muffett's* Treatise of Foods. 1655.
- 14 *Bushell's* Mineral Discoveries. 1659.
- 15 *Dr. Cotta's* Tracts. viz. 1. *Dr. Antony's Aurum Potabile* prov'd to be false and counterfeit. 2. A Discovery of several Sorts of ignorant Practisers of *Physicke* in *England*. 3. The Tryall and true Discoverie of *Witchcraft*. 1612.
- 16 A Collection of State Tracts publish'd in the Years 1632, 1640, 41, 42, 43, &c. 3 Volumes.
- 17 Papers publish'd in the Year, 1661.
- 18 *A Light shining out of Darkness*; treating of Ministers, Tythes, Quakers, &c. 1651.
- 19 *Page's Sick Mens Glasse*. 2. *A Sponge* to wipe away the *Weapon-Salve*, by the Reverend Mr. *Foster*. 3. *Fabricius Hildaus's* Experiments in

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20 Wurtz's Surgery.	_____	_____	1612.
21 Cogans Haven of Health.	_____	_____	1623.
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24 Rhead's Anatomy with 53 Cuts.	_____	_____	1612.
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26 Poeton's Chyrurgian's Clofett.	_____	_____	1651.
27 Biggs's Vanity of the Craft of Phyfick.	_____	_____	1641.
28 Prynne's Antipathie of the English Lordly Prelacie.	_____	_____	1671.
29 Droyle's Usefulness of Experiential Philofophy.	_____	_____	1631.
30 Parfon <i>Foster's</i> Sponge to wipe away the Weapon-Salve. Also, The Sponge squeez'd by Dr. <i>Fludd</i> .	_____	_____	1684.
31 Goodall's History of the Collection of Physicians.	_____	_____	1693.
32 Cooke's Marrow of Surgery.	_____	_____	1652.
33 Ashmole's Theatrum Chemicum: Or, Collection of Chymical Trea- tifes.	_____	_____	1652.
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2 A Prefervative againft the Plague and Small Pox.	_____	_____	1652.
3 Gadbury's Causes of Plagues.	_____	_____	1665.
4 Of the Shutting up Infected Houses	_____	_____	1665.
5 Kephale's Signs, Symptoms and Antidotes againft the Plague.	_____	_____	1665.
6 Kemp's Nature, Cause and Cure of the Pettilence.	_____	_____	1665.
7 Dr. Handy's Discourse on the Plague.	_____	_____	1665.
Volume II. Containing, <i>viz.</i>			
1 A Defenfative againft the Plague.	_____	_____	1593.
2 A Treatife on the Pestilence.	_____	_____	1596.
3 Manning on the Pestilence.	_____	_____	1604.
4 Directions for Times of Pestilence.	_____	_____	1625.
5 Henoeh Clapham on the Péttilence.	_____	_____	1604.
6 Best approv'd Treatife for the Plague.	_____	_____	1625.
7 Borafon on the Pestilence.	_____	_____	
8 Directions for the Cure of the Plague by the College of Physicians.	_____	_____	1636.
35 A Collection of 23 Tracts written for and againft Apothecaries in 2 Volumes. Volume I. Containing, <i>viz.</i>			
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3 A Reply to Dr. Merrett's Book by the Apothecaries.	_____	_____	1670.
4 Dr. Merrett's Reply to the Apothecaries.	_____	_____	
5 Dr. Goddard of the unhappy Condition of the Practice of Phyfick in London.	_____	_____	
6 Answer to the Letter written in 1664, concerning the Practice of Phyfick.	_____	_____	1670.
7 Dr. Stubbe's Plea for the Apothecaries, in Answer to Dr. Merrett.	_____	_____	1671.
	_____	_____	8 Dr.

- 8 Dr. Maynwaring of the Ancient and Modern Practice of Physick. _____ 1671.
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- 5 A True State of the Practice of Physick.
- 6 The Charter granted to the Apothecaries by King James I.
- 7 The Usefulness of Dispensaries set up in London.
- 8 Proceedings of the College in behalf of the Sick-Poor. _____ 1697.
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- 10 The Calamities of the Sick occasion'd by the Apothecaries.
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- 13 State of Physick and Surgery in London. _____ 1701.
- 14 The Case of William Rose Apothecary, as represented to the House of Lords. _____ 1704.
- 36 Cochin-China: Or the Rarities and Singularities of that Country, presented to the Pope by Christopher Barri, who liv'd certain Years there. Translated out of the Italian by Robert Ashley. _____ 1633.

Libri Latini in QUARTO.

- 1 **W**IERI, de Prestigiis Dæmonium & Incautionibus ac Verificiis. _____ 1577.
- 2 Wecken, Antidotarium Geminum. _____ 1595.
- 3 Daudi, Tractatus Practicus de Simplicibus.
- 4 { TRIPUS AUREUS. *i. e.* (Tres Tract. Chym:) *viz.*
1 Basili Valentini, 12 Clavibus Operat. Chym.
2 Thoma Norton Tractatus Chymicus.
3 Cremeri (Abbat. West.) Testamentum, Chymicum, 21 Fig. elegant. per De Bry.
- 5 { Crollii, Basilica Chymica. _____ } 1508.
} _____ Anatomia Maj. & Min. Mundi. _____ }
- 6 Thomas Fseni, Libri Chirurgics xii. De precipuis Artis Chirurgiæ Cou-
- 7 Lougi, Pastoral: De Daphicide & Chloe. Gr. Lat.
- 8 SYMBOLA AURÆ mensæ xii. Nationum. *i. e.* Philosoph. Hermet: Tractat: 24 Fig: elegant. per De Bry. _____ 1617.

9	Le Grand Dictionnaire Francoiſ-Latin.		
10	Opus Exinicum quod Tractat : med : Divers :	—	1536.
11	Galeoti martii De Nomina.		
12	Hen: Savilii (Eq: Aurat.) Prælect : in xii. Libris Euclidis.		1621.
13	Joelis, Operum medicorum.	—	1621.
14	Wittichii, couſilia meduinalia.	—	1604.
15	Trittenhem, De Scriptoribus Eccleſiaſticis	—	1512.
16	Bruneri, conſilia medica.	—	1617.
17	HEURICI viii. Aſſertio vii. Sacramentorum adverſus Martin Luther.		
			1522.
18	Directorium & crede michi, &c.	—	1518.

Libri O C T A V O.

1	L Eland, de Scriptoribus Britannicis.	—	1706
2	Grabei, Spicilegium Patrum.	—	1714
3	Novatiani, Opera.	—	1728
4	Fabritii ab Aquafendente, Opera Chirurgica.	—	1620
5	Schanckii, Obſervationum Medicarum, 2 Tom.	—	1601
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8	Plateri, Obſervationum Medicarum.	—	1641
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10	Hollerii, Opera Medica and Chirurgica.	—	1570
11	Mercurialis de Compoſitione Medicamentorum, &c. 2 Tom.		1591
12	Junii, Nomenclator Omnium Rerum, Propria Nomina, 7 Linquis explicata.	—	1391
13	Moroni, Directorium Medico-Practicum.	—	1650
14	Schuenckfelt, Theſaurus Pharmaceuticus.	—	1630
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16	Dodonei, Obſervationum medicinalium.	—	1571
17	T. Bright, Cantebriegenſi De Sanitate Tuenda, and medicine Therapentice.	—	1583
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19	Schenck a Graf Bibliotheca medica.	—	1609
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21	Machiavel, de Republica.	—	1599
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24	Riverii Praxis Medica.	—	1637
25	{ Capivaccii de Lue Venerea. — 1590 Hippocratis Aphoriſmi Verſibus Scripti: per Joan: Frerum Auglum. — 1567 Hen: à Bra de Calculo. — 1591 Leo: Rogani de Urinis. — 1560		
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			27 Nollii

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30	Scaligeri de Subtilitate ad Cardanum.	1650
31	Chitræi Inscriptiones Antiquæ.	1599
32	Galeni methodus medendi. Interpret Linacri.	
33	De Tuenda bona Valetudine.	
34	De Opii Natura and medicamentis Opiatis, &c.	1612
35	Gormeleni Synopsis Chirurgiæ.	1566
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39	Witten Memoriam medicorum.	1676
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41	Castellani Vitæ Illustrum Medicorum.	1617
42	Loffii Observationum Cedicinalium.	1672
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46	Fieni de Cauteriis.	1598
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49	Bartholini Historiarum Anatomicarum & medicarum Rariorum. 3 Tom.	1661
50	Marchetti Observationum medico-chirurgicæ.	1665
51	Tractatus de Sale Philosophorum.	1651
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54	Billii Locutionum Græcarum Formulæ.	1678
55	Bayfield Exercitationes Anatomicæ.	1668
56	Blancardi Anatomia Practica Rationalis.	1688
57	Val: cordi Dispensatorium.	1627
58	Schmitzii Medicina Practica. Praxis Medicorum vel Formula Remediorum.	
		De recte curandorum Vulnerum Ratione, De Febris, &c.
59	Corn: a Berghem Syllabus Observationum in Re Med: Phys: & chymica.	1696
60	Corn: Celsi de Re Medica.	1554
61	Bontii de Medicina Indorum, Lib: iv.	1642

Octavo's English, PHYSICK and SURGERY.

1	DOCTOR Cole's Physico-Medical Essay on Apothecaries.	1689
2	Dr. Morton's Treatise on consumptions.	1694
3	Vauguion's Body of surgical Operations.	1699
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5	Dr. Friend's History of Physick. 2 Volumes.	1726
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| 8 | Dr. Robinson's New Treatise on the Venereal Disease. | 1736 |
| 9 | Dr. Pitcairn's Physical Dissertations. | 1727 |
| 10 | Cheselden on the high Operation of cutting for the Stone. | 1729 |
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| | Keil's Medicina Statica Britannica. | |
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| 17 | Fabricius Hildanus, of the Stone in the Bladder, | 1640 |
| 18 | Tolet's Treatise of Lithotomy. With 20 Cuts. | 1683 |
| 19 | Maynwaring's History and Mystery of the Venereal Lues. | 1693 |
| 20 | Shirley's Compendium of Surgery. | 1683 |
| 21 | Bennett's Treatise of Consumptions. | 1654 |
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- 50 Simpson's Hydrologia Chymica: Or, Animadversions on the Account
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- 51 Dr. Wittie's Pyrologia Mimica: In answer to Simpson. _____ 1669
- 52 Simpson's Vindication of Hydrologia Chymica. _____ 1671
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Well. 2. The Stinking-Well. 3. The Dropping-Well. 4. The
Putrifying-Well. _____ 1652
- 54 Wilson of the Vitrioline-Spaw, near Durham. _____ 1675
- 55 Borlase of Latham-Spaw in Lancashire. _____ 1670
- 56 Dr. Tonstall's Anatomy of the Scarbrough-Spaw. _____ 1670
- 57 Dr. Witties Defense of the Scarbrough-Spaw in answer to Dr.
Tonstall's Objections. _____ 1672
- 58 Sympson's History of the Scarbrough-Spaw. _____ 1632
- 59 Dr. Rowzee's Treatise on Tunbridge-Waters. _____ 1632
- 60 Dr. Peter's Treatise on Lewisham-Wells. _____ 1681
- 61 Judge Ramsfy of the Vertues of Tobacco and Coffee. _____ 1664
- 62 Dr. Rose's Account of a famous Styptic. _____ 1701
- 63 Dr. Grew of the Bitter Purging Salt. _____ 1691
- 64 Garencieres of the Vertues of Coral _____ 1676
- 65 Rational Experiments on Coral and Steel. _____
- 66 Sir Ulrick Hutten de Morbo Gallico. England. _____ 1539
- 67 Wynell of the Venereal Disease. _____ 1670
- 68 Needham of Consumptions and the Ven. Disease. _____ 1700
- 69 Salmon of the French-Pox. _____ 1690
- 70 Warren's Cure of the Ven. Disease without Internal Medicines. _____ 1710
- 71 A Treatise of Salivation. _____ 1702

C H Y M I S T R Y.

- 72 Cooper's Compleat Catalogue of Chymical Books. _____ 1675
- 73 Dr. Thompson's Chymical Tryal of the Galenists. _____ 1665
- 74 Johnson's answer to Dr. Thompson. _____ 1665
- 75 Dr. Castle's Chymical Galenist reconciled. _____ 1667
- 76 Thompson's Grilogismi Chymici. _____ 1673
- 77 Hartman's Chymical Secrets. _____ 1683
- 78 Phadro's Art of Chymistry. _____ 1674
- 79 Godfrey's Detection of Abuses in Chymistry. _____ 1674
- 80 Starkey's Natures Explication. _____ 1657
- 81 An Hermetical-Banquet drenched by a Spagyric-Cook. _____ 1653
- 82 Maierus History of Rosi-Crucious, their Laws translated, &c. _____ 1656

English Books printed between the Years 1500 and 1600.

1 THE Funeral Sermon of Margaret Countess of Richmond and
Derby, Mother to King Henry VII. By Wynkyn de Worde. 2

Workes of Chirurgerie.	—————	1564
is of the Abuses committed in Physick.	—————	1566
es's Dyall for all Agues.	—————	1566
ingefeld's Precepts for Preserving Health.	—————	1551
De Virtutibus: Of the Properties of Herbs.	—————	1550
The Antidotharius: How to make Plaisters, Salves, &c. By <i>Wier</i> .	—————	1568
8 Of the Natures and Properties of all Wines.	—————	1541
9 The Myrour or Glasse of Helthe, 2 Vols.	—————	1574
10 The Composition or making of <i>Oleum Magistrate</i> .	—————	1548
11 Dr. Recorde's Urinal of Physick.	—————	1552
12 Langton of all the Colours of Urines.	—————	1552
13 ——— His Introduction to Physick. ——— Printed by <i>Edward Whytchurche</i> 1547. This <i>Whytchurche</i> was originally a Merchant. He married the Widow of Archbishop <i>Cranmer</i> . This Langton was a learned Physician and detected the Abuses of Apothecaries.		
		<i>W. Beckett.</i>
14 Maplet's Green Forest: Or, Natural History.	—————	1567
15 The Hope, or Regimen of Helth.	—————	1563
16 Askham's Eytel Herball.	—————	1550
17 A Compendious Regimen of Health.	—————	1576
18 The Treasurie of Commodius Conceyts.	—————	1580
19 The Difference between Ancient and Modern Physicians.	—————	1585
20 The Government of Health.	—————	1595
21 A profitable Treatise of Anatomie.	—————	1577
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